CONTENTS

EDITORIAL

Cupping of the Disc – Current Concept

Prof. M Yasin Khan Durrani------------------------------------------------------------------------------------------------------------------------707

GENERAL SECTION - ORIGINAL ARTICLES

1. Educational Environment: Student Perception as per DREEM Inventory.

Mashhood-uz-Zafar Farooq----------------------------------------------------------------------------------------------------------------------------708

2. Frequency of Iatrogenic Ulnar Nerve Injury in Displaced Supracondylar Fracture, treated with Closed Reduction and Percutaneous Pinning.

Inam ullah Khan------------------------------------------------------------------------------------------------------------------------------------------712

3. Outcome of Optical Internal Urethrotomy in Acquired Urethral Strictures (A Prospective Study)

Muhammad Alam-------------------------------------------------------------------------------------------------------------------------------------------715

4. Comparison Between Stapled & Open Hemorrhoidectomy

Sayed Adil Shah-------------------------------------------------------------------------------------------------------------------------------------------718

5. Functional Outcome of Acute Kidney Injury in Children Reporting in a Teaching Hospital

Sadaf Rasheed------------------------------------------------------------------------------------------------------------------------------------------------722

6. Taboo about Reproductive Health Problems in University of Lahore

Zahid Iqbal--------------------------------------------------------------------------------------------------------------------------------------------------726

7. Supraclavicular flap for Head and Neck Reconstruction: (A Study of Case Series)

Muhammad Shadman------------------------------------------------------------------------------------------------------------------------------------------730

8. Prevalence of Shin Splint amongst Rugby Players of Pakistan (a cross sectional study)

Asmara Hussain------------------------------------------------------------------------------------------------------------------------------------------------734


Asim Shehzad--------------------------------------------------------------------------------------------------------------------------------------------------737

10. Correlation: Fibroblast Growth Factor 23 & Metabolism of Vitamin D in Patients of Long-standing Kidney Disease

Faisal Ramzan--------------------------------------------------------------------------------------------------------------------------------------------------741

11. Incidence of Adverse Drug Reactions to Methotrexate in Patients with Rheumatoid Arthritis

Muhammad Meraj-------------------------------------------------------------------------------------------------------------------------------------------------745

12. To Compare the Effect of Cyclizine, Prochlorperazine & Ondansetron in inhibiting Postoperative Nausea & Vomiting following Laparoscopic Cholecystectomy

Faisal Ramzan--------------------------------------------------------------------------------------------------------------------------------------------------749

13. Role of Ultrasound in the Assessment of Ovarian Size in Pre & Post-menopausal Women in Pakistani Population

Anum Majeed-----------------------------------------------------------------------------------------------------------------------------------------------------753
14. Frequency of Hyperbilirubinemia in acute Appendicitis
   Abdul Rauf

15. Prevalence & Risk Factor for Postpartum Depression in Women at Sir Ganga Ram Hospital Lahore
   Eman Fatima

16. Outcome of use of High Quality Chamomile Extract on Sleep Disorders Occurring after Menopause
   Kirran Iqbal

17. Prevalence of Neck Pain in Computer Users at Fatima Memorial Hospital, Lahore
   Komal Ishaq

18. Comparison between Harmonic Scalpel vs Bipolar Diathermy for Hemorrhoidectomy
   Muhammad Fawad

19. If Hyperuricemia is a threat for Gout & Myocardial Infarction
   Muhammad Siyar

OPHTHALMIC SECTION - ORIGINAL ARTICLES

20. Prevalence of Ocular TB amongst Patients Suffering from Pulmonary Tuberculosis
   Sana Rafaqat

21. Incidence of Thyroid Dysfunction & its Co-relation with Diabetic Retinopathy
   Naila Obaid

22. Decrease in Sleep Quality In High Myopic Children. (A cross sectional study at Rahmet Hospital, Lahore)
   Sehar Nadeem

23. Association of Vitamin D with Myopia in Adults at University of Lahore Teaching Hospital
   Qurat-ul-Ain

24. Prevalence of Dry Eyes in Diabetic Patients at Rehmat Hospital, Lahore
   Maida Ahmed

25. Effect on Intraocular Pressure of Preoperative Sub-tenon Injection of 5-Fluorouracil in Chronic Open-angle Glaucoma
   Khalid Mahmood

26. Easy and Effective Treatment for Chronic Dacryocystitis in Geriatric Patients.
   M. Arshad Mahmood

27. Efficacy of Topical 0.05% Cyclosporine Eye Drops in Children with Severe Vernal Kerato-conjunctivitis
   Maria Sultan

28. Prevalence of Presbyopia amongst Smokers
   Maida Ahmed

29. Assessment of Inter-pupillary Distance Amongst Age group of 15-75 years Visiting Eye OPD at Hayatabad Medical Complex, Peshawar
   Saifullah

OPHTHALMIC NOTE BOOK

30. History of Ophthalmology
   Prof. M Yasin Khan Durrani
Glucoma is second to cataract amongst visual disabilities and it is a major cause of worldwide irreversible blindness. According to an authentic estimation there will be 5.9 million people with open angle Glaucoma and 5.3 million with angle closed glaucoma by 2020. Hence, it is extremely important to improve diagnosis and therapeutic approach to glaucoma. There are one million nerve fibers originating from the retinal ganglion cells (RGC) which leave the eye ball through the meshwork of lamina cribrosa to form the optic nerve.

In glaucoma there is an orderly destruction of nerve fibers from periphery to center (and not randomly) which is the foundation of perimetry. Now the whole mystery surrounds the orderly destruction of these nerve fibers. Many researchers have postulated various theories for the last 150 years regarding the pathogenesis of Glaucoma vis a vis cupping of the disc. In fact, this is the crucial and important feature of orderly destruction of nerve fibers which cannot be ignored and be kept in sight otherwise any paradigm will be a redundant hypothesis. Recently, Prof. Marianne Shahsuvaryan Ph.D., D.Sc., from Armenia, an exponent in the field of Glaucoma has convincingly propounded it to be a multifactorial and progressively neuro-degenerative disorder resulting in the death of axons of ganglion cells and lateral geniculate nuclei in the visual cortex resulting in optic atrophy, but the focal point of destruction of orderly nerve fibers still remains shrouded.

Dr. Hasnain Sikander FRCS., (a Nashtarian), a promising Pakistani researcher and a fellow from UK, who has spent his life time in searching the truth, has finally unveiled this mystery through his paradigm on scientific grounds. According to him, the cupping of the disc is a herniation of scleral canal - a mechanical problem due to biological effect of raised IOP and sinking of the disc stretches the nerve fibers resulting in chronic ischemia and severance of nerve fibers at the scleral edge, which explains the orderly destruction of nerve fibers. In fact, Glaucoma is not an optic disc neuropathy, but an optic disc axotomy. Medicine is a subject which is constantly undergoing a proliferative change especially in the field of Ophthalmology. Dr. Sikander has lucidly explained his paradigm, which the readers will find it very convincing in his book “Optometry—an Open access”. We are happy to know that scientists have readily accepted this paradigm and he deserves our heartfelt commendations for unveiling this mystery. We recommend this book to the budding ophthalmologists and practicing glaucoma specialists to accept his innovative paradigm with open heart.

---

**Editorial**

**CUPPING OF THE DISC – CURRENT CONCEPT**

Prof. M. Yasin Khan Durrani.,
FRCOphth(Lond)
Chief Editor,
Ophthalmology Update,
Islamabad, Pakistan.
www.ophthalmologyupdate.com

---

Ophthalmology update welcomes the participating delgates on 39th Karopth, Karachi.
Educational Environment: Student Perception as per DREEM Inventory.

Mashhood-uz-Zafar Farooq, FCP$^1$, Shama Mashhood, JMHPE$^2$, Homaira Iqbal Khan M. Phil (Anatomy)$^3$ and Prof. Arshad Shaikh FCP$^4$ Ms. Maria Khan.

ABSTRACT

Objective: To identify the strength and weaknesses in educational environment of the institute as perceived by the students.

Method: This cross sectional study was conducted at Karachi Medical and Dental College Karachi during February 2017 to September 2017. Medical students from third to final year were included in the study. Dundee Ready Educational Environment Measure (DREEM) inventory was used. Analysis was done through the software Statistical Package for Social Sciences (SPSS) version 20.0.

Results: A total of 530 completed responses were received from 567 students with a response rate of 93.47%. Male and female students accounted for 36 (6.8%) and 494 (93.2%) respectively. The overall average DREEM score was 115 ± 24.3. Sub-scale scores for Students Perceptions of Learning, Students Perceptions of Teachers, Students' Academic Self Perception, Students Perceptions of Teaching and Perceptions of atmosphere were 28.6 ± 6.2, 26.0 ± 5.0, 19.5 ± 4.5, 25.9 ± 5.5, 15.0 ± 3.1 respectively. Significant association was found between gender and Perceptions of Learning, Perceptions of Teaching and Perceptions of atmosphere, the female students scoring higher than male students.

Conclusion: Educational environment was found to be more positive than negative by the medical students.

Keywords: DREEM inventory, Medical students, Educational environment.

INTRODUCTION:

Medical education is undergoing tremendous changes in terms of teaching and learning. The focus of medical education has now become more student centered. Educational environment is given due consideration as it is considered to be the key aspect of medical curriculum$^1$. Students perceive the institution environment differently and their perception of educational climate is given special consideration$^2$. Quality educational environment ensures effective learning$^3$. Similarly academic success, high ambition and behavior of students correlate positively with environment$^4$-$^6$. Physical surroundings, social, psychological and cultural issues are part of educational environment$^7$. The quality of the educational environment is determinant of effective educational program and its success$^8$. Quality of teaching and learning is enhanced through creation of a proper educational environment which plays vital role in professional development of future doctors. The Dundee Ready Education Environment Measure (DREEM) has been designed to measure the educational environment specifically for medical and other health professions$^9$. The findings help the institutes to modify and improve their curricula$^{10-12}$. No such study was done in our institute. Therefore it was decided to conduct a study in order to find the quality of educational environment of our institute as perceived by our students.

Analysis of educational environment identifies the pertinent issues and regular monitoring of educational environment helps in resolving the problem areas and ensures better students’ satisfaction.

MATERIAL AND METHODS:

This cross sectional study was conducted at Karachi Medical & Dental College (KMDc), Karachi from February 2017 to September 2017. All students from third to final year were included in the study. Prior ethical approval was taken from the Scientific and Ethical Committee of KMDc.

A proforma was designed that consisted of

1Assistant Professor Department of Ophthalmology, Karachi Medical & Dental College & Abbasi Shaheed Hospital, Karachi$^1$
2Assistant Professor Department of Medical Education, Karachi Medical & Dental College, Karachi$^2$
3Associate Professor, Anatomy, Kabir Medical College, Peshawar$^3$
4Head Department of Ophthalmology Abbasi Medical & Dental College, Abbasi Shaheed & Spencer Eye Hospitals, Karachi$^4$
5Final Year MBBS student, Karachi Medical and Dental College, Karachi.

Correspondence Dr. Mashhood-uz-Zafar Farooq, Department of Ophthalmology Abbasi Shaheed Hospital, Karachi, Tel: +9221992860400 Cell # 03351316074 E.Mail=drmasmashhood@yahoo.com House # B-35, Sector 11-C-1, Adam Town, North Karachi, Karachi.

Received: Feb’2018 Accepted: March’2018
two sections. Section I contained information regarding Age, Gender and Year of study. Section II consisted of the DREEM inventory. The 50 item DREEM inventory comprises of 5 sub-scales; Students Perception of Learning (SPL)-12 items; maximum score is 48, Students Perception of Teachers (SPT)-11items; maximum score is 44, Students Academic Self Perception (SASP)-8 items; maximum score is 32, Students Perception of Atmosphere (SPA)-12 items; maximum score is 48 and Students Social Self Perception (SSSP)-7 item; maximum score is 28. The subscale items are randomly placed in the instrument.

Each item is followed by a response ranging from Strongly agree, Agree, Unsure, Disagree and Strongly disagree. Score for responses is from 4-0 with 4= Strongly agree, 3= Agree, 2= Unsure, 1= Disagree and 0= Strongly disagree. For 9 negative items (4, 8, 9, 17, 25, 35, 39, 48 and 50), reverse scoring is used i.e. 0= Strongly agree, 1= Agree, 2= Unsure, 3= Disagree and 4= Strongly disagree.

The total score of all sub scales is 200. Scores of each sub scale is interpreted against standard guidelines13. The result of each item is interpreted as positive (Strength) if the mean score is 3 and above while the result is interpreted negative (Weakness) for mean score less than 3. The mean score between 2 and 3 is considered somewhat positive that require enhancement. The interpretation for overall DREEM score of 0-50 is very poor, 51-100 Plenty of Problems, 101-150 More Positive than Negative and 151-200 Excellent14. The questionnaire was given to all students from third year to final year who were present in the class after their lecture. The questionnaire was administered to a total of 567 students. Completed questionnaire were returned by 530 students. The remaining questionnaires were either not returned or were incomplete and therefore not included in further study. The students were briefed about the study. Information sheet was also provided to all participants to explain the purpose of the study, process of data collection and anonymity of participants. The students were asked to respond to score of each item which they feel appropriate.

Data analysis was done through the software Statistical Package for Social Sciences (SPSS) version 20.0. All continuous variables were presented as mean ± standard deviation. The coding of questionnaire was used through DREEM inventory. For comparison of gender with DREEM score independent sample t test was used. P-value ≤ 0.05 considered to be statistically significant.

RESULTS:
A total of 567 proforma were distributed among the students out of which 530 were received with complete responses. Response rate was found to be 93.47%. The mean age of the participants was 21.76 years (SD±1.03), ranging from 19 to 25 years. Male and female students accounted for 36 (6.8%) and 494 (93.2%) of the responding sample respectively. Students of 3rd year 152 (28.7%), 4th year 203 (38.3%) and 5th year were 175 (33.0%). The overall average score for students’ perceptions of the educational environment and sub-scales is presented in Table 1.

Table 1: DREEM domain scores of participants

<table>
<thead>
<tr>
<th>Domain</th>
<th>Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students Perceptions of Learning (Max = 48)</td>
<td>28.6 ± 6.2</td>
</tr>
<tr>
<td>Students Perceptions of Teachers (Max = 44)</td>
<td>26.0 ± 5.0</td>
</tr>
<tr>
<td>Students’ Academic Self Perceptions (Max = 32)</td>
<td>19.5 ± 4.5</td>
</tr>
<tr>
<td>Students Perceptions of Atmosphere (Max = 48)</td>
<td>25.9 ± 5.5</td>
</tr>
<tr>
<td>Students Social Self Perceptions (Max = 28)</td>
<td>15.0 ± 3.1</td>
</tr>
<tr>
<td>Total DREEM score (Max = 200)</td>
<td>115 ± 24.3</td>
</tr>
</tbody>
</table>

In SPL sub-scale, the mean score is viewed positive. All 12 items scored between 2 and 3. The SPT sub-scale is viewed positive as score between 2 and 3 was found in 8 items. Score greater than 3 was found in only one item. Two items scoring less than 2, item 8 (The teachers ridicule the students) and item 9 (The teachers are authoritarian) are identified as area to be resolved. The SASP sub-scale is viewed positive. Score between 2 & 3 were observed in 7 items. Scoring greater than 3 is not seen in any item. Scoring less than 2 was found in only one item (I am able to memorize all I need) that require remedial measure. The SPA sub-scale is viewed positive. Score between 2 and 3 were observed in eight items. Scoring greater than 3 was not found in any item. Scoring less than 2 was seen in four items. Item 11 (The atmosphere is relaxed during the clinical teaching), item 12 (This school is well time-tabled), item 17 (Cheating is a problem in this school) and item 35 (I find the experience disappointing) require attention. The SSSP sub-scale is viewed positive. Item scoring greater than 3 was found in one item. Items between 2 & 3 were observed in 2 items. Items scoring less than 2 were seen in 4 items. Item 3 (There is a good support system for students who get stressed), item 4 (I am too tired to enjoy this course), item 14 (I am rarely bored on this course) and item 28 (I seldom feel lonely) require remedy. There was a significant association found between gender and Perceptions of Learning, Perceptions of Teaching and Perceptions of atmosphere, the female students scoring higher than male students. However no significant association found between gender and student academic self-perception and social self-perceptions.

Table 2: Comparison of DREEM domain score for Gender

<table>
<thead>
<tr>
<th>DREEM SUB SCALE</th>
<th>GENDER</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Perceptions of Teaching</td>
<td>Male</td>
<td>24.33</td>
<td>6.47</td>
<td>0.034</td>
</tr>
<tr>
<td>(SPT)</td>
<td>Female</td>
<td>26.16</td>
<td>4.87</td>
<td></td>
</tr>
<tr>
<td>Student Perception of Learning</td>
<td>Male</td>
<td>23.92</td>
<td>5.60</td>
<td>0.000</td>
</tr>
<tr>
<td>(SPL)</td>
<td>Female</td>
<td>28.94</td>
<td>6.14</td>
<td></td>
</tr>
<tr>
<td>Student Perception of Atmosphere</td>
<td>Male</td>
<td>22.94</td>
<td>5.53</td>
<td>0.001</td>
</tr>
<tr>
<td>(SPA)</td>
<td>Female</td>
<td>26.14</td>
<td>5.55</td>
<td></td>
</tr>
</tbody>
</table>
Educational Environment: Student Perception as per DREEM Inventory.

<table>
<thead>
<tr>
<th>Student Academic self-perception (SASP)</th>
<th>Male</th>
<th>18.58</th>
<th>3.17</th>
<th>0.207</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>19.57</td>
<td>4.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Social Self perception (SSSP)</td>
<td>Male</td>
<td>15.11</td>
<td>3.58</td>
<td>0.874</td>
</tr>
<tr>
<td>Female</td>
<td>15.02</td>
<td>3.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION:

Study by Miles S et al. describes DREEM to be the most suitable validated instrument for evaluation of the educational environment of health professions. The DREEM was developed by an international Delphi panel in 1997. Other tools like Medical Education Environment Measure (MEEM), Postgraduate Hospital Educational Environment Measure (PHEEM), Surgical Theatre Educational Environment Measure (STEEM) and Anaesthetic Theatre Educational Environment Measure (ATEEM) have also been designed for measuring the educational environment.

The validity and reliability of DREEM inventory has resulted in its wide use internationally as well as locally. DREEM is used for different purposes. Besides identifying strength and weaknesses of institution, it has also been used for comparison between students of different years and gender and to compare the performance of different institutes. Use of DREEM is not limited to medicine. It is also used in other allied medical subjects like physiotherapy, nursing, dentistry, veterinary and chiropractic. Assessment of educational environment is very important as it plays a vital role in students' learning. Educational environment is everything within a medical school including teachers, teaching, class room, library, students' behavior etc. Curriculum is considered as an essential part of the educational environment.

The overall DREEM score of our study 115 is more positive than negative. The result is consistent with other studies showing scores of 105 by Imran N et al, 114.4 by Jawaid M et al, 126 by Rehman R et al conducted in Pakistan. Internationally similar results of 117.6 in Ankara University, 109.9 in Trinidad, 108 in Sri Lanka, 107.44 in India and 106 in Iranian university are reported in studies. Our study has demonstrated significant difference between average DREEM score of male and female students. Higher score is demonstrated by female students which are similar to the results of study conducted by Imran N et al in Pakistan, Makhdoom NM in Saudi Arabia and Brown T et al in Australia.

Results of the sub-scale score in our study show most positive responses in the domain of SPL, SPT and SPA. The sub-scale score of SASP and SSSP are viewed more positive than negative. Individual items were also analyzed. Item numbers 8,9,11,12,14,17,27,28,34,35 scored less than 2 and require attention. Incorporation of active learning strategies, communication skills, group work, problem solving, critical thinking and constructive feedback will ensure improved learning and more students’ satisfaction. There is a need to review teaching, learning, assessment and establishing a good mentoring, academic and mental support system for students. Staff development courses will strengthen teaching and teachers performance. Adherence to time table will ensure appropriate use of time. Teaching ethics and professionalism through role modeling helps in creating a culture of integrity.

Different scores of DREEM inventory of institutions indicates that many strengths and weaknesses are experienced by the students. However, DREEM score is largely influenced by curriculum. DREEM score more than 120 is demonstrated in institutions having modern education system involving critical thinking and problem solving. The studies conducted by Shankar PR demonstrated improvement in overall DREEM score after adoption of modern integrated curriculum. Our institute has shifted from traditional to integrated curriculum that will further improve the educational environment.

CONCLUSION:

Educational environment of our institute is more positive than negative. Analyzing the educational environment helps identify the pertinent issues related to academic integrity. Regular monitoring of educational environment helps in resolving the problem areas and ensures better students’ satisfaction and improvement in the institution.

Authors’ contributions: Dr. Mashhood-uz-Zafar Farooq and Dr. Shama Mashhood conceived the study, Dr. Mashhood-uz-Zafar Farooq and Dr. Shama Mashhood were involved in literature search, data analysis, interpretation of the result and writing first and final draft of the manuscript. Prof. Arshad Shaikh supervised the study and review of the manuscript. Ms. Maria Khan contributed in data collection. All contributed to final version of manuscript.

Acknowledgment: We are thankful to Mr. Muhammad Faisal Fahim, Statistician, Al-Ibrahim Eye Hospital, for helping in data analysis.

Source of Support: Nil Conflict of Interest: None.

REFERENCES:
8. Al-Rukban MO, Khalil MS, Al-Zalabani A. Learning environment in medical schools adopting different educational strategies. Educ Res


36. Makhdoom NM. Assessment of the quality educational climate during undergraduate clinical teaching years in the college of medicine, Taibah University. Journal of Taibah University Medical Sciences. 2009;4:42-52.


Frequency of Iatrogenic Ulnar Nerve Injury in Displaced Supracondylar Fracture, treated with Closed Reduction and Percutaneous Pinning.

Inam ullah Khan FCPS¹, Yousaf Gul FCPS², Aimal Sattar FCPS³, Abdus Saboor FCPS⁴

Department of Trauma and Orthopaedics, Ayub Teaching Hospital, Abbotabad.

ABSTRACT

Purpose: To assess the frequency of iatrogenic ulnar nerve injury in displaced supracondylar fractures treated with closed reduction and percutaneous pinning. It is a descriptive case series.

Methods and Materials: 116 patients of displaced supracondylar fracture were reviewed over a period of six months for iatrogenic ulnar nerve injury.

Results: 11 out of 116 patients treated, showed signs and symptoms of iatrogenic ulnar nerve injury. All of them resolved completely.

Conclusion: Iatrogenic ulnar nerve injury associated with percutaneous pinning in displaced supracondylar fracture is self-resolving.

Key words: iatrogenic ulnar nerve injuries, Gartland type II and type III supracondylar humeral fractures, closed reduction and percutaneous pinning

INTRODUCTION

Supracondylar fracture of distal humerus is the most common elbow fracture in children¹⁻⁴. It usually occurs during a fall onto an outstretched hand and is associated with considerable morbidity, including neurovascular complications, mal-union, myositis ossificans, and compartment syndrome ². These fractures are seen in the first decade of life and reach a peak at around the age of 8 years¹,⁵,⁶. The distal fragment is displaced posteriorly in more than 95% of cases (extension type) and anteriorly in less than 5% (flexion type)¹,⁶.

 Completely displaced supracondylar fracture of the distal humerus is a difficult injury to treat⁵,⁷ There has been an argument concerning the ideal method of treatment of displaced supracondylar humeral fractures¹. Because of the difficulty in maintaining an adequate reduction with cast immobilization, stabilization of the reduced fractures with pins is preferred⁵,⁸. In this fracture the anatomical reduction is always required because malunion with cubitus varus does not remodel with growth⁵.

The recommended method of treatment for displaced (Gartland type II and type III) extension type Supracondylar fractures of the humerus in children is closed reduction and percutaneous pin fixation¹,³ various methods have been reported for percutaneous pin fixation. Iatrogenic ulnar nerve injury was found up to 15%¹⁹ of the children treated with crossed pin fixation for displaced supracondylar fracture.

Iatrogenic ulnar nerve injury associated with percutaneous pinning in displaced supracondylar fracture is self-resolving.

MATERIALS & METHODS

This descriptive case study was conducted in the orthopaedic department of Ayub Teaching Hospital,
Frequency of Iatrogenic Ulnar Nerve Injury in Displaced Supracondylar Fracture, treated with Closed Reduction and Percutaneous Pinning.

Abbottabad, spanning over a period of six months from ________ to _________. After getting approved by hospital ethical committee, patients of both genders between the age of four and twelve years fulfilling the inclusion criteria of unilateral fracture (gartland type II and III, extension type) who presented with in seventy two hours after injury were included in the study. Patients presenting later than 72 hours with a fracture which was either displaced, associated with another injury in the same limb or had an open fracture were excluded from the study. The study was explained to the patients and they were worked up with a detailed history and clinical examination followed by true AP and true lateral view of the involved joint. They were assured regarding the confidentiality and expertise used for particular procedure and were educated for an anticipated better outcome. Surgery was subjected to medial and lateral crossed K-wire fixation and neurological examination was done. Reduction and fixation was confirmed by radiograph, and the patients were discharged on the 1st or 2nd postoperative day. All patient were followed up at orthopedic out-patient department at interval of 3 weeks. k-wires were removed at 3rd weeks after sign of radiographic union. Ulnar nerve was examined for both sensory and motor loss at 3rd week by comparing with normal side

Out of 116 patients analyzed 72(62%) were males and 44(38%) females. 75(65%) patients were in age range 4-7 years and 41(35%) patients were in age range 8-12 years. Mean age was 6 years with SD of 2.25. Type of fracture was analyzed to be type II fracture in 67(58%) patients and type III fracture in 49(42%) patients. Iatrogenic ulnar nerve injury happened to 12(10%) patient while 104(90%) patients didn’t have iatrogenic ulnar nerve injury. At 6 weeks follow up 2% patients showed signs of iatrogenic nerve injury while 98% patients were devoid of any evidence of iatrogenic nerve injury.

**TABLE NO 1. Type of fracture (n=116)**

<table>
<thead>
<tr>
<th>TYPE OF FRACTURE</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type II</td>
<td>67</td>
<td>58%</td>
</tr>
<tr>
<td>Type III</td>
<td>49</td>
<td>42%</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td>100%</td>
</tr>
</tbody>
</table>

**TABLE NO 2. Frequency of iatrogenic ulnar nerve injury (n=116)**

<table>
<thead>
<tr>
<th>IATROGENIC ULNAR NERVE INJURY</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>12</td>
<td>10%</td>
</tr>
<tr>
<td>No</td>
<td>104</td>
<td>90%</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td>100%</td>
</tr>
</tbody>
</table>

**TABLE NO 3. Iatrogenic ulnar nerve injury after 6 weeks follow up (n=116)**

<table>
<thead>
<tr>
<th>After 6 weeks follow up</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>No</td>
<td>114</td>
<td>98%</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td>100%</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Supracondylar fractures of humerus are the most common fractures around the elbow in children. Aggressive and appropriate treatment is advised to avoid serious complications. There exists controversy regarding the optimal treatment for displaced supracondylar fracture (Gartland type II & type III). Various treatment methods have been described for displaced supracondylar fractures of humerus in children. Parikh et al. recommended closed reduction and casting for treatment of extension type II supracondylar fractures. Li et al. described a mini invasive technique using mosquito forceps for reduction of severely displaced supracondylar fractures.
The ulnar nerve is rarely injured as a result of supracondylar humerus fractures, but it is the nerve most commonly injured after percutaneous pinning. Ulnar nerve injury results in numbness which involves the little finger and the ulnar half of the ring finger. Sensory disturbance can be evaluated with the use of tests of threshold sensibility (monofilament testing). Changes in sensory conduction are more sensitive indicators of nerve injury and correlate more directly with findings on physical examination.

In our series we found 10% iatrogenic ulnar nerve injuries which were comparable to different studies in literature. Although there is debate about the relative merits of crossed (medial-lateral) versus lateral pinning of the fracture, it is widely accepted that medial pin can damage the ulnar nerve either during insertion or with the elbow movement after insertion or by constricting the cubital tunnel. The use of a medial pin was associated with ulnar nerve injury in 4% of patients in whom the pin was applied without hyperflexion of the elbow and in 15% of patients in whom the pin was applied with the elbow hyperflexed. Solbogean et al. calculated that one iatrogenic ulnar nerve injury occurred in every 28 cases treated by cross pinning while in our study one iatrogenic ulnar nerve occurred in every 27 cases treated by percutaneous pinning and 98% patients had complete return of nerve function. Both pin direction and elbow positioning during insertion may alter the incidence of this complication.

Iatrogenic ulnar nerve injuries usually resolve, but there have been several reports of permanent iatrogenic ulnar nerve injuries. The risk of iatrogenic ulnar nerve injury may be reduced by either stimulating the nerve or by inserting the medial pin through a small incision. The lateral pin should be placed first, the elbow should then be extended, the medial pin should be placed without hyperflexion of the elbow and the procedure should be done when swelling in the elbow has subsided. The limitations of this study are lack of randomization regarding the pinning technique, as it was left to the operating surgeon to decide. The number of patients and relatively short follow up period further weakens this study. Nevertheless this study reinforces the conclusions of other authors regarding the use of lateral pinning technique in displaced supracondylar fractures of humerus in children.

CONCLUSION

Our study with its limitations further strengthen the current statistics (2%) of iatrogenic nerve injury in patients treated with crossed K wire.

REFERENCES

Outcome of Optical Internal Urethrotomy in Acquired Urethral Strictures (A Prospective Study)

Muhammad Alam FCPS (Gen. Surg), Prof. Aminul Haq FCPS(Urology), Yousaf Jan FCPS(Gen. Surg)

ABSTRACT
Background: Urethral stricture disease has always been a challenge to urologists, so this article highly focuses on optical internal urethrotomy as a further advancement in management of acquired urethral strictures.

Methods: This study was conducted at Urology Department, Lady Reading Hospital Peshawar from February 2010 to November 2011. All male patients in the age group 16-80 years with urethral strictures were included in the study. Patients below the age of 16 years and with neurogenic bladder, enlarged prostate, bladder stones and meatal stenosis were excluded. All patients were investigated with standardized protocol. Optical internal urethrotomy was done in all patients. Follow-up was done at 3, 6 and 12 months interval. The success of the procedure was evaluated by grading the patients response as good, improved and total failure.

Results: A total of 116 patients in the age group 16-80 years were included of which the mean age was 49 years. The most common presentation was lower urinary tract symptoms in 63 patients (54.31%), followed by urinary retention in 43 patients (37.06%) and obstructive uropathy in 10 patients (8.6%). Trauma as a whole was the sole cause in 81 of the patients (69.82%). Bulbar urethra was the most common site for stricture in 52 patients (44.82%). In the first follow up, 25 patients while in second follow up 53 patients and in the final follow up, 76 patients (74.50%) were free of symptoms. Fourteen patients were lost to follow up.

Conclusion: Optical internal urethrotomy is a safe and minimally invasive procedure in expert hand with low morbidity for the working class people.

Key Words: Optical Urethrotomy, Lower Urinary Tract Symptoms (LUTS), Retrograde Urethrography, Transvesical Prostatectomy (TVP), Tranurethral resection of Prostate(TURP).

INTRODUCTION
The treatment of urethral stricture is one of the oldest problems faced by urologist and the history dates back to ancient Greeks, Egyptians and the management of urethral stricture was available in writing.1 Before discovery of antibiotics, gonococcal infection was the most common cause but now trauma both direct and indirect has been the commonest cause.2,3 Blind urethral dilatation was used as a mode of treatment previously but is now mentioned only to be condemned as it is associated with a high complication rate like bleeding, sepsis, periurethral abscess, false passages and extravasations of urine. In 1964 Helmstein4 advocated the use of urethroscopy before and after urethrotomy to enable the stricture to be accurately localized and checked for a satisfactory incision. However, later in 1974, Sachase5 popularized the optical internal urethrotomy under direct vision and since then used as mainstay of treatment in many urological departments. Good voiding results can be obtained with optical urethrotomy independent of etiology in up to 80% of patients and the cure rate with repeated internal urethrotomies is up to 50-70%.6 The complication rate of internal urethrotomy is lower than dilatation, the option of open urethroplasty is reduced by 60%.7 The complications are hemorrhage, false passage, breaking of knife, impotence, epididymitis and extravasation of urine.8 It can be performed as outpatient procedure under local anesthesia.

The objective of this study was to assess the role of optical internal urethrotomy and to evaluate the symptomatic improvement and efficacy in treatment of this rising problem in urology.

Internal Optical Urethrotomy is safer as first line treatment in urethral strictures, independent of the cause. The overall success rate of internal optical urethrotomy is above 74%. Moreover, Internal Optical Urethrotomy has lower morbidity rate in our patients.
MATERIAL AND METHODS
This study was conducted in urology department Lady Reading Hospital from February 2010 up to November 2011. A total of 116 patients were included in the study. One hundred and sixteen male patients were selected from patients presenting to urology department with history of urethral stricture regardless of age and etiology of stricture. All patients having neurogenic bladder, enlarged prostate, bladder stone or meatal stricture were excluded. Similarly patients under the age of 16 years were also excluded from the study due to non availability of pediatric urethrotome.

Patients with voiding difficulty were assessed using clinical history and examination data along with abdominal and urethral ultrasound, ascending urethrogram, urethroscopy, urinary flow measurements, urine culture and sensitivity and assessment of renal parameters. A diagnosis of urethral stricture was made in 116 patients. Optical internal urethrotomy was performed in all patients regardless of age, etiology or location of stricture using Sachse cold knife optical urethrotome with telescope. All the procedures were done under general anesthesia. A 4 Fr ureteric catheter or guide wire was first passed to guide the blade for accurate cutting across the stricture. The incision was placed at 12 o clock position cutting through the entire fibrous tissue until the instrument passed easily. The urethra was calibrated up to 26 Fr followed by passage of 16 gauge bardia catheter and was left in place from 5 to 10 days. Three monthly, 6 months and 01 yr follow up was done with subjective and clinical assessment of the patients.

The results were graded as good when the patient gets recovered without any morbidity, improved when patients recovered with minor morbidity Total failure when the patient presents with recurrence of stricture.

RESULTS
This study was conducted on 116 male patients with urethral stricture, their ages ranged from 16 to 80 years with mean age of 49 years and standard deviation of 16.28+. The most common presenting symptom was LUTS in 63 patients followed by urinary retention in 43 patients and obstructive uropathy in 10 of the patients.

The most common cause of urethral stricture was trauma which involved direct pelvic trauma in 28(24.13%) patients and indirect or iatrogenic injuries amounting to dilatations and catheterization in 15(12.93%) patients and post TVP and TURP strictures in 38 (32.75%) patients as shown in table 1. Infection accounted for 35(30.17%) patients in total. The most common site was bulb urethra in 52(44.82%) patients followed by penile and bulbomembranous each in 21(18.10%) of the patients as shown in table 2.

During the first follow up in 3 months 25 patients showed good response and 19 of the patients showed signs of improvement and 19 of the patients were in to failure group. While at next follow up of 6 months 53 of the patients showed good response with 13 patients improved and an equal 13 patients showed failure or ended with recurrence. At one year follow up 76 of the patients (74.50%) showed good response and 26 patients(25.49%) ended in recurrence while 14 patients were lost to follow up.

Table 1: Causes of Urethral Stricture:

<table>
<thead>
<tr>
<th>Etiology</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma</td>
<td>28</td>
<td>24.13%</td>
</tr>
<tr>
<td>Catheterization / Dilatation</td>
<td>15</td>
<td>12.93%</td>
</tr>
<tr>
<td>TURP/TVP</td>
<td>38</td>
<td>32.75%</td>
</tr>
<tr>
<td>Infection</td>
<td>35</td>
<td>30.17%</td>
</tr>
</tbody>
</table>

Table 2: Sites of Urethral Stricture

<table>
<thead>
<tr>
<th>Site of stricture</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulbar Urethra</td>
<td>52</td>
<td>44.82%</td>
</tr>
<tr>
<td>Penile Urethra</td>
<td>21</td>
<td>18.10%</td>
</tr>
<tr>
<td>Bulbomembranous Urethra</td>
<td>21</td>
<td>18.10%</td>
</tr>
<tr>
<td>Membranous urethra</td>
<td>12</td>
<td>10.34%</td>
</tr>
<tr>
<td>Blind stricture urethra</td>
<td>10</td>
<td>8.62%</td>
</tr>
</tbody>
</table>

Table 3: Comparative Analysis with other studies

<table>
<thead>
<tr>
<th>Series</th>
<th>Number of Patients</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present study</td>
<td>102</td>
<td>82%</td>
</tr>
<tr>
<td>Khan TA et al 2000 (Local Study in the Same Department)</td>
<td>105</td>
<td>75%</td>
</tr>
<tr>
<td>Dogra &amp; Nabi 2002 (International Study)</td>
<td>61</td>
<td>82%</td>
</tr>
<tr>
<td>Bashir A et al 2004 (National Study)</td>
<td>70</td>
<td>61%</td>
</tr>
</tbody>
</table>

DISCUSSION
In the past gonococcal urethritis was one of the common causes of urethral stricture. But now trauma has surpassed it as the major cause of urethral stricture. Urethral dilation is the oldest and simplest treatment of urethral stricture and remained gold standard for many centuries, urethral dilatation is still used as an acceptable treatment of urethral stricture. In 1974 introduction of movable scalpel urethrotome brought revolution in management of urethral stricture.
Internal optical urethrotomy is now considered as the gold standard in management of urethral stricture because it is a safe procedure and the complications of open surgery can be reduced up to 60%. Optical internal urethrotomy has a success rate of 80% and cure rate of 50-70% in expert hands, other alternative treatments can be considered for anterior urethral stricture only after failure of optical urethrotomy.

In our study we reviewed 116 male patients with urethral stricture and assessed the role of optical internal urethrotomy. The traumatic etiology was the leading cause which included both direct causes and iatrogenic causes which in itself consists of catheterization and instrumentation and post operative cases of TVP and TURP. Of these patients in which direct trauma accounted for 28 of the patients (24.13%) and in indirect causes catheterization in 15 (12.93%), TVP and TURP in 38 patients (32.75%) respectively which is consistent with other studies done in Pakistan. Rasool M et al in 2001 reported 66.66% of urethral stricture due to trauma. A similar study was done by Mohanty and Kachroo in 1988 reported 67% cases due to trauma. The high incidence in Pakistan and India is due to road traffic accidents and inadequate medical facilities. Smith et al in 1986 reported a 51.8% of iatrogenic strictures while in our study it was 53%. In contrast to our study chelton et al in 1983 reported 11.5% traumatic stricture. This may be because of low number of road traffic accidents in West while early higher presentation in our study was because of road traffic accidents. Regarding site of stricture 52 patients (44.82%) of the patients had stricture in bulbar urethra while Ali MN et al in 2001 reported 70-80% of the stricture in bulbar urethra which is consistent with our study.

Nielsen in 1984 reported better results when length of the stricture was less than 1 cm. Pansadaro in 1984 reported 11% poor results when stricture was less than 1 cm. On comparing the outcome of the procedure within a minimum duration of one year the results were quite comparable with published data of Khan TA et al in 2003 a study conducted in the same department with outcome of 75% and another study by Dogra and Nabi in 2002 with an outcome of 82% and a third study by Bashir A et al in 2004 with an outcome of 62% as shown in table 3.

CONCLUSION

From our study in 116 patients we conclude that internal optical urethrotomy is the safe and first line treatment in urethral strictures independent of the cause. The overall success rate of internal optical urethrotomy is above 74%, also internal optical urethrotomy has a low morbidity rate in our patients.

REFERENCES

Comparison Between Stapled & Open Hemorrhoidectomy

Sayad Adil Shah MBBS¹, Muhammad Shah FCPS², Shaukat Hussain MBBS³, Yousaf Jan FCPS⁴

ABSTRACT

Background: Haemorrhoids are defined as dilated internal venous plexus with a swollen, displaced anal cushion. It is thought to be one of the most commonly spread human disease ranking at top among diseases of the rectum and large intestine.

Objective: To compare the efficacy of stapled with open hemorrhoidectomy in the treatment for 3rd and 4th degree hemorrhoids.

Material and Methods: This randomized controlled trial was conducted in Department of Surgery, Hayatabad Medical Complex, Peshawar from January 2016 to June 2017. In this study a total of 180 (90 in each group) patients were observed. The patients were randomly allocated in two groups by lottery method. Patients in group A were subjected to stapled hemorrhoidectomy and patients in group B were subjected to open hemorrhoidectomy. Post surgery, all the patients were advised standard post surgical medication which was included analgesics and sitz bath and was kept strictly uniform in both groups. All the patients in either group were followed up at the end of one month after treatment.

Results: Our study shows that in stapled hemorrhoidectomy mean age was 42 years with SD ± 6.4 while in open hemorrhoidectomy mean age was 43.7 years with SD ± 6.08. In stapled hemorrhoidectomy 66% patients were male and 34% patients were female while in open hemorrhoidectomy 68% patients were male and 32% patients were female. More over stapled hemorrhoidectomy was effective in 89% patients while open hemorrhoidectomy was effective in 65 (72%) patients.

Conclusion: Our study concludes that stapled hemorrhoidectomy is more effective than open hemorrhoidectomy in the treatment of 3rd and 4th degree hemorrhoids.

Key Words: Efficacy, stapled, open hemorrhoidectomy.

INTRODUCTION

Haemorrhoids are defined as dilated internal venous plexus with a swollen, displaced anal cushion. It is thought to be one of the most commonly spread human disease ranking at top among diseases of the rectum and large intestine. Haemorrhoids commonly present with bright red bleeding per rectum, mucosal prolapsed and pruritis ani. Pain is usually not a feature of haemorrhoids unless there has been thrombosis or strangulation of the haemorrhoids which possibly can end up gangrene.

Haemorrhoids are classified into four grades on the basis of degree of prolapse. First degree piles confine internally with bleeding. Second degree piles prolapsed with defecation, but reduce spontaneously, while third degree haemorrhoids do not reduce spontaneously but to be reduced manually. Fourth degree hemorrhoids are permanently prolapsed and cannot be reduced.

The stapled hemorrhoidectomy is more effective than open hemorrhoidectomy in the treatment of 3rd and 4th degree hemorrhoids, in terms of absence of bleeding per rectum, no pain and no prolapse.

Management of hemorrhoids starts with conservative approach which includes diet modifications, life style changes and hydrotherapy and this requires a higher degree of patient compliance to be effective. When conservative management is ineffective other treatment options like injection sclera therapy, rubber band ligation, cryosurgery, infrared photoagulation, milligan-morgan, stapled hemorrhoidectomy and LASAR technique can be employed. All of the above mentioned options can be performed as an outpatient procedure. If conservative measures fail the patient is referred for surgery.

Among the surgical options for haemorrhoids the open technique is globally accepted and preferred by many surgeons. A study comparing the open technique versus a modified closed (semi-open) hemorrhoidectomy showed that such modification was associated with faster healing and fewer postoperative complications. Generally, complications following
Comparison Between Stapled & Open Hemorrhoidectomy

Conventional hemorrhoidectomy procedures include urinary retention (2-36%), bleeding (0.03-6%), anal stenosis (0-6%), infection (0.5-5%), and incontinence (2-12%).

Stapled hemorrhoidectomy (SH) was introduced in 1998 as a gentle new technique for treating advanced hemorrhoidal disease. Unlike conventional surgical techniques, this procedure did not aim to remove but to reposition the prolapsed hemorrhoidal tissue. Although some SH-related complications have been reported, its advantages, such as shorter operating time, less postoperative pain, and a quicker return to normal activity have been confirmed by several controlled studies. However, recent reviews note a higher rate of recurrence with SH than with conventional methods in short-term follow-up.

In one study, the pain scores during the first ten days evaluated by VAS were significantly lower in the SH group (2.5; range 2-5) than in the open hemorrhoidectomy group (6.8; range 3-9). In another study, 2.29% of patients complained about bleeding per rectum and 2.75% complained of pain in the SH group while 2.4% of patients complained about bleeding per rectum and 12% complained about pain after open hemorrhoidectomy.

In our country hemorrhoids is a commonly faced disease. Many management techniques are practiced depending upon the facility in question and the degree of hemorrhoids. Currently we have literature and guidelines for the best surgical treatment option for 3rd and 4th degree hemorrhoids but in our country many surgeons prefer technique of their choice. If according to our research SH is found to be either equally or more effective than open hemorrhoidectomy, our results will be shared with the local masses. The purpose of this study was to compare the efficacy of stapled with open hemorrhoidectomy in the treatment for 3rd and 4th degree hemorrhoids.

Operational definitions: Third degree hemorrhoid are dilated anal cushions which prolapse and needs manual reduction based on history and clinical examination. Fourth degree hemorrhoids: Dilated anal cushions which prolapse cannot be manually reduced. The efficacy was determined in terms of absence of prolapse, pain and bleeding per rectum at the end of one month of treatment. Prolapse when Internal hemorrhoids that has descended below the pectinate line and protruded outside the anal canal. It is detected by asking the patient to strain and the hemorrhoid was prolapsed, which was detected on naked eye examination. Pain was measured on visual analogue scale and a score of equal to or less than 3 was considered significant.

Bleeding per rectum: Patient complaining of fresh bleeding per rectum irrespective of amount, frequency and defeation as detected on history.

MATERIAL AND METHODS

This randomized controlled trial was conducted in Department of Surgery, Hayatabad Medical Complex, Peshawar from January 2016 to June 2017 after taking permission from ethical committee. In this study a total of 180 (90 in each group) patients were observed. The patients were randomly allocated in two groups by lottery method. Patients in group A were subjected to stapled hemorrhoidectomy and patients in group B were subjected to open hemorrhoidectomy after informed written consent.

Inclusion criteria: All the patients in age 20-60 years, both genders with 3rd and 4th degree hemorrhoids.

Exclusion criteria: Patient with history of bleeding disorder, colorectal carcinoma, ulcerative colitis, patients with chronic obstructive pulmonary disease, chronic constipation, bladder outlet, the above mentioned conditions are confounders and if included was introduce bias in the study results. After approval of our study, patients with 3rd and 4th degree hemorrhoids were selected from the outpatient setting and admitted in surgical ward of the hospital for further workup.

Written informed consent was obtained after initial assessment of symptoms based on history and clinical examination including digital rectal and proctoscopic examination; this includes explanation of the procedure itself as well as post-procedural pain and complications like bleeding, infection, sepsis and recurrence. After inclusion, the patients were randomly allocated in two groups by lottery method. Patients in group A were subjected to stapled hemorrhoidectomy and patients in group B were subjected to open hemorrhoidectomy. All the patients were subjected to their treatments according to their respective groups by the general surgeon.

All the patients were advised standard postsurgical medication which included analgesics; sitz bath and were kept strictly uniform in both groups. They were followed up at the end of one month after treatment to check the effectiveness of the procedure in terms of absence of bleeding per rectum, no pain and no prolapse. All the detail information was recorded in a specially designed proforma. Confounders and bias were controlled by strictly following exclusion criteria.

The data was analyzed in SPSS. Mean and standard deviation were computed for numerical variables like age. Frequencies and percentages were computed for categorical variables like gender and efficacy. Efficacy was compared in both the groups using chi square test while keeping p value ≤ 0.05 as significant. Effectiveness in both the groups was stratified among age, gender and grade of hemorrhoid to see the effect of modifications, results were presented as tables.

RESULTS

This study was conducted at Department of Surgery, Hayatabad Medical Complex Peshawar in which a total of 180 (90 in each group) patients were observed to compare the efficacy of stapled with open hemorrhoidectomy in the treatment for 3rd and 4th degree hemorrhoids and the results were analyzed as.

Age distribution among two groups was analyzed as in group A (stapled hemorrhoidectomy) 9(10%) patients were in age range 20-30 years, 27(30%) patients were in age range 31-40 years, 30(33%) patients...
Comparison Between Stapled & Open Hemorrhoidectomy

were in age range 41-50 years, 24(27%) patients were in age range 51-60 years. Mean age was 42 years with SD ± 6.4. Where as in group B (open hemorrhoidectomy) 10(11%) patients were in age range 20-30 years, 27(30%) patients were in age range 31-40 years, 28(31%) patients were in age range 41-50 years, 25 (28%) patients were in age range 51-60 years. Mean age was 43.7 years with SD ± 6.08.

Gender distribution among two groups was analyzed as in group A (stapled hemorrhoidectomy) 59 (66%) patients were male and 31(34%) patients were female. Where as in group B (open hemorrhoidectomy) 61(68%) patients were male and 29(32%) patients were female.

Degree of haemorrhoids among two groups was analyzed as in group A (stapled hemorrhoidectomy) 58(64%) patients had grade 3 haemorrhoids and 32(36%) patients were had grade 4 haemorrhoids. Where as in group B (open hemorrhoidectomy) 59(66%) patients had grade 3 haemorrhoids and 31(34%) patients were had grade 4 haemorrhoids.

Efficacy among two groups was analyzed as group A (stapled hemorrhoidectomy) was effective in 80(89%) patients. Where as group B (open hemorrhoidectomy) was effective in 65(72%) patients. Stratification of efficacy with age and gender is given in (table No 1,2)

<table>
<thead>
<tr>
<th>AGE</th>
<th>EFFICACY</th>
<th>GROUP A n=90</th>
<th>GROUP B n=90</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30 years</td>
<td>Effective</td>
<td>8</td>
<td>8</td>
<td>0.5957</td>
</tr>
<tr>
<td></td>
<td>Not effective</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-40 years</td>
<td>Effective</td>
<td>24</td>
<td>19</td>
<td>0.0911</td>
</tr>
<tr>
<td></td>
<td>Not effective</td>
<td>3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41-50 years</td>
<td>Effective</td>
<td>27</td>
<td>20</td>
<td>0.0714</td>
</tr>
<tr>
<td></td>
<td>Not effective</td>
<td>3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-60 years</td>
<td>Effective</td>
<td>21</td>
<td>18</td>
<td>0.1784</td>
</tr>
<tr>
<td></td>
<td>Not effective</td>
<td>3</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GENDER</th>
<th>EFFICACY</th>
<th>GROUP A n=90</th>
<th>GROUP B n=90</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Effective</td>
<td>52</td>
<td>44</td>
<td>0.0284</td>
</tr>
<tr>
<td></td>
<td>Not effective</td>
<td>7</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>61</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

Hemorrhoids are common entity in the general population and in clinical practice. Many anorectal problems, i.e fissures, fistulae, abscesses, or irritation and itching (pruritus ani) have similar symptoms and are incorrectly referred to as haemorrhoids. Although many people have hemorrhoids, not all experience symptoms. Commonest symptom of internal hemorrhoids is bright red blood covering the stool, on toilet paper, in the toilet bowl or a red streak on one side of hard stool. However, an internal hemorrhoid may protrude through the anus outside the body, become irritated and painful. Constipation, excessive straining, rubbing, or cleaning around the anus may cause irritation with bleeding and/or itching, which may produce a vicious cycle of symptoms. Draining mucus can cause itching. No sex predilection is known, although men are more likely to seek treatment. The prevalence of hemorrhoids increases with age, with a peak in persons aged 45-65 years. Our study shows that in group A (stapled hemorrhoidectomy) mean age was 42 years with SD ± 6.4 while in group B (open hemorrhoidectomy) mean age was 43.7 years with SD ± 6.08. In group A (stapled hemorrhoidectomy) 66% patients were male and 34% patients were female while in group B (open hemorrhoidectomy) 68% patients were male and 32% patients were female. Moreover stapled hemorrhoidectomy was effective in 65(72%) patients. Stratification of efficacy with age and gender is given in (table No 1,2)

Similar results were observed in another study conducted by Baliga K et al in which a total of 60 patients in two equal groups were studied. Mean age of the two groups was similar. Majority of the patients (more than 80%) were between 30 to 50 years of age. The male:female ratio was 6.5:1 for the stapled group and 9:1 for the open group. Mean operating time, time to passage of first bowel movement and time to return to normal activity for the two groups. The mean operating time for open group was significantly higher than the stapled group (P=0.0001). Similarly, the open group had a significantly late return of bowel activity at 37.23 hours compared to 18.37 hours for the stapled group. This was also statistically significant. As regards to return to normal activity, the SH group of patients returned to normal daily activity after a mean of 5.6±1.16 compared to 7.77±1.22 days for the OH group. This difference was significant (P = 0.0001). Overall, the SH group had an incidence of complications of 20% compared to 30% for the OH group. This difference was not significant. In the SH group, the predominant complication was urinary retention seen in 5 patients, and bleeding and urinary retention in one patient. In the OH group, again urinary retention was seen in 5
Comparison Between Stapled & Open Hemorrhoidectomy

patients, bleeding in 2 patients and both in both the groups. Four studies have clearly shown that there was lower incidence of pain in the SH group. Postoperative pain was significantly less for the SH group after postoperative day 1 (day 2, p=0.0001, day 3, p = 0.0001). On the first postoperative day, no statistically significant difference in pain was seen as compared to the open hemorrhoidectomy (day 1, p=0.33). Another study supported this observation in our study. Epidural analgesic requirements have been found to be less in the stapled hemorrhoidectomy group. Significantly, less total pain scores were observed in those undergoing stapled hemorrhoidectomy as opposed to open procedures. The quality of pain was sharp and tearing type in open hemorrhoidectomy while in the stapled group often experience a vague or dull discomfort. However, the placement of the purse string suture too close to the dentate line can result in severe and persistent postoperative pain. The stapled line of >22 mm above the dentate line correlates with a significantly shorter need for postoperative narcotics and earlier return to work. Our policy was to keep the purse string and hence the stapled line at approximately 25 to 40 mm above the dentate line.

The mean operative time was generally shown to be lesser for stapler hemorrhoidectomy than for conventional open surgery. In our study it was seen to be statistically significant (stapled 24.27±4.27 min vs 35.5±5.54 min, P=0.0001). The duration of hospital stay was shorter in the SH group in this study. This also has been well documented in previous studies. However, in the works of Mehigan et al and Hetzer et al there was no significant difference in the hospital stay between the two groups. Similar to our study findings was the earlier return to work for the stapled hemorrhoidectomy patients as compared to the OH group.

CONCLUSION

Our study concludes that stapled hemorrhoidectomy is more effective than open hemorrhoidectomy in the treatment of 3rd and 4th degree hemorrhoids in terms of absence of bleeding per rectum, no pain and no prolapse.

REFERENCE

Functional Outcome of Acute Kidney Injury in Children Reporting in a Teaching Hospital.

Sadaf Rasheed MBBS1 Zoha Haq MBBS2 Mehr Wali Shah MBBS3 Sana Ullah MBBS4

ABSTRACT
Objective: To determine the outcome of acute kidney injury in children at Nishtar Hospital, Multan
Methods: This descriptive cross sectional study was conducted in Pediatrics Department of Nishtar Hospital Multan and Bahawal Victoria Hospital Bahawalpur from September 2016 to June 2017 after obtaining approval from ethical committee of the Hospital. A total of 78 patients with acute kidney injury of any stage aged one to ten years of either gender were included. Patients with congenital kidney anomalies like polycystic kidney disease, renal agenesis and post-operative surgery patients were excluded. All patients were given treatment according to the department protocol and patient requirement and followed for one week at which the final outcome (complete recovery/partial recovery/death) was noted.
Results: In this study, it was observed that 75.7% (n=59) patients completely recovered, 20.5% (n=16) partially recovered while 3.8% (n=3) patients died. (Table. 2). Stages of AKI i.e. I, II and III were observed as 39.8% (n=31), 26.9% (n=21) and 33.3% (n=26) respectively. Association was found between stages of AKI and the outcome.
Conclusion: Acute kidney injury is a serious problem and a great public health concern in children which can result in renal failure and death also. So early diagnosis and timely management should be given in order to prevent its dangerous outcomes.
Key words: Acute kidney injury, children, death. Serum creatinine, urea

INTRODUCTION
Acute and reversible increase in serum creatinine levels is defined as acute kidney injury. It can be associated with decrease urine output in the form of either oliguria or anuria. Clinical manifestation of acute kidney injury ranges from mild kidney injury to complete renal failure1. Now the term acute kidney injury has replaced acute renal failure, reason of this because acute renal failure is used for anuric dialysis dependent state and by the time when this state is recognized, it increases mortality due to delayed in beneficial interventions2.

In pediatrics and adult patients, there is no uniform definition of acute kidney injury. Acute kidney injury has been defined in many different ways and many of these definitions use a change in serum creatinine level. Serum creatinine concentration is a delayed and insensitive measure of decrease renal function following acute kidney injury3,4.

Acute kidney injury is a serious problem and a great public health concern in children which can result in renal failure and death as well. Early diagnosis and timely management is important to prevent mortality.

Different causes of acute renal failure are grouped into three main categories that is prerenal, intrinsic renal and post-renal. Prerenal failure is defined as structurally normal kidneys functional response to hypo-perfusion. It is 55% of all cases of acute renal failure. Postrenal failure is due to functional or mechanical obstruction to flow of urine. It is less than 5% of whole cases of acute renal failure. 40% of all cases of acute renal failure are due to structural damage to glomeruli, renal tubules, renal vasculature or interstitium. In most cases of intrinsic acute renal failure, acute tubular necrosis is the main etiology, which is due to prolonged ischemia or toxic injury, which is the main reason that
There are various causes of acute kidney injury according to age, clinical setting and geographical area. In developed world most cases of acute kidney injury result from severe illness in intensive care settings and due to due to hemolytic uremic syndrome. In developing countries, most causes of acute kidney injury are infections related. Gastroenteritis is one of the main cause, which is due to poor sanitation and lack of safe drinking water and other is post-streptococcal glomerulonephritis. Acute kidney injury is one of the main cause of mortality in critically ill children, which depend on many factors such as clinical settings, etiology, availability of dialysis therapy and co-morbidities. Results of one study showed that among 35 children with acute kidney injury, 25 children survived, of which, 18 (72%) children had complete recovery, 7 (28%) children had partial recovery and deaths were 10 (28.57%).

Acute kidney injury due to any etiology can be a concern for a later kidney disease. Acute kidney injury is dangerous in situation when kidneys have not yet grown to adult size or before the complete development of nephrons. As acute kidney injury in pediatric population is increasing in our population and no local statistics were available on the outcome of acute kidney injury in pediatric population. This study would be the first one to determine the outcome of acute kidney injury in children in local population. The results of this study would not only provide the local statistics of the problem but also help the clinicians to take further steps in managing these particular patients in order to improve their outcome.

MATERIALS AND METHODS

This descriptive cross sectional study was conducted in Pediatrics Department of Nishtar Hospital Multan and Bahawal Victoria Hospital from September 2016 to June 2017 after obtaining approval from ethical committee of the Hospital. A total of 78 patients with acute kidney injury of any stage and aging one to ten years of either gender were recruited by non-probability consecutive sampling. Written permission of study was signed by parents of each patient. Exclusion criteria of study were as following: 1) Patients with congenital kidney anomalies like polycystic kidney disease, 2) patients with renal agenesis and 3) patients with post-operative surgery (cardiovascular, abdominal, neurological or orthopedic surgeries). Sample size of study was calculated by reference study done by..., for which confidence interval was taken as 95%, study strength as 80% and taking percentage of partial recovery as 28.0%. After admitting the patients included in study, complete history was recorded. Through clinical examination was conducted to assess the disease as well as the comorbidity. Detailed drug history was also investigated. Each patient’s daily serum creatinine levels were measured from the institutional laboratory and also urine output was noted by measuring the urine output in the urine bag. All patients were given treatment according to the departmental protocol and patient requirement and followed for one week at which the final outcome (complete recovery/partial recovery/death) was noted. Personal information of each patient like age gender, area of living, socioeconomic status, weight and duration of disease was recorded by filling the proforma.

Acute case was diagnosed on the basis of defined criteria of acute kidney injury according to the nelsons text book of pediatrics. Stage 1 is defined as rise in serum creatinine >150% of normal cut off values according to the age and urine output <0.5ml/kg/hr for 8 hours. Stage 2 is defined as rise in serum creatinine >200% of normal cut off values according to the age and urine output <0.5ml/kg/hr for 6 hours. Stage 3 is defined as rise in serum creatinine >300% of normal cut off values according to the age and urine output <0.5ml/kg/hr for 12 hours. Partial recovery in stage 1 was considered when serum creatinine remained 100-150% of normal value and urine output >0.5ml/kg/hr for 12 hours. Partial recovery in stage 2 was defined when serum creatinine level was within normal range and urine output >0.5ml/kg/hr for 12 hours. Partial recovery in stage 3 was considered when serum creatinine remained >200% of normal value and urine output >0.5ml/kg/hr for 12 hours.

Statistical analysis was performed using SPSS version 20.0. Results were presented as mean and standard deviation for age, duration of disease and weight of the patient. Frequency and percentage were calculated for gender, stage of AKI (I/II/III), place of living (rural/urban), socioeconomic status (poor/middle/upper) and outcome (complete recovery/partial recovery/death). Effect modifiers like age, gender, weight, AKI (I/II/III), place of living (rural/urban) and socioeconomic status (poor/middle/upper) were controlled through stratifications. Post-stratification chi square was applied to see their effect on outcome and p-value ≤0.05 was considered as significant.

RESULTS

In this study, a total number of 78 patients were included, both genders. Gender distribution showed that there were more male than female i.e. 52.6% (n=41) and 47.4% (n=37) respectively. The Mean±SD age and weight of the patients was 4.5±1.95 years and 13.01±4.75 kg respectively. There were 59% (n=46) patients lived in rural areas and 41% (n=32) patients lived in urban areas. Socio-economic status of the patients observed as poor, middle and upper 44.9% (n=35), 33.3% (n=26) and 21.8% (n=17) respectively. The differences were not statistically significant of demographic
The main exposure variables of this study was acute kidney injury. In this study, it was observed that 75.7% (n=59) patients completely recovered, 20.5% (n=16) partially recovered while 3.8% (n=3) patients suffered from death. (Table 2). Stages of AKI i.e. I, II and III were observed as 39.8% (n=31), 26.9% (n=21) and 33.3% (n=26) respectively. Association was found between stages of AKI and the outcome. (Table 3).

Table 1: Demographic Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Presence</th>
<th>Test of Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>M=52.6%, F=47.4%</td>
<td>χ²=2.51, p=0.285</td>
</tr>
<tr>
<td>age</td>
<td>4.51±1.95 years</td>
<td>χ²=0.147, p=0.929</td>
</tr>
<tr>
<td>Weight</td>
<td>13.01±4.75 kg</td>
<td>χ²=1.28, p=0.528</td>
</tr>
<tr>
<td>Place of living</td>
<td>Rural=59%, Urban=41%</td>
<td>χ²=1.95, p=0.378</td>
</tr>
<tr>
<td>Socio-economic Status</td>
<td>Poor=44.9%, MIDDLE=33.3%, UPPER=21.8%</td>
<td>χ²=68.28, p=0.000</td>
</tr>
</tbody>
</table>

Table 2: Outcome of acute kidney injury in children

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete recovery</td>
<td>59</td>
<td>75.7</td>
</tr>
<tr>
<td>Partial recovery</td>
<td>16</td>
<td>20.5</td>
</tr>
<tr>
<td>Death</td>
<td>3</td>
<td>3.8</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 3: Association of outcome with respect to stage of AKI

<table>
<thead>
<tr>
<th>Outcome Stages of AKI</th>
<th>Complete Recovery</th>
<th>Partial Recovery</th>
<th>Death</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>31</td>
<td>0</td>
<td>0</td>
<td>31</td>
<td>0.000</td>
</tr>
<tr>
<td>II</td>
<td>21</td>
<td>0</td>
<td>0</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>7</td>
<td>16</td>
<td>3</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>16</td>
<td>3</td>
<td>78</td>
<td></td>
</tr>
</tbody>
</table>

The association between mortality and oliguria was first established by this study in acute kidney injury patients. Beginning and Ending Supportive Therapy for Kidney investigators conducted most inclusive cohort study until now on acute kidney injury patients10. They investigated different etiology of acute kidney injury. Among them septic shock was 47.5%, major surgery 34%, cardiogenic shock 27%, hypovolemia 26% and nephrotoxic agents were 19% responsible for developing acute kidney injury.

Study had shown that total number of deaths due to acute kidney injury is increasing in absolute number and also patients who survived of acute kidney injury and were on renal replacement therapy had poor quality of life10. So this is serious concern and these patients consume greater budget of health system. A study investigated about causes of acute kidney injury. This reported that sepsis was leading cause of acute kidney injury and also was associated with highest number of deaths among other causes. Other factors causing acute kidney injury were hypoxia, hypovolemia due to dehydration, patent ductus arteriosus and renal vein thrombosis11. Vachvanichsanong P et al. conducted a survey and reported that acute renal failure in PICU and hospitalized children had increased about nine fold12. Another cohort study which was done in total 472 pediatric patients, having both newborns and children with more than one-month age, reported that sepsis and hypoxic injury were the main cause of acute kidney injury in both group of patients13.

Study which recruited 102 children with acute kidney injury showed that patients with oliguria were started renal replacement therapy about 23 times higher as compared to their non-oliguric counterparts and also children with acute kidney injury had more PICU stay and mortality as compared to non-acute kidney injury group14. Study conducted on 362 children reported that most common causes of acute kidney injury were sepsis, acute glomerulonephritis and obstructive uropathy. 68.9% children achieved complete recovery, 5.7% children developed chronic kidney disease, 5.1% children were referred to surgery and death percentage was 29.7%17. Results of another study showed that among 103 patients of acute kidney injury, 61% patients achieved complete recovery. Total 16 patients died in PICU while 2 patients progressed into chronic kidney disease18. Study done by Chawla LS et al. showed that acute kidney diseases and chronic kidney diseases were not different entities but they are interconnected 19. Results of another investigation showed that even a small acute change in renal function could result in long term complications in the form of chronic kidney disease, renal failure and even death as well20.

So it is serious problem and need serious attention on international level so that early diagnosis and management of acute kidney injury should be ensured at best possible level. Limitation of this study was its study design, sample size and also it was only done on
CONCLUSION

Acute kidney injury is a serious problem and a great public health concern in children which can result in renal failure and death as well. Early diagnosis and timely management is important to prevent its dangerous outcomes.

Conflict of interest :None. Funding source: None.

REFERENCES

Taboo about Reproductive Health Problems in University of Lahore

Zahid Iqbal MBBS¹; Syed Umair Shah MBBS² Hamza Tahir MBBS³

ABSTRACT:
Objective: To know about awareness level of females about reproductive health in their adolescent age.
Methodology: A cross sectional study was conducted to collect data from the adolescent females studying at university of Lahore located in higher socioeconomic status neighborhoods of Lahore. Purposive sampling technique was used to select the participants. SPSS was used to analyze this data.
Results: The study found scanty knowledge of important reproductive health issues among adolescent females. Because of the social taboo and stigma attached with sex education in Pakistan, girls were unable to get proper information from media and other sources like internet because of their family environment; parents were only one to play an effective role in creating awareness among adolescents, which can be unreliable and exploitative because of illiteracy. This study has identified the need for adequate sexual and reproductive health information among adolescents.
Conclusion: Due to ineffective role played by various agents of socialization, especially parents and teachers, there is less understanding and knowledge among adolescent females about reproductive health issues in order to prepare them for pubertal transition.
Keywords: Puberty, Awareness, Adolescent Females, Urban, Sexual Health, Reproductive

INTRODUCTION:
Youth is defined as the time of transition into adulthood and an important period in a person’s life. During this period new behavior is learned easier than in adulthood [1]. This fact was stressed in the International Conference on Population and Development in 1994 [2]. In this regard, the World Health Organization (WHO) estimates that more than one billion people in the world are between 15-24 years old [3]. Moreover, more than 85% of them live in developing countries. Investment in the health of this age group has played a major role in the development of human communities due to the dual role of women in community health and well-being of future generations as one of the main paths to the achievement of Millennium Development Goals (MDGs) and youth goals [4].

Due to poor socialization of parents, teachers and the society at large there is a lesser understanding and knowledge of reproductive health issues in adolescent females, preparing them for future pubertal transition.

These type of researches are important to give awareness about such issues that are considered taboos in our society. As all of us know that people do not want to even discuss about such issues. Little is known about the reproductive health needs of young people in Pakistan. In addition, the few studies conducted on the knowledge, attitude, beliefs and behavior associated with sexual reproductive health of Pakistani youth have indicated that the level of knowledge of reproductive health is low [5]. It is the responsibility of health researchers to identify the needs for reproductive health promotion and to plan and implement the necessary educational programs that might include prevention of STIs/HIV/AIDS as well as unwanted pregnancies [6].

There is general consensus in the health-care community concern...
Taboo about Reproductive Health Problems in University of Lahore

policies and services aimed specifically at reproductive health for individuals with intellectual disabilities (ID). It is likely that such undertakings would be supported by society as a whole. Previous studies have shown that the sexuality of people with ID has often been stereotyped, with this group typically characterized as being childlike and asexual, invariably leading to a denial of their socio-sexual maturity and need[7] The purpose of this study is to get to know about awareness level of adolescent female about reproductive health.

MATERIAL AND METHOD:
The study was conducted in university of Lahore during July 2017-September2017. Cross sectional study design was used for this purpose. There were 22 departments in university of Lahore. In which 10 department were selected randomly. 1000 students were included in this study. Sample size was determined using a single population proportion formula, with the following assumptions; maximum allowable error (5%); proportion of students having awareness of contraceptive methods (50%); Z statistic = 1.96; design effect of 2 (to compensate the clustering effect introduced as result of using stratified sampling technique); and non-response rate 10%. This gave a total sample size of 1040. However, 38 female students were excluded during analysis because they were married, giving the final sample size of 1000.

Proportional allocation for population size was used to determine the number of study participants in each department and in each grade level. Sections, which were considered as clusters, were selected in each semester level. All female students in the selected sections (clusters) were invited to participate in the study. The outcome variable of the study was awareness on contraceptive methods, and the explanatory variables included were socio-demographic status; educational level of participants’ parents, reproductive health characteristics; media exposure; and reported discussion with peer and parent about sexual and reproductive health issues. In the analysis, categorization of variables was based on previous studies conducted in Saudi Arabia. SPSS version 20 was used for analysis of this study and descriptive data was analyzed in %.

RESULTS:
The result shows that 1000 students were included in this study. The mean age of participants was 10-19 year. Just over three among every four adolescents (75.4%) were in late adolescence. Regarding menstruation, 70% knew about menstruation before menarche. Over 57% reported that it is a monthly cycle where blood flows from vagina for four to five days. Majority 93% responded that mothers were their source of information. Almost three fourth of the respondents, 85% had shared about their menarche to their mothers and 44.3% claimed that they were expectant of menarche while 36.1% (22) were frightened with the experience of menarche. As far as attitude towards menstruation is concerned, more than half of respondents 65% said it was satisfactory, however almost 30% said they were not prepared. In addition to this, one out of every five respondents (20%, responded that it was undesirable, thus showing negative attitudes towards menstruation. Among 61 respondents, almost all 99% suffered from various types of menstrual problems, commonest being dysmenorrhea 85%. Just over the quarter of respondents 30% said problems subsided by maintaining personal hygiene, similar proportion 27% seek health services.

Table:1

<table>
<thead>
<tr>
<th>Perception</th>
<th>%</th>
<th>N (1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is natural to have some stomach cramps during periods</td>
<td>64.5</td>
<td>645</td>
</tr>
<tr>
<td>Periods could be irregular during adolescents</td>
<td>44.5</td>
<td>445</td>
</tr>
<tr>
<td>During periods one can be moody and irritable</td>
<td>83.5</td>
<td>835</td>
</tr>
<tr>
<td>During periods one can do all kind of activities</td>
<td>43.2</td>
<td>432</td>
</tr>
<tr>
<td>During periods breasts can feel pain and heavy in touch</td>
<td>72</td>
<td>720</td>
</tr>
<tr>
<td>One can participate in sports exercise during periods</td>
<td>20</td>
<td>200</td>
</tr>
<tr>
<td>Menstruation occur due to shedding of internal wall of uterus</td>
<td>66</td>
<td>660</td>
</tr>
<tr>
<td>During pregnancy periods do not occur</td>
<td>76</td>
<td>760</td>
</tr>
<tr>
<td>During periods one can eat all kind of food</td>
<td>56</td>
<td>560</td>
</tr>
</tbody>
</table>

Table:2

<table>
<thead>
<tr>
<th>Source of information</th>
<th>%</th>
<th>N (1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television</td>
<td>20</td>
<td>220</td>
</tr>
</tbody>
</table>
Taboo about Reproductive Health Problems in University of Lahore

Radio 0 0
Doctor 55 550
Newspaper 10 120
Parents 96 960
Friends 33 330
Teachers 22 220
Other family members 52 555
Other books or magazines 7 70

The result shows that mostly girls got information about reproductive health from mostly of their mothers and the family.

DISCUSSION:

The result shows that mostly 92% girls got information from their mothers. 90% girls knew that during periods one can be irritable and moody but mostly do not know that whether we could exercise properly during periods or not. This finding is consistent with other studies in Pakistan as well as in other parts of the world. A study conducted in Nigeria showed that adolescents have more knowledge about HIV and AIDS than other STIs. It also revealed that adolescents did not mention the connection between STIs and AIDS.[16]

Findings of a study conducted in a rural area of Pakistan in KPK (2016) by Akmal N showed that adolescents hardly discuss issues related to sexuality with their parents.[17] Another study that was conducted in Saudi Arabia (2015) by Makul D revealed various misconceptions regarding transmission of HIV/AIDS among young girls.[17] Similarly, a study conducted in various areas of Karachi revealed that adolescents in Pakistan have insufficient knowledge about AIDS, its causes and routes of transmission. The study identified friends (25.57%), internet (24.34%) and television (20.78%) as major sources of information about AIDS for adolescents of Pakistan. Very small fraction of participants mentioned parents as source of information.[18]

Our study also indicated that most of the participants had information about pregnancy and virginity but lacked comprehensive knowledge. Young females have insufficient knowledge about pregnancy and usually male adolescents have more knowledge about pregnancy than females. A study conducted in Peshawar on reproductive health awareness among adolescent females revealed that a majority of the participants (88%) demonstrated the need for sex education. Although, they shy to talk about menstruation and believed that virginity was a virtue. This clearly indicates the need for comprehensive sex education programs to give right answers to the queries of adolescent females at right time.[20]

CONCLUSION:

Due to ineffective role played by various agents of socialization, especially parents and teachers, there is shortage of understanding and knowledge among adolescent females about reproductive health issues in order to prepare them for pubertal transition.

REFERENCES:

Infective Endocarditis,

A 27-year-old man presented to the emergency department with abdominal pain and a pulsatile painful lesion on the right hand with 6-weeks history of fever, decreased appetite, night sweats and a weight loss of 12 kg. Physical examination revealed diastolic murmurs, laboratory showed white-cell count of 18,000 per cubic millimeter. CT angiography of the right arm revealed an aneurysm of the ulnar artery.

Supraclavicular flap for Head and Neck Reconstruction: (A Study of Case Series)

Principal Authors: Muhammad Shadman FCPS (Plast Surg), Adeeba Ahmad FCPS (Plast Surg), Waqas Hayat MBBS
Co-authors: Tahmeedullah, FCPS (Plast Surg), Fellowship in Craniofacial Surge 4. S.M. Haider, FCPS (Gen. Surg), FCPS (Plast Surg), Uzma MMBS, PG trainee. Plastic Surgery

ABSTRACT:
Background: There is a growing trend of free flaps for the defects of head and neck region. Free flaps not only require a lot of time, monitoring and expertise, but they are also risky in malnourished patients with multiple co-morbidities. Our aim is to explore the complications of supraclavicular flap in those patients who might not be good candidates for a free flap.

Aim: Our aim is to look at the reliability of supraclavicular flap.

Methods and Materials: This case series was conducted from March 2008- December 2014 at Plastic Surgery Department at Hayatabad Medical Complex, Peshawar.

Results: We did thirty cases of supraclavicular flap for head and neck defects. The common causes were malignancies, vascular malformations and trauma. Mean age of the patients and mean operative time was 45.57±13.5 years and 84.5±19.9 minutes, respectively. In one case there was total flap necrosis. Two patients had distal flap necrosis. Donor site morbidity was present in 13.3% cases.

Conclusion: Supraclavicular flap is a reliable flap in terms of anatomy and low post-operative morbidity. It is easy and quick to do and can be used to cover variety of head and neck defects.

Key Words: Head and Neck reconstruction, pedicled flap, supraclavicular flap, head and neck neoplasms

INTRODUCTION:
Supraclavicular flap, based on the supraclavicular artery was first described by Lamberty (1). The usefulness of this flap was rediscovered by surgeons after Pallua et al. (2) described the flap. Although free flaps are increasingly being used for head and neck reconstruction; local flaps with consistent anatomy and reliability are still some of the important tools. They have the advantage of low morbidity and they have short operative time. Supraclavicular flaps are a good option for a surgeon with little experience with free flaps. They can also save a lot of time in high volume centers and can give comparable results to free flaps (3).

Supraclavicular flap can be used reliably in variety of head and neck cases, specifically in cases of malignancy. Low post-operative complications make it an ideal flap for patients with co-morbidities or patients with malnourishment, in whom a free flap can be a risky endeavor.

Different versions of the supraclavicular flap has been described in the literature. It was initially used as a pedicled flap. Later on it was islanded by Pallua et al. (2) by making a subcutaneous tunnel. The pedicle was de-epithelialized and travelled in the tunnel. The benefit of this approach was that it was a single stage procedure. A free supraclavicular flap has also been described in the literature. (4) Recently some surgeons have used this flap for closure of post-operative pharyngocutaneous and tracheocutaneous fistulas. (5, 6)

The supraclavicular artery is the feeding vessel for this flap. It arises from the transverse cervical artery which is a branch of thyrocervical trunk. (5, 6) The vascular anatomy of the flap varies little in patients. A study by Vinh et al. on the anatomy of the supraclavicular flap showed that supraclavicular artery arose from the
Transverse cervical artery in all cases, however, in 5% of cases, the transverse cervical artery originated from the subclavian artery instead of the thyrocervical trunk.\(^7\)

We felt the need for a flap in the head and neck region which would be easy to work with, had a reliable anatomy, can be done in patients with comorbidities and took less time to operate\(^6\) \(^-\) \(^11\). We used supraclavicular flap in a series of patients to look at the reliability of this flap. In this study we present our experiences with different variants of supraclavicular flap in head and neck reconstruction.

**METHODS AND MATERIALS:**

This is a case series study conducted at Plastic and Reconstructive Unit, Hayatabad Medical Complex, Peshawar, between 2008 to 2014. We used two variants of a pedicled supraclavicular flap. For larger defect and defects near the zygoma, we used a delayed supraclavicular flap. In delayed supraclavicular flap, the flap was completely raised in the first stage. This was followed by a period of three to seven days. In the second stage, the defect was reconstructed with the flap. In patients with small defects of head and neck area or defects which are lower down, we did a single stage procedure. In this variant, the raising of the flap and insetting were done in a single setting.

Supraclavicular flap is based on the supraclavicular artery. It arises from the transverse cervical artery; a branch of thyro-cervical trunk. An uncommon variation in anatomy of the transverse cervical artery is that in some patients it arises from the subclavian artery; a branch of thyrocervical trunk. An uncommon variation in anatomy of the transverse cervical artery is that in some patients it arises from the subclavian artery.\(^7\) The supraclavicular artery arises from the transverse cervical artery in all cases, however, in 5% of cases, the transverse cervical artery originated from the subclavian artery instead of the thyrocervical trunk.\(^7\)

After skin incision, the flap was raised in a sub-fascial plane from distal to proximal. Flap viability is confirmed by looking for bleeding margins of the flap. Hemostasis is secured with the help of a bipolar cautery. In delayed variant, the flap is left in place and insetting is done in the second stage after three to seven days. If the defect is small or is in the neck and lower face, a single stage procedure is done. To inset the flap at the defect site, it is rotated and stay sutures are taken. At this point the distal ends of the flap are checked for viability by giving small cuts. If the blood flow is adequate, the flap insetting is done. If there is inadequate blood flow, the flap is trimmed to the point where adequate blood flow can be achieved. The donor site of the flap was grafted with a 3.5mm split thickness skin graft from the thigh and secured with the tie-over dressing.

**RESULTS:**

Supraclavicular flap was done in 30 cases for head and neck defects in our unit. Mean age of the patients was 45.57±13.5 years. Operating time of the procedure was 84.5±19.9 minutes. Hospital stay and follow-up duration of our patients were 4.7 days and 4.2 months, respectively. Twenty eight (93.3%) of our patients were male. Most common use of this flap was in malignancies and in old patients. Most of these patients were emaciated and malnourished with history of weight loss. In 25 (83.3%) cases, the flap was not islanded while in 3 (10%) cases it was islanded. In remaining two cases a non-islanded flap was used to cover a composite defect. In these patients, the flap was folded to cover the mucosal defect as well as the skin defect in patients after wide local excision for squamous cell carcinoma of the oral cavity. Table 1 gives details about the etiology and the location of the defect.

Overall, the rate of post-operative complications was low. Two cases had distal necrosis of the flap, while one patient had complete flap necrosis. We grafted the donor site with a split thickness skin graft. Post-operative complications at donor site were present in 13.3% of cases. Table 2 shows the post-operative complications.

Table 1.

<table>
<thead>
<tr>
<th>Etiology</th>
<th>Number of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>malignancy</td>
<td>22</td>
<td>73.3</td>
</tr>
<tr>
<td>vascular malformation</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>trauma</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>defect due to infection</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Total Cases</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Defected Site</th>
<th>Number of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-auricular area</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>defect of oral commisure</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>zygoma</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Total Cases</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

Table 2

<table>
<thead>
<tr>
<th>Post operative Complications</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total flap loss</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Distal Necrosis of the flap</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>Scar Widening</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>Partial loss of graft at donor site</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>Shoulder pain</td>
<td>1</td>
<td>3.3</td>
</tr>
</tbody>
</table>

**DISCUSSION:**

Low rates of complications make the supraclavicular flap a reliable option for head and neck reconstruction. We commonly use this flap for trauma cases and for reconstruction in oncological cases. This flap...
has been described in the literature for many defects of head and neck.\(^{(12-16)}\)

Supraclavicular flap is a thin flap which is easy to harvest. Being thin, this flap gives good appearance in the Head and Neck region. We also used it for introral reconstruction. As it is a fascio-cutaneous flap, there is no associated bulkiness as with the myocutaneous flaps. Supraclavicular flap also shows good color and texture matching in the head and neck region.

Several studies have described supraclavicular flap as a versatile flap owing to its reliable anatomy, ease of procedure, good results and use in variety of situations.\(^{(8-11, 17, 18)}\) We used the flap in oncological cases in trauma patients and in patients who had a failed free flap. Four patients developed post-operative complications. Granzow et al.\(^{(3)}\) studied free flaps and supraclavicular flap for head and neck reconstruction. They found that supraclavicular flap was able to cover relatively larger defects as compared to the free flap.

Supraclavicular flap is not a time consuming procedure. It can be raised quickly as compared to a flap\(^{(19)}\) and can save a lot of time in high volume centers, while giving results which are comparable to a free flap. Hospital stay and wound healing times are also shorter as compared to a free flap.\(^{(3, 19)}\) Free flaps require close monitoring; this is not the case with the supraclavicular flap. This decreases the cost of the procedure dramatically. We had one case of complete flap loss while two patients had distal necrosis of the flap. Kokot et al. has reported similar rates of post-operative complications.\(^{(20)}\)

If a large supraclavicular flap is harvested, it can become difficult to close the donor site primarily. In those cases the donor site will need grafting with a split thickness skin grafting. However, the donor site morbidity is low. The skin grafting is done on the surface of healthy muscle tissue, so graft taken of the donor bed is good. Therefore, the donor site morbidity is low in these patients. It is prudent to graft the area if a surgeon feels it to be difficult to close primarily. If closed primarily, there is a risk of dehiscence. A study reported partial dehiscence in 13.33% of cases.\(^{(21)}\) We grafted the donor site in all our patients. One patient had shoulder pain when she would masticate. The pain was also associated with intake of very hot and very cold food. She was a 63 year old female in whom we used the supraclavicular flap for the inner lining of the oral cavity after the ulcerating buccal mucosa lesion with fungating margins was excised. This was a case of squamous cell carcinoma of the oral cavity. We did not find any shoulder joint dysfunction in our cases. Literature is consistent with our findings however, there is a slight decrease in the range of motion at shoulder joint.\(^{(22)}\)

CONCLUSION:

In our experience the supraclavicular flap can be used reliably in variety of head and neck cases, specifically in cases of malignancy. Low post-operative complications make it an ideal flap for patients with co-morbidities or patients with malnourishment, in whom a free flap can be a risky endeavor.

REFERENCES:


**************************************************
Next Meeting: Academy of Ophthalmology, 2018
in Conjunction with
Pan-American Association of Ophthalmology
October 27-30, 2018, at Chicago (USA)
P.O. Box: 7424,
San Francisco, CA 94120-7424, USA
**************************************************
Prevalence of Shin Splint amongst Rugby Players of Pakistan

Asmara Hussain MBBS, Asim Shehzad MBBS, Muhammad Waqas MBBS, Tayyaba Ayub MS(PH),tOD, BSc (HON) Optomet & Orthop.

ABSTRACT

Background: Shin splints is a common lower leg injury that affects people involved in running sports. Shin Splints most commonly occur in athletes who have sudden increases or changes in their training activity and who participate in high contact court or field sports as well as in gymnasts and particularly ballet dancers.

Objective: To get to know about the prevalence of shin splint among rugby players

Method: A cross sectional study was conducted to get to know about the prevalence of shin splint among rugby players. A structured questionnaire was filled from rugby players about shin splint.

Results: Out of 70 patients Maximum players were not suffering any shin splint symptom like tenderness (75.7%). Edema was absent in most of the players (85.7%). Out of 70 players, 71.4% were not having any physiotherapy treatment is they suffer shin splint ever in their life.

Conclusion: This study concluded that Shin splint was not common among rugby players, also players were doing muscle stretching exercises regularly before and after match that is the major preventive measure from shin splint.

Keywords: prevalence, shin splint, muscle stretching

INTRODUCTION:

Shin splints is a common lower leg injury that affects people involved in running sports. Shin splint is a vague term used widely with a variety of definition. It is an inflammatory condition of the tibia in which micro tears develop in the muscles. Shin splints are common problems among runners specially in beginning runners. Shin splints covers five related lower leg injuries which are tendinitis of lower leg, inflammation of bone covering, stress fractures, nerve irritation or compartment syndrome. Also described as “Excruciating pain in frontal part of leg” pathophysiology of shin splint syndrome remains unclear. Some clinicians argue that the term shin splint applied to any external pain that occur in shin.

The repetitive dorsiflexion and plantar flexion pulls the muscles away from its attachment on the bone causing periositis. In more severe cases, physical examination may find redness, swelling and thickening of periostem/ juxta positional soft tissue. These signs present at the site of stress fracture in which diagnosis is made from clinical assessment. Coaches and trainers usually see the athlete earlier in the clinical course than physicians and, consequently, may be confronted with a different clinical presentation. Lower extremity kinesio taping is found to be effective in medial tibial stress syndrome. Application of kinesio tape decreases the rate of medial loading in MTSS patients and thus help in some extent in the treatment of shin splints. The purpose of this study is to get to know about shin splint prevalence among rugby players.

MATERIALS AND METHODS:

A cross sectional study was conducted among Pakistan national team rugby players. 70 players were included in this study and a non-probability convenient sampling was used. A structured questionnaire was used to collect data. Patient between 15-45 age limit were included in this study. SPSS version 20.00 was used to analyze this data. Descriptive statistics was used in this study to check the prevalence of shin splint among players.

Shin splint is not common amongst rugby players, they do muscle stretching exercises regularly before and after match which is the only way to escape from the use of shin splint.

Asmara Hussain MBBS, Asim Shehzad MBBS, Muhammad Waqas MBBS, Tayyaba Ayub MS(PH),tOD, BSc (HON) Optomet & Orthop.

Correspondence: Dr. Asmara Hussain MBBS, Medical Officer District Hospital Chakwal
Email: drasmara512@gmail.com
RESULTS:
The result shows that 70% of players fall in the category of 21 to 30 years age. Among them most of them (54%) were belong to middle class families.

Table 1: Frequency distribution of associated factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm up</td>
<td>Yes</td>
<td>68</td>
</tr>
<tr>
<td>Cool down</td>
<td>Yes</td>
<td>60</td>
</tr>
<tr>
<td>Stretching before match</td>
<td>Yes</td>
<td>66</td>
</tr>
<tr>
<td>Stretching after match</td>
<td>Yes</td>
<td>48</td>
</tr>
<tr>
<td>Any previous history of shin</td>
<td>Yes</td>
<td>20</td>
</tr>
<tr>
<td>splints</td>
<td>No</td>
<td>50</td>
</tr>
<tr>
<td>Any history of fall or any</td>
<td>Yes</td>
<td>31</td>
</tr>
<tr>
<td>trauma to the lower leg</td>
<td>No</td>
<td>39</td>
</tr>
</tbody>
</table>

The table 1 shows that Most of the players were used to perform warm up (97.1%) and cool down (85.7%) maneuver. Maximum players were used to stretch themselves before (94.3%) and after (68.6%) match. 71.4% players did not have any significant history of shin splints. 55.7% did not have any history of trauma.

Table 2: Frequency distribution of associated factors who can cause shin splint.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Times that injury occur to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the lower leg</td>
<td>Once</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Twice</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>More than twice</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>2</td>
</tr>
<tr>
<td>For how long he is playing</td>
<td>Less than 2 years</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>2 to 4 years</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>More than 4 years</td>
<td>27</td>
</tr>
<tr>
<td>Playing position</td>
<td>Forwards</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Backs</td>
<td>31</td>
</tr>
</tbody>
</table>

The table 2 shows that 44.3% were those who had injury to their legs for one time, 21.4% players had injury for two times, 31.4% players had injury more than twice and only 2.9% were those players who had no injury before. Most of the players, 35.7% were playing for more than 4 years, 35.7% were playing for 2-4 years and 25.7% were playing for less than 2 years. 55.7% players were having forward playing position and 44.3% were having backward playing position.

GRAPH 1:

Symptoms of shin splint:
The graph 1 shows that mostly players did not feel ant tenderness and oedema signs after or at the time of running.

The result also shows that 50% players did not take any physiotherapy treatment.

DISCUSSION:
The present cross sectional study was conducted among rugby players of different organizations and clubs in Pakistan. We came to know that the prevalence of shin splints in the respective contact sports. The total 70 players of different clubs and organizations were selected and a structured Performa for case collection were filled out. 20(29%). Out of 70 players had previous injury of shin splints, having pain at the front of lower leg. While 10 (14%) out of 70 players had edema and 17(24%) out of 70 had tenderness at the site that mean shin splint is not common in players.

Ben Yates and Shaun white conducted a study in Canada in 2010 to identify the incidence of medial tibial stress syndrome (MTSS) in a group of naval recruits. One hundred and twenty-four recruits (84 men and 40 women) were followed prospectively. Recruits were monitored during training for development of medial tibial stress syndrome. Forty recruits developed medial tibial stress syndrome, giving an incidence of 35%. A significant relationship existed between gender and medial tibial stress syndrome (P = .012), with female recruits more likely to develop medial tibial stress syndrome than male recruits (53% vs 28%).

Sabeti, khoshraftar and Bizheh conducted a research to study the relationship between Shin splints, anthropometric characteristics and some indicators of body composition. They did descriptive - comparative study, in which thirty-five students of physical education were evaluated in two groups. Anthropometric and body composition characteristic of both groups were studied under identical conditions. Independent t-test was performed in order to analyze the data. No significant differences were found in anthropometric parameters.
Sharma et al. conducted a research study in US in 2015 to examine the effect of a gait-retraining program on medial tibial stress syndrome incidence during a 26-wk basic military training regimen. A total of 450 British Army recruits volunteered. Participants classified as at risk of developing medial tibial stress syndrome (n = 166) were randomly allocated to an intervention (n = 83) or control (n = 83) group. The intervention involved supervised gait retraining, including exercises to increase neuromuscular control and flexibility and biofeedback enabling internalization of the foot balance variable. Data were modeled in a survival analysis using Cox regression. On the basis of results, they conclude that the intervention was effective in reducing incidence of medial tibial stress syndrome in an at-risk military sample.¹⁰

CONCLUSION:

This study concluded that prevalence of shin splint is low among players and very few players were suffering from symptoms of shin splint like tenderness of lower leg and oedema. Also mostly players were doing daily muscle stretching exercises that was a preventive measure from shin splint. Also players were not taking physiotherapy treatment regularly.

REFERENCES.
15. (Griebert et al., 2014) The medial tibial syndrome: exercise ischemia in the medial fascial compartment 53:712–715
Knowledge of Concussion & Reporting Behavior amongst Football Players of a Local Club in Lahore, Pakistan.

Asim Shehzad MBBS,1, Muhammad Waqas MBBS2, Asmara Hussain MBBS3, Tayyaba Ayub MS (Public Health), BSc (Hons) Optometry & Ortho4

ABSTRACT

Background: Football is the most popular sport in the world with over 270 million players worldwide and four million players in only England. The occurrence of soccer injuries in grown-up male players is assessed to be somewhere around 7.6 and 35 for each 1000 hours of play. Of all injuries in soccer, head injuries make up between 4-22% with concussion contributing around 11%.

Objective: To determine the frequency of concussion and associated awareness among football players.

Methods: A cross sectional study was conducted in Model Town, Lahore football club. Sample size was calculated using software winpepi version 11.15. A modified RoCKAS-ST questionnaire was used to assess knowledge toward concussions.

Results: The CKI mean was 31.4737± 2.5334 (potential range 27.00-38.00 whereas 31.5 is the average point) the result shows that as according to players perception players were not losing intelligence after sustaining concussions (84.2%, 32/38), 2) and Concussions will affect their long term-health and well-being (76.3%, 29/38).Symptoms of a concussion can last several weeks (73.7%, 28/38) as according to players.

Conclusion: Concussion knowledge is relatively lacking in Football players and there is need to promote an awareness program.

Key words: Concussion, Awareness, Attitude, Football players, RoCK

INTRODUCTION

Football is the most popular sport in the world.1 Participation rate is equal without any discrimination of socioeconomic groups in England.2 Number of male players is more as compare to the female players. It is very popular game in England and almost half of the adults are or have been regular football player.3 The Pakistan national football team represents Pakistan association football in FIFA-authorized events and is controlled by the Pakistan Football Federation, the governing body for football in Pakistan. Pakistan’s home ground is Punjab Stadium, Lahore. Pakistan became a member of FIFA in 1948 joining the Asian Football Confederation, its national team debuted in 1950.4 which is currently placed at 197th position in the world. The game could not develop as smoothly as it should have.5 Pakistan did not participate regularly in International competitions. The standard achieved in the early 1950s could not be maintained because of lack of organization and set up on modern lines.5 The occurrence of soccer injuries in grown-up male players is assessed to be somewhere around 7.6 and 35 for each 1000 hours of play.10 Of all injuries in soccer, head injuries make up between 4-22% with concussion contributing around 11%.11 Players who played football for 10 years having 50% chance of having sustained a concussion.12

Concussion knowledge was moderate amongst participants and there is a need to promote awareness regarding concussion injuries among football players.

There is possibility of more than one concussion and the symptoms may be severe and slow recovery.13 Estimated 5.3 million Americans living with TBI-related disability face numerous challenges in their efforts to return to a full and productive life.14 Concussion is a mild traumatic brain injury that can occur in both contact and non-contact sports but mostly occur in contact sports. Injury usually occurs when multilobular brain rapidly strikes with the skull. These rapid movements can disturb the structure and metabolism of the brain cells.15 A concussion is defined as a traumatic brain injury that changes the brain functions. Effects are normally transitory how-
ever can incorporate migraines and issues with focus memory, equalization and coordination. The larger part of concussions doesn’t bring about lost consciousness. If a player is associated with having a concussion, he/she should be expelled from the field of play and legitimately assessed by a restorative expert experienced in concussion finding and treatment. Headache is the most common symptom of the concussion. Other symptoms are nausea, vomiting, dizziness, lack of motor coordination, balance problems, light sensitivity blurred vision and double vision. The brain is encompassed by cerebrospinal liquid, which shields it from light injury. More serious effects, or the powerful forces with speed, may not be consumed by this pad. Midbrain and diencephalon are the most common affected parts of the brain. Other affected areas may be the brain stem, the fornix, the corpus callosum, the temporal lobe, and the frontal lobe. So the purpose of this study is to get to now whether the players have knowledge about what is concussion and why it happens.

MATERIAL AND METHOD:
It was a cross sectional study at Model Town Football Club Lahore. Confidence level = 95% Acceptable difference = 1 Assumed S.D. = 3 Concussion knowledge (CKI) Required sample size = 38. It was calculated using software winpepi version: 11.15. This software used following formula to calculate sample size for mean. If the assumed standard deviation (s) is entered, the sample size (n) required for estimating a mean is n = s2.12 / d2 (Zar’s formula 7.7) Where t = the two-tailed critical value of Student’s t with n-1 degrees of freedom d = half the width of the desired confidence interval. Sampling technique used in this study was purposive sampling technique. Participants were asked to fill the modified RoCKAS-ST before and after their practice session.

RESULTS:
The results showed that mean ± S.D height of the players was 1.75±0.083 with minimum value of 1.60 and maximum value of 1.98. The mean ±S.D weight of players was 73.95kg±11.498 with minimum value of 55.0 and maximum value of 102.0. The mean ±S.D age of the players was 24.47±3.54 with minimum value of 19.03 and maximum value of 34.0. The mean ±S.D BMI was 24.06±3.54 with minimum value of 19.03 and maximum value of 35.50.

Primary position of players showed that 26%(n=1) were left winger, 28.9%(n=11) were defender, 26.3%(n=10) were forward, 13.2%(n=5) were goal keeper, 5.3%(n=2) were left winger, 21.1%(n=8) were midfielder, 26%(n=1) were right winger. The result shows that out of 38 players 32(84%) players knew about what is concussion. In order to be diagnosed with concussion one has to be knocked out. The result showed that 68% players considered it false as to be diagnosed with concussion you have to knocked out. The result also showed that as according to 31.6% (n=12) players concussion occur when direct hit to back side of head occur. While 68%(n=26) players considered this perception false.

Being knocked un-conscious always causes permanent damage to brain. The result showed that according to 26% players being knocked unconscious always cause permanent damage to brain while 73% players consider it false. The result showed that as according to perception of 73.7% players the effect of concussion can last for 2-3 weeks, while 26.3% players said that it effects last for 2-3 days. The result shows that 42% players said that second concussion can help to get rid of 1st concussion effects. While 58% players considered it false. Players who affect most from concussion: The result shows that 15% players said that defensive back players mostly suffer from concussion. 20% players said that left wing players mostly suffer from this condition. 5% did not know about this. 63% players said that yes it can cause emotional disruption. 365 considered it false. 33% players said that after concussion players forget about themselves only. 53% said that players forget about each and every thing of last 8-hours. 10% do not know about this. If you experience 1st concussion you will become less intelligent.

Table 1. After concussion (CT SCAN, MRI, X-RAY) Can be helpful to show visible damage effect (bruise, blood clot)

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>True</td>
<td>22</td>
<td>57.9</td>
<td>57.9</td>
<td>57.9</td>
</tr>
<tr>
<td>False</td>
<td>15</td>
<td>42.1</td>
<td>42.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The result showed that 58% players tell that yes after this these tests can be helpful for assessment and for further treatment while 42% considered it wrong. Physical activity effect on concussion; 78% players said that physical activity improve patient health and make them stronger and reduce the chance of severe effect of concussion rest of patients considered it false.

Table 2. There is rarely a risk of long term health and wellbeing after multiple concussion

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>True</td>
<td>23</td>
<td>60.5</td>
<td>60.5</td>
<td>60.5</td>
</tr>
<tr>
<td>False</td>
<td>15</td>
<td>39.5</td>
<td>39.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION:
Concussion is a mild traumatic brain injury that can occur in both contact and non-contact sports but mostly occur in contact sports. Injury usually occurs when multi-
lobular brain rapidly strikes with the skull. These rapid movements can disturb the structure and metabolism of the brain cells.

The mean± S.D height of the players was 1.75±0.83 with minimum value of 1.60 and maximum value of 1.98. The mean ±S.D weight of players was 73.95kg±11.498 with minimum value of 55.0 and maximum value of 102.0. The mean ±S.D age of the players was 24.47±4.31 with minimum value of 18.0 and maximum value of 34.0. The mean ±S.D BMI was 24.06±3.54 with minimum value of 19.03 and maximum value of 35.50. Within the CKI, the most common knowledge questions correctly identified were:

1) players were not losing intelligence after sustaining concussions (84.2%, 32/38),

2) Symptoms of a concussion can last several weeks (73.7%, 28/38) and

3) Concussion will affect their long term-health and well-being (76.3%, 29/38). 73.7% (n=22) considered it true that there is a possible risk of death if a second concussion occurs before the first one has healed while 42.1% (n=16) considered it false.

47.4% (n=18) considered it true that running everyday does little to improve cardiovascular health while 52.7% (n=20) considered it false. 55.3% (n=21) considered it true that people who had one concussions are more likely to have another concussion while 44.7% (n=17) considered it false. 94.7% (n=36) considered it true that cleared and athlete’s feel grip the playing surface while 5.3% (n=2) considered it false. 31.6% (n=12) considered it true that In order to be diagnosed with a concussion, you have to be knocked out while 68.4% (n=26) considered it false. 31.6% (n=12) considered it true that a concussion can only occur if there is a direct hit to the head while 68.4% (n=26) considered it false. 26.3% (n=10) considered it true that being knocked unconscious always causes permanent damage to the brain while 73.7% (n=28) considered it false.

73.7% (n=28) considered it true that symptoms of a concussion can last several weeks while 26.3% (n=10) considered it false. 42.1% (n=16) considered it true that sometimes a second concussion can help a person remember things that were forgotten after the first while 57.9% (n=22) considered it false. 94.7% (n=36) considered it true that weightlifting helps to tone and/or build muscle while 5.3% (n=2) considered it false. 57.9% (n=22) considered it true that after a concussion occurs, brain imaging (CAT scan, MRI, X-ray etc.) typically shows visible physical damage (bruise, blood clot) to the brain while 42.1% (n=16) considered it false. 15.8% (n=6) considered it true that if you receive one concussion and you have never had a concussion before, you will become less intelligent while 84.2% (n=32) considered it false. 55.3% (n=21) considered it true that after 10 days, symptoms of a concussion are usually completely gone while 44.7% (n=17) considered it false. 39.5% (n=15) considered it true that after a concussion, people can forget who they are and not recognize others but be perfect in every other way while 60.5% (n=23) considered it false.

As according to previous study There is possibility of more than one concussion and the symptoms may be severe and slow recovery. Another study that was conducted on concussion tell us that Estimated 5.3 million Americans living with TBI-related disability face numerous challenges in their efforts to return to a full and productive life. According to previous study the definition of concussion is that it is a mild traumatic brain injury that can occur in both contact and non-contact sports but mostly occur in contact sports. Injury usually occurs when multi-lobular brain rapidly strikes with the skull. These rapid movements can disturb the structure and metabolism of the brain cells.

**CONCLUSION:**

The results showed that the concussion knowledge was moderate among participants and there is a need to promote awareness regarding concussion among football players.

**REFERENCES:**

1. Williams J. Concussion Knowledge and Attitudes in English Football (Soccer), 2013.
9. FIFA, AFC committed to promoting soccer in Pakistan: PFF president, THE NATION.
Knowledge of Concussion & Reporting Behavior amongst Football Players of a Local Club in Lahore, Pakistan.


Minocycline-induced pigmentation
A 70-year-old man presented with a 1-year history of progressive bluish discoloration of the sclerae of both eyes without any ocular discomfort or blurry vision. He used minocycline for more than 15 years for an inflammatory arthritis. Ophthalmologic examination was otherwise normal. D.D., Osteogenesis imperfect, Minocycline-induced pigmentation, Ehler’sdanlos syndrome, Primary acquired melanosis, Conjunctival melanoma. Curtsey: Nejam
Correlation: Fibroblast Growth Factor 23 & Metabolism of Vitamin D in Patients of Long-standing Kidney Disease

Faisal Ramzan MBBS,1 Sumera Batool MBBS2 Fahad Basit MBBS3
Gohar Ali Arshad FCPS4
Ishart Hospital, Multan

ABSTRACT:
Objective: To examine the effects of fibroblast growth factor 23 (FGF-23) and parathyroid hormone on metabolism of vitamin-D in the patients suffering from stage 3A or higher longstanding disease of kidney. It was a cross-sectional observational study in Medical Unit of Nishtar Hospital Multan between January 25, 2018 and February 25, 2018.

Methodology: A total of 40 patients were included in this study. Patients with stage 3A of higher longstanding kidney disease were included. Age, body mass index (BMI), rate of glomerular filtration, serum levels of FGF-23, parathormone, creatinine, phosphate, calcium, 25-hydroxycholecalciferol (25-hydroxyvitamin-D), 1alpha,25-dihydroxyvitamin D3 and Dihydroxy-cholecalciferol (24,25-dihydroxyvitamin-D) of forty patients were noted on a preformed performa by the researcher himself. Means of all the factors were calculated, univariate as well as multivariate analysis of variance of the factors against FGF-23 levels and parathormone level. P-value ≤0.05 was considered of statistical significance for every factor.

Results: On univariate analyses of variance, there was a positive association of FGF-23 with parathyroid hormone levels (p=0.011) as well as Dihydroxy-cholecalciferol level (p=0.021) but the association with other factors was not significant. There was also no significant correlation of parathyroid hormone with any of the other factors.

Conclusion: In this study, we concluded that there is no specific and significant direct effect of FGF-23 on metabolism of vitamin-D but serum levels parathyroid hormone, which is a mediator of vitamin D metabolism, was positively associated with FGF-23 level in circulation.

Keywords: fibroblast growth factor 23 (FGF-23), vitamin D metabolism, longstanding disease of kidney.

INTRODUCTION:
Longstanding disease of kidney affects electrolyte metabolism in the body. The most important of which is the mineral and bone disorder which is a sequel of vascular calcification and renal bone disease. This all results in a detrimental rise in cardiovascular morbidity as well as mortality1-3. In mineral and bone disorder of longstanding disease of kidney, it was hypothesized that phosphate load was the early causal event in most of the abnormalities 4. In patients suffering from longstanding disease of kidney, there occurs a fall in phosphate excretion through the kidneys and this potentiates the influence of phosphate load on raising serum phosphate level5,6.

Fibroblast growth factor 23 (FGF-23) increases in early stages of longstanding kidney disease, even when assessed glomerular filtration rate is more than 60 ml/min/1.73 m2. This increase results phosphaturia and consequently fall of phosphate levels. There is increase in parathyroid hormone level which is also a phosphaturic hormone 5.6. There is strict regulation of serum calcium levels within a strictly narrow range by the parathyroid hormone which increases the calcium levels, even in individuals who do not have longstanding kidney disease 7. This shows the important physiological effect of parathyroid hormone. Thus, it has become important to know whether FGF-23 and/or parathormone play any role in amending serum phosphate and calcium level in the patients suffering from longstanding disease of kidney.

It has already been witnessed that both FGF-23 as well as parathyroid hormone result in phosphaturia but they exhibit opposing effects on metabolism of vitamin D 8-12. Vitamin D transformation from 25-hydroxycholecalciferol to 1alpha,25-dihydroxyvitamin D3(1,25(OH)2-D) is stimulated by the parathormone9,10 but the transformation to Dihydroxy-cholecalciferol (24,25(OH)2-D) is inhibited by parathormone11,12. Whereas, FGF-23 inhibits the vitamin D transformation from 25-hydroxycholecalciferolto 1alpha,25-dihydroxyvitamin D3 but stimulates the transformation of vitamin D from 25-hydroxycholecalciferolto Dihydroxy-cholecalciferol13,14. Measuring the level of all three metabolites of vitamin-D namely 1alpha, 25-dihy-
Correlation: Fibroblast Growth Factor 23 & Metabolism of Vitamin D in Patients of Long-standing Kidney Disease

MATERIAL AND METHODOLOGY:
This cross sectional study was conducted at Department of Medicine, Nishtar Hospital Multan from January 25, 2018 to February 25, 2018 after being approved by the hospital ethical committee. Forty patients who were suffering from stage 3A or higher longstanding kidney disease were included in the study. Study conducted by Nakatani S. et al was taken as reference. Patients receiving steroids, vitamin D supplements, calcium supplements, phosphate binders, estrogen and thyroid hormone replacement, and the patients suffering from diabetes mellitus were excluded from our study. Informed consent on the proper performa was obtained from all the participants.

Routine assays with automated methods were applied to perform the laboratory measurements. New Japanese coefficient for Diet Modification in Renal Disease Study equation, which included the correction factor of 0.739 for women. Serum level was rectified according to the serum albumin concentration. An entirely computerized random-access chemi-luminescence immune-analyzer, CL-JACK System, intra-assay coefficient of variation being 2.7 to 3.4% and the inter-assay coefficient of variation of 1.9 to 6.3% (internal data). There is no cross-reaction with the biologically inactive C-terminal fragment of FGF-23 that accumulates in the circulation of the patients suffering from longstanding disease of kidney. In this assay which makes it superior to C-terminal FGF-23 assay. Second-generation Elecsys PTH IRMA assay was used to measure serum parathyroid hormone level which included both large C-terminal fragment accumulated in the patients suffering from prolonged disease and biologically active parathyroid hormone. In this assay, coefficient of variation was 3.4-5.4% and 4.3-7.1% for intra-assay and inter-assay, respectively. 1alpha,25-dihydroxyvitamin D3 RIA kit was used to measure level of serum 1alpha,25-dihydroxyvitamin D3. Modified HPLC-tandem mass spectrometry procedure having atmospheric pressure chemical ionization was used to measure serum 25-hydroxycholecalciferol as well as Dihydroxy-cholecalciferol. For 25-hydroxycholecalciferol, coefficient of variation was 3.4 to 9.2% and 11.9% for inter-assay and intra-assay; and for Dihydroxy-cholecalciferol, coefficient of variation was 13.1 to 19.3% and 14.7% for inter-assay and intra-assay, respectively.

Age, body mass index (BMI), rate of glomerular filtration, serum levels of FGF-23, parathyroid hormone, creatinine, phosphate, calcium, 25-hydroxycholecalciferol; 1alpha,25-dihydroxyvitamin D3 and Dihydroxy-cholecalciferol were noted on a preformed performa by the researcher himself. Means of all the factors were calculated. Univariate as well as multivariate analysis of variance of the factors against FGF-23 levels and parathyroid hormone level. P-value ≤0.05 was considered statistically significant for every factor.

RESULTS:
Mean age of forty patients having longstanding disease of kidney of stage 3A and higher (National Kidney Foundation) was 61.53±10.49 years; body mass index (BMI) was 25.05±4.88 kg/m²; FGF-23 level was 33.05±12.02 pg/ml; mean parathyroid hormone level was 45.13±21.34 pg/ml; mean glomerular filtration rate was 37.95±5.66 ml/min/1.73 m²; creatinine level in serum was 2.85±1.00 mg/dl; serum calcium concentration was 5.78±1.75 mg/dl; serum phosphate was 4.61±0.58 mg/dl; 25-hydroxycholecalciferol (25-OH-D) concentration was 4.61±0.58 ng/dl; 1alpha,25-dihydroxyvitamin D3 (1,25(OH)₂-D) concentration was 48.25±13.87 pg/ml; and Dihydroxy-cholecalciferol (24,25(OH)₂-D) concentration was 1.01±0.66 pg/ml. (Table-I)

On univariate analyses of variance, there was a positive association of FGF-23 with parathyroid hormone levels (p=0.011) as well as Dihydroxy-cholecalciferol level (p=0.021) but the association with other factors was not significant. There was also no significant correlation of parathyroid hormone with any of the other factors. (Table-II) On multivariate analysis, no significant correlation of FGF-23, level parathyroid hormone and glomerular filtration rate with any other factor was found. Fibroblast growth factor 23 might not perform any part in metabolism of vitamin in the patients suffering from prolonged disease of kidney.

Table-I Clinical Characteristics
Correlation: Fibroblast Growth Factor 23 & Metabolism of Vitamin D in Patients of Long-standing Kidney Disease

**DISCUSSION:**

In current study, we observed on univariate analysis that there was no significant direct effect of FGF-23 on metabolism of vitamin-D but serum levels parathyroid hormone, which is a mediator of vitamin D metabolism, was positively correlated with serum levels of FGF-23. There was also positive correlation of fibroblast growth factor 23 with Dihydroxy-cholecalciferol. Transformation of vitamin D from 25-hydroxycholecalciferol(25-OH-D) to 1alpha,25-dihydroxyvitamin D3(1,25(OH)2-D) is stimulated by parathormone but the transformation to Dihydroxy-cholecalciferol(24,25(OH)2-D) is inhibited by parathormone. On the other hand, fibroblast growth factor 23 inhibits vitamin-D transformation from 25-hydroxycholecalciferol(25-OH-D) to 1alpha,25-dihydroxyvitamin D3(1,25(OH)2-D) but stimulates the transformation of vitamin D from 25-hydroxyvitamin (25-OH-D) to Dihydroxy-cholecalciferol(24,25(OH)2-D). Lima F et al. studied the chronic kidney patients who were on dialysis and found out that changing FGF-23 levels might reflect changes in the continuing bone formation and breakdown along with bone mineralization but not any single process alone. FGF-23 may be lowered in impaired bone formation and high FGF-23 levels may be vital for good health. There was need to determine the cause and effect association between fibroblast growth factor 23 and mineralization lag time for the purpose of distinguishing between above mentioned two possibilities. Takahashi H et al. showed in their study that there was a marked and continuous decline in serum levels of FGF-23 along with substantial fall in parathyroid hormone level, phosphorus and calcium levels in the serum, following parathyroidectomy. According to Alshayeb H et al. low vitamin D level in the circulation are due to catabolism of 25-hydroxyvitamin-D in the patients with prolonged disease of kidney. Elevated FGF-23 resulted in increased Dihydroxy-cholecalciferol in the patients having longstanding disease of kidney. Fortale AA et al. studied the children suffering from longstanding disease of kidney. They found out that raised level of FGF-23 level was the primary demonstrable aberration in mineral metabolism, levels being the highest in the glomerular type of renal disease. Siomou E et al. found that high fibroblast growth factor 23 levels in early stages of longstanding kidney disease may point to the requirement for managing serum phosphate concentrations.

**CONCLUSION:**

In this study, we concluded that there is no specific and significant direct effect of FGF-23 on metabolism of vitamin D but serum levels parathyroid hormone, which is a mediator of vitamin D metabolism, was positively associated with FGF-23 level in circulation.

---

**Table I:** Correlation between FGF-23 Levels and Intact PTH Levels and Clinical Factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>FGF-23 (p-value)</th>
<th>PTH (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>0.999</td>
<td>0.986</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>0.999</td>
<td>0.854</td>
</tr>
<tr>
<td>FGF-23 (pg/ml)</td>
<td>0.111</td>
<td>0.425</td>
</tr>
<tr>
<td>PTH (pg/ml)</td>
<td>0.446</td>
<td>0.225</td>
</tr>
<tr>
<td>GFR (ml/min/1.73m²)</td>
<td>0.523</td>
<td>0.422</td>
</tr>
<tr>
<td>Creatinine (mg/dl)</td>
<td>0.984</td>
<td>0.996</td>
</tr>
<tr>
<td>Calcium (mg/dl)</td>
<td>0.960</td>
<td>1.000</td>
</tr>
<tr>
<td>Phosphorus (mg/dl)</td>
<td>0.960</td>
<td>1.000</td>
</tr>
<tr>
<td>25-hydroxycholecalciferol (ng/ml)</td>
<td>0.975</td>
<td>0.967</td>
</tr>
<tr>
<td>1alpha,25-dihydroxyvitamin D3(pg/ml)</td>
<td>0.758</td>
<td>0.703</td>
</tr>
<tr>
<td>Dihydroxy-cholecalciferol(pg/ml)</td>
<td>0.021</td>
<td>0.503</td>
</tr>
</tbody>
</table>

BMI=body mass index; FGF-23=fibroblast growth factor 23; GFR=glomerular filtration rate; PTH=parathyroid hormone

**Table II:** Association of factors and serum 25-OH-D, 1, 25(OH)2-D and 24, 25(OH)2-D levels in 40 patients with stage 3A or higher stage Chronic Kidney Disease

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>25-OH-D (p-value)</th>
<th>1,25(OH)2-D (p-value)</th>
<th>24,25(OH)2-D (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGF-23 (pg/ml)</td>
<td>0.476</td>
<td>0.376</td>
<td>0.835</td>
</tr>
<tr>
<td>PTH (pg/ml)</td>
<td>0.387</td>
<td>0.252</td>
<td>0.613</td>
</tr>
<tr>
<td>GFR (ml/min/1.73m²)</td>
<td>0.126</td>
<td>0.637</td>
<td>0.307</td>
</tr>
</tbody>
</table>

FGF-23=fibroblast growth factor 23; GFR=glomerular filtration rate; PTH=parathyroid hormone

---

**Table III:** Correlation of factors and serum Dihydroxy-cholecalciferol levels in 40 patients with stage 3A or higher stage Chronic Kidney Disease

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>25-OH-D (p-value)</th>
<th>1,25(OH)2-D (p-value)</th>
<th>24,25(OH)2-D (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGF-23 (pg/ml)</td>
<td>0.476</td>
<td>0.376</td>
<td>0.835</td>
</tr>
<tr>
<td>PTH (pg/ml)</td>
<td>0.387</td>
<td>0.252</td>
<td>0.613</td>
</tr>
<tr>
<td>GFR (ml/min/1.73m²)</td>
<td>0.126</td>
<td>0.637</td>
<td>0.307</td>
</tr>
</tbody>
</table>

FGF-23=fibroblast growth factor 23; GFR=glomerular filtration rate; PTH=parathyroid hormone

---

**Table IV:** Association of factors and serum Dihydroxy-cholecalciferol levels in 40 patients with stage 3A or higher stage Chronic Kidney Disease

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>25-OH-D (p-value)</th>
<th>1,25(OH)2-D (p-value)</th>
<th>24,25(OH)2-D (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGF-23 (pg/ml)</td>
<td>0.476</td>
<td>0.376</td>
<td>0.835</td>
</tr>
<tr>
<td>PTH (pg/ml)</td>
<td>0.387</td>
<td>0.252</td>
<td>0.613</td>
</tr>
<tr>
<td>GFR (ml/min/1.73m²)</td>
<td>0.126</td>
<td>0.637</td>
<td>0.307</td>
</tr>
</tbody>
</table>

FGF-23=fibroblast growth factor 23; GFR=glomerular filtration rate; PTH=parathyroid hormone

---

**Table V:** Association of factors and serum Dihydroxy-cholecalciferol levels in 40 patients with stage 3A or higher stage Chronic Kidney Disease

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>25-OH-D (p-value)</th>
<th>1,25(OH)2-D (p-value)</th>
<th>24,25(OH)2-D (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGF-23 (pg/ml)</td>
<td>0.476</td>
<td>0.376</td>
<td>0.835</td>
</tr>
<tr>
<td>PTH (pg/ml)</td>
<td>0.387</td>
<td>0.252</td>
<td>0.613</td>
</tr>
<tr>
<td>GFR (ml/min/1.73m²)</td>
<td>0.126</td>
<td>0.637</td>
<td>0.307</td>
</tr>
</tbody>
</table>

FGF-23=fibroblast growth factor 23; GFR=glomerular filtration rate; PTH=parathyroid hormone

---

**Table VI:** Association of factors and serum Dihydroxy-cholecalciferol levels in 40 patients with stage 3A or higher stage Chronic Kidney Disease

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>25-OH-D (p-value)</th>
<th>1,25(OH)2-D (p-value)</th>
<th>24,25(OH)2-D (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGF-23 (pg/ml)</td>
<td>0.476</td>
<td>0.376</td>
<td>0.835</td>
</tr>
<tr>
<td>PTH (pg/ml)</td>
<td>0.387</td>
<td>0.252</td>
<td>0.613</td>
</tr>
<tr>
<td>GFR (ml/min/1.73m²)</td>
<td>0.126</td>
<td>0.637</td>
<td>0.307</td>
</tr>
</tbody>
</table>

FGF-23=fibroblast growth factor 23; GFR=glomerular filtration rate; PTH=parathyroid hormone

---
Conflict of interest: NIL
Funding Source: NIL
REFERENCES:
Incidence of Adverse Drug Reactions to Methotrexate in Patients with Rheumatoid Arthritis

Muhammad Meraj FCPS¹, Inam Ullah Khan FCPS², Abdus Saboor Awan FCPS³, Munir Ahmad Abbasi FCPS⁴.

ABSTRACT
Background: Methotrexate is a first line disease modifying anti-rheumatic drug which is considered a first line option for the management of rheumatoid arthritis. It is usually administered for long duration in low-to-high doses depending on disease activity.
Methods: This descriptive cross sectional study was conducted at the District Headquarters Hospital, Battagram from 01/08/2016 to 31/07/2017. A total of 93 patients with rheumatoid arthritis who had been taking methotrexate in doses up to 20 mg were enrolled in the study and were investigated for development of adverse reactions on four monthly follow-up visits.
Results: Adverse effects of methotrexate were observed in 28 (30.18%) participants. Most common adverse effects were hepatotoxicity (13.98%), anemia (11.83%) and leucopenia (4.30%). Nausea and vomiting was reported in 2.15% patients. Participants who developed hepatotoxicity and anemia not responding to increase in folic acid had to discontinue methotrexate because of adverse effects.
Conclusion: Methotrexate associated adverse effects are a common occurrence in the management of rheumatoid arthritis and physicians should have a low-threshold for detection and timely management of these adverse effects.
Keywords: Methotrexate, myelosuppression, Serum Transaminase, Drug-induced hepatotoxicity, rheumatoid arthritis.

INTRODUCTION
Methotrexate is a disease modifying anti-rheumatic drug which is now considered a first line drug in the management of rheumatoid arthritis. Methotrexate is an antimetabolite that inhibits the formation of an enzyme tetrahydrofolate reductase in the cells thereby reducing synthesis of thymidine which is required in DNA synthesis. By partial inhibition of the immune response, methotrexate manages to reduce immune-mediated joint inflammation in the long-run.
Methotrexate has found its utility in the treatment of hematological malignancies, solid tumors, psoriasis, rheumatoid arthritis, eczema, sarcoidosis, SLE and other types of systemic vasculitis to name a few.

Rheumatoid arthritis is an auto immune disease affecting the synovial joints of the body, commonly the small joints of the hands and if the disease is left untreated, it results in gross disfigurement, reduced mobility and a number of complications severely affecting the quality of life. A number of therapeutic approaches to management of rheumatoid arthritis have been defined.

Methotrexate remains a first line treatment option for many patients with rheumatoid arthritis and considering the fact that it may have to be administered for longer duration of period, its use is associated with significant toxicity. Many of these hematological adverse effects can be prevented by concomitant administration of folic acid.

Disease modifying anti-rheumatic drugs have traditionally been used in patients with severe, progressive and non-responding to conservative measures. Methotrexate is one such disease modifying anti-rheumatic drug. It is used for long durations for the purpose of induction as well as maintenance of remission. Methotrexate is usually started in

1. Medical Officers, DHQ Hospital, Battagram (KPK)
2. District Orthopaedic Surgeon DHQ Hospital, Battagram
3. Consultant Pulmonologist, Fauji Foundation Hospital, Rawalpindi
Correspondence Dr. Inam ullah Khan Medical Officer, Orthopaedic, DHQ Hospital Battagram, KPK. Email: inamkhandr@gmail.com Phone: 03350513697
Received: May’2018 Accepted; June’2018
low-doses i.e., 7.5 mg – 15 mg once weekly and the dose incrementation is gradual. The dose is increased in small weekly increments of 5 mg after every month or two to a maximum weekly dose of 20-30 mg PO per week. Methotrexate use is associated with a number of side effects owing mainly to the duration of treatment with methotrexate and its dose. These adverse effects include bone-marrow suppression, liver damage, gastro-intestinal, renal and skin problems.

### MATERIAL AND METHODS

This study was done to determine the incidence of adverse effects of methotrexate in patients with rheumatoid arthritis in patients seen at District Headquarters Hospital, Battagram. Patients diagnosed with Rheumatoid arthritis based on the ACR 2010 criteria and who had been receiving methotrexate as mono-therapy or as a part of polytherapy drug regimen for at least one year, were selected for this study. Patients with a history of renal disease, hepatic disease, anemia or leucopenia were excluded from the study. The purpose of the study was explained to the patients and an informed consent was obtained from them and were observed for a period of 12 months. No sample size was calculated because the study was a time-bound observational study. The patients underwent routine investigations such as complete blood count, renal function tests and liver function tests, every four months. Methotrexate induced hepatotoxicity was defined as elevation of liver enzymes (alanine transaminase) to a level at least 2 times the upper limit of normal. Anemia was defined as hemoglobin level less than 12 g/dl for women and 14 g/dl for men. An Hb level between 7-10 g/dl was considered moderate anemia and an Hb level less than 7 g/dl was considered severe anemia. A while cell count of less than 4000 / mm was considered leucopenia.

The data of the patients was recorded in a proforma for statistical analysis. The data was entered into, and analyzed by SPSS version 20. Mean and standard deviations were determined for numerical variables. Frequencies were determined for different categorical variables. The outcome variable i.e., the incidence of adverse reactions was stratified according to age, sex and duration of disease. A post stratification chi-square test was applied and a p value of ≤ 0.05 was taken as significant.

### RESULTS:

There were ninety three study participants, majority of them females (n=67; %). The rest (n=26; were males. Adverse reactions of methotrexate occurred in 28 (30.18%) patients. Most common adverse drug reactions were hepatotoxicity, anemia (hemoglobin less than 10 g/dl) and leucopenia. Table:1 shows the descriptive statistics of the study population. Other tables show the frequencies of different adverse effects in the study population. When the outcome variable was stratified according to sex, age and duration of disease, no statistically significant association was noted ( p > 0.05).

#### Table-1: Descriptive statistics of study population

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of patients</td>
<td>26.92</td>
<td>3.10</td>
<td>22</td>
<td>32</td>
</tr>
<tr>
<td>Duration of treatment in years</td>
<td>3.47</td>
<td>1.28</td>
<td>1.50</td>
<td>5.50</td>
</tr>
<tr>
<td>Dose of methotrexate (mg)</td>
<td>17.58</td>
<td>4.92</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Serum ALT (IU/L)</td>
<td>50.59</td>
<td>13.83</td>
<td>35</td>
<td>89</td>
</tr>
<tr>
<td>Serum Creatinine (mg/dl)</td>
<td>0.89</td>
<td>0.14</td>
<td>0.70</td>
<td>1.10</td>
</tr>
<tr>
<td>Hemoglobin (g/dl)</td>
<td>13.34</td>
<td>2.37</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Total Leukocyte count</td>
<td>6273.67</td>
<td>1464.71</td>
<td>3100</td>
<td>8809</td>
</tr>
<tr>
<td>Total Platelet count</td>
<td>240.87</td>
<td>36.91</td>
<td>180</td>
<td>300</td>
</tr>
</tbody>
</table>

#### Table-2: Duration of treatment

<table>
<thead>
<tr>
<th>Value Label</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 2 years</td>
<td>19</td>
<td>20.43</td>
</tr>
<tr>
<td>More than 2 years</td>
<td>74</td>
<td>79.57</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

#### Table-3: Hepatotoxicity

<table>
<thead>
<tr>
<th>Value Label</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>13</td>
<td>13.98</td>
</tr>
<tr>
<td>No</td>
<td>80</td>
<td>86.02</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

#### Table-4: Severity of Anemia

<table>
<thead>
<tr>
<th>Value Label</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe Anemia</td>
<td>5</td>
<td>5.38</td>
</tr>
<tr>
<td>Moderate Anemia</td>
<td>6</td>
<td>6.45</td>
</tr>
<tr>
<td>Not anemic</td>
<td>82</td>
<td>88.17</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

#### Table-5: Leucopenia

<table>
<thead>
<tr>
<th>Value Label</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>4.30</td>
</tr>
<tr>
<td>No</td>
<td>89</td>
<td>95.70</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### DISCUSSION

Long term administration of low-dose of methotrexate is the underlying principle of management of rheumatoid arthritis in view of its efficacy. However, prolonged administration of methotrexate in itself is associated with a number of toxicities. Almost one third of our study participants developed methotrexate toxicity (n=28; 30.18%). The reported incidence of toxicity due to long term administration of low-dose methotrexate is in the range of 10% - 37%. The most common toxicity in our study population was methotrexate induced hepatotoxicity (n=13; 13.98%).
defined as a rise in serum ALT level to twice the upper limit of normal. This was followed by moderate anemia (n=6; 6.45%), severe anemia (n=5; 5.38%), leucopenia (n=4; 4.30%) and gastrointestinal side effects (n=2; 2.15%). A recent study by Gillani and colleagues reported a prevalence of methotrexate induced hepatotoxicity to be 8.6%. Their study

In our study, among the patients developing hepatotoxicity, majority were females (n=7; 53.85%) of the rest of the patients were males (n=6; 46.15%). Eight patients (61.54%) who developed hepatotoxicity had receiving low dose methotrexate for more than 2 years. The mean duration of treatment for patients developing hepatotoxicity was 3.02±1.36 years which, interestingly, was less than the mean duration of treatment for patients who did not develop methotrexate-induced hepatotoxicity (3.54±1.27 years).

The patients who developed hepatotoxicity were (mean age 27.69±3.07 vs 26.80±3.11 years) and had lesser mean hemoglobin level (mean Hb 12.85±3.08 g/dl vs 13.43±2.24 g/dl).

A study from Iran reported that deranged transaminases were found in 23.7% of patients on long term low dose methotrexate. The researchers noted that the development of hepatotoxicity was significantly associated with the duration of treatment of rheumatoid arthritis. On the other hand, we were unable to find a significant association with the duration of treatment. A study from India reported a frequency of 6.37% for methotrexate induced hepatotoxicity in patients who had been taking methotrexate for at least two years. However, they described hepatotoxicity as a rise in serum transaminases to a level thrice the upper limit of normal. The rise in serum transaminases in our study was not seen to have reached this level.

In addition to hepatotoxicity, methotrexate is known to be associated with hematological adverse effects such as anemia, leucopenia, thrombocytopenia and, sometimes, pancytopenia. The prevalence of these adverse reactions is reported to be up to 4% in all patients being administered methotrexate. The prevalence of hematological adverse effects such as anemia and leucopenia in our study was high, (n=15; 16.13%) although even higher rates of myelosuppression have been reported in literature. A recently published study reported that pancytopenia occurred in 78.5% of patients receiving methotrexate for a number of indications. On the other hand, another study reported that hematological side effects of methotrexate occurred in 4 (3.8%) patients. As reported above, leucopenia, moderate anemia and severe anemia occurred in 4, 6 and 5 patients respectively in this study.

The gastrointestinal side effects remained limited to 2 instances of methotrexate induced nausea that were self-limiting. Methotrexate associated gastrointestinal toxicity has been reported in a range of 3.6% to 30%. Our study had a number of limitations. We did not check serum levels of methotrexate in our study cohort and therefore could not correlate the serum concentrations with the adverse effects of the drug. Concomitant administration of other drugs has been known to be a risk factor in potentiating methotrexate toxicity, and we did not measure this effect.

CONCLUSION:
Methotrexate remains a first line treatment option for many patients with rheumatoid arthritis and considering the fact that it may have to be administered for longer duration of period, its use is associated with significant toxicity. Many of these adverse effects such as hematological adverse effects can be prevented by concomitant administration of folic acid.

REFERENCES
Incidence of Adverse Drug Reactions to Methotrexate in Patients with Rheumatoid Arthritis


Relapsing Polychondritis

A 31-year-old man presented to the emergency department with a 2-week history of left ear swelling. He had similar episodes over the past 2 years and 6 months of weight loss, fatigue, and generalized aches. Physical exam revealed a swollen and tender ear, costochondral joints especially the left knee. Lab tests showed elevated ESR. D.D: Infectious perichondritis, Rheumatoid arthritis, Granulomatosis with polyangitis, Polyarteritis nodosa, Relapsing Polychondritis. Curtsey: Nejam
To Compare the Effect of Cyclizine, Prochlorperazine & Ondansetron in inhibiting Postoperative Nausea & Vomiting following Laparoscopic Cholecystectomy

Faisal Ramzan MBBS, Sumera Batool MBBS, Fahad Basit MBBS, Munir Ahmad FCPS
Nishtar Hospital, Multan

ABSTRACT:
Objective: To determine the efficacy of prochlorperazine, cyclizine and ondansetron in patients following laparoscopic cholecystectomy, in terms of prevention of vomiting and nausea. It was a randomized control trial study: Anaesthesia department of the Nishtar Hospital, Multan, catering all the four surgical units, over a period from January, 2017 to January, 2018. There is a great load of surgical work in this hospital covering a larger area of South Punjab.
Methodology: Total of 324 patients divided into Group P, group O and group C received prochlorperazine (10mg), ondansetron (4mg) and cyclizine (50mg) respectively. Each patient was asked to tell when he/she is feeling nauseous, vomited and used additional antiemetic drugs. Descriptive data was compared by applying ANOVA test and Chi-square or Fischer’s exact test was applied on nominal data. Computer software SPSS version 23 was used to statistically analyze the data. P ≤0.05 was taken as significant.
Results: Although occurrence of side effects was slightly higher in group-P, but all the groups were not statistically different (p-value 0.581, 0.500 and 0.544 for headache, dizziness and sedation respectively). Nausea and vomiting was observed in 4.6% in group-O patients, 5.5% in group-C patients and 8.3% in group-P patients, difference being statistically insignificant (p=0.500).
Conclusion: From the results of this study it could be concluded that all the three drugs i.e. cyclizine, ondansetron and prochlorperazine are equally effective and there is no statistically significant difference in terms of prevention of vomiting and nausea in patients undergoing cholecystectomy through laparoscope.
Keywords: Ondansetron, Cyclizine, Prochlorperazine, postoperative nausea and vomiting

INTRODUCTION:
Most common complaint is nausea and vomiting in patients within 24 to 48 hours following laparoscopic cholecystectomy and is called post-operative nausea and vomiting (PONV). Frequency of vomiting and nausea after operation is 30% to 50%. Risk increased to 80% in the high risk patients. Brain, GI tract and vestibular system are involved in the pathophysiology of the nausea and vomiting following surgery. Nausea, retching and vomiting are the three steps of the process of nausea and vomiting. Nausea is the feeling of a need to vomit; while retching is the contraction of abdominal wall muscles, muscles of chest and diaphragm that occur with nausea, reflexive forceful removal of the upper gastrointestinal contents through the oral cavity is called vomiting. Feminine gender, smoking, past history of motion sickness and PONV are related with the higher risk of post-operative vomiting and nausea. Incidence of PONV decreases with age in adult patients. Usage of volatile and inhalational anesthetics is connected with enhanced frequency of vomiting and nausea after operation. General anesthesia is associated with increased occurrence of PONV as compared to regional anesthesia.

All the three drugs i.e. cyclizine, ondansetron and prochlorperazine are equally effective and there is no statistically significant difference in terms of prevention of vomiting and nausea in patients undergoing cholecystectomy through laparoscope.
the patients undergoing laparoscopic cholecystectomy of vomiting and nausea which ranges from rapture of skin suture, bleeding from surgical spot, dehydration and aspiration pneumonia which cause delay in healing and increase in the duration of hospital stay which in turn causes the increase risk of nosocomial infection. Any intervention which decreases the incidence of postoperative nausea and vomiting in patients would be beneficial and in this way complications of PONV can be avoided.

Anti-emetics are the drugs which are used for the prevention of postoperative nausea and vomiting. They block neuroreceptors which are involved in the pathway of emesis. There are many types of antiemetic drugs which include antihistamines (H1 receptor antagonists), dopamine antagonists, serotonin receptor antagonists, NK1 receptor antagonists, cannabinoids, benzodiazepines, anticholinergics and steroids. All classes of antiemetic drugs are associated with side effects like sedation, lethargy, skin sensitization, dry mouth, drowsiness, constipation, hypotension, restlessness, diarrhea, anxiety, insomnia, headache, prolongation of QT interval, muscle pain. Ondansetron, cyclizine and prochlorperazine are the drugs which are used frequently in the avoidance of PONV in the patients who underwent laparoscopic cholecystectomy. Prochlorperazine is dopamine receptor antagonist, ondansetron blocks the serotonin receptors and cyclizine blocks the histamine receptors. In our study we are going to compare the effectiveness of these drugs for preventing vomiting and nausea after operation in people undergoing laparoscopic cholecystectomy.

**MATERIAL N METHODS:**

A randomized control trail which was performed in Anaesthesia Department of Nishtar Hospital Multan from March 15, 2017 to February 15, 2018. Proper approval was obtained from hospital ethics committee. We obtained informed consent from all the patients before the start of the study. Study performed by Aamer M et al used as a reference to calculate the sample size. Non probability consecutive sampling was our method to select the patients. Patients who were going under laparoscopic cholecystectomy with ASA status I or II without any male to female preference were included. Age of the patients in this study ranges from 20 to 40 years. Patients with reflex esophagitis, pregnant females, peptic ulcer disease, antiemetic user, ASA status III and IV were excluded from the study. Patients who underwent emergency laparoscopic cholecystectomy with any drug allergy were also excluded from the study.

Total of three hundred and twenty four patients were involved in this study. We divided the patients into three groups. Group P included the patients who received prochlorperazine after laparoscopic cholecystectomy. Group O contained the patients who received ondansetron and Group C patients received cyclizine after laparoscopic cholecystectomy. Each group contains 108 patients. Patients were admitted in the hospital one day prior to surgery and pre-anesthesia evaluation of each patient is done by a consultant anesthesiologist who was not aware of the current study. Before the induction of anesthesia, mixture of midazolam, propofol and oxygen was used to induce anesthesia in every patient.

All the patients were given the drugs according to their groups. Group P received prochlorperazine (10mg), group O received ondansetron (4mg) and patients in the group C were given cyclizine (50mg). Isoflurane and Atracurium bromide were used for the maintenance of anesthesia if required. After completing the procedure of laparoscopic cholecystectomy neostigmine and glycopyrolate were given to every patient for the reversion of anesthesia.

To note the incidence of PONV within a day after surgery, every patient was asked to tell when he/she is feeling nauseous and every time he/she vomited. Usage of additional antiemetic drugs which are not part of this study for the avoidance of postoperative nausea and vomiting was also taken into account. Metoclopramide was the drug which was given to the patients if postoperative nausea and vomiting was not controlled by the study drugs. Side effects like dizziness, headache and restlessness of the study drugs were also noted in all the patients. Descriptive data was compared by applying ANOVA test and Chi-square or Fischer’s exact test was applied on nominal data. Data was analyzed using SPSS v.23 and value of p ≤0.05 was considered statistically significant. Computer software SPSS version 23 was used to statistically analyze the data. P ≤0.05 was taken as significant.

**RESULTS:**

In current study, the difference in the age was not significant (P value 0.067), male to female ratio (p=0.697), ASA-I and ASA-II class patients (p=0.892), and body mass index (p=0.251). The duration of anesthesia and surgery was also not significantly different (p-value 0.550 and 0.526, respectively). (Table-I)

Although occurrence of side effects was slightly higher in group-P, but the difference among all the groups was not statistically significant (p-value 0.581, 0.500 and 0.544 for headache, dizziness and sedation, respectively). Nausea and vomiting was observed in 4.6% in group-O patients, 5.5% in group-C patients and 8.3% in group-P patients but there was no statistically significant difference (P value 0.500). Emergency anti-emetic medication was required by 4.6% of the patients in group-O, 3.7% of the patients in group-C and 7.4% of the patients in group-P (p=0.446). (Table-II)
To Compare the Effect of Cyclizine, Prochlorperazine & Ondansetron in inhibiting Postoperative Nausea & Vomiting following ....

Aamer M et al.\textsuperscript{11} in their study conducted on 195 patients of laparoscopic cholecystectomy. They divided the patients into 3 groups and give them ondansetron, prochlorperazine and cyclizine according to their groups to control vomiting and nausea. On completing their study they said that these drugs are equally effective in the patients undergoing laparoscopic cholecystectomy to control vomiting and nausea which occur after operation. Grimsehl K et al.\textsuperscript{12} did their study on seventy four patients of laparoscopic surgery and divided the patients into two groups. They give one group cyclizine and the other group ondansetron. They concluded that both the drugs are equally capable of preventing postoperative nausea and vomiting and there is no delay in discharge from hospital by using these drugs although they found that cyclizine is less expansive as compared to ondansetron. Singhal A et al.\textsuperscript{13} did a review of different randomized trials to know the dissimilarity in the efficacy of the 5HT\textsubscript{3} antagonist (ondansetron) for inhibiting PONV as compared to all other drugs which are used to control vomiting and nausea after operation. They said that the 5HT\textsubscript{3} antagonists are better in preventing postoperative nausea and vomiting as compared to other drugs. Peter S et al.\textsuperscript{14} did the systemic review of the 41 trails and they compared the efficacy of drugs like cyclizine, prochlorperazine and metoclopramide with that of the ondansetron and granisetron. They concluded that the 5HT\textsubscript{3} antagonists are better for the prevention of the PONV. Catriona R\textsuperscript{15} comes to a conclusion that no group of antiemetic drug is better than the other in the prevention of postoperative nausea and vomiting.

DISCUSSION:

In our study we deduced that the efficacy of all three drugs in controlling vomiting and nausea after operation is comparable and no significant difference occur in the effectiveness of these drugs. Side effects like headache, sedation and dizziness were observed more in group P patients as compared to group C and group O. Additional use of antiemetic drugs is less for the group C patients in comparison to group P and group O.

Aamer M et al.\textsuperscript{11} in their study conducted on 195 patients of laparoscopic cholecystectomy. They divided the patients into 3 groups and give them ondansetron, prochlorperazine and cyclizine according to their groups to control vomiting and nausea. On completing their study they said that these drugs are equally effective in the patients undergoing laparoscopic cholecystectomy to control vomiting and nausea which occur after operation. Grimsehl K et al.\textsuperscript{12} did their study on seventy four patients of laparoscopic surgery and divided the patients into two groups. They give one group cyclizine and the other group ondansetron. They concluded that both the drugs are equally capable of preventing postoperative nausea and vomiting and there is no delay in discharge from hospital by using these drugs although they found that cyclizine is less expansive as compared to ondansetron. Singhal A et al.\textsuperscript{13} did a review of different randomized trials to know the dissimilarity in the efficacy of the 5HT\textsubscript{3} antagonist (ondansetron) for inhibiting PONV as compared to all other drugs which are used to control vomiting and nausea after operation. They said that the 5HT\textsubscript{3} antagonists are better in preventing postoperative nausea and vomiting as compared to other drugs. Peter S et al.\textsuperscript{14} did the systemic review of the 41 trails and they compared the efficacy of drugs like cyclizine, prochlorperazine and metoclopramide with that of the ondansetron and granisetron. They concluded that the 5HT\textsubscript{3} antagonists are better for the prevention of the PONV. Catriona R\textsuperscript{15} comes to a conclusion that no group of antiemetic drug is better than the other in the prevention of postoperative nausea and vomiting.

CONCLUSION From the results of this study it can be concluded that all the three drugs i.e. cyclizine, ondansetron and prochlorperazine are equally effective and there is no statistically significant difference in terms of prevention of vomiting and nausea in patients undergoing laparoscopic cholecystectomy.

Conflict of interest: nil Funding Source: nil

REFERENCES:

4. Hambridge K. Assessing the risk of post-operative nausea and

<table>
<thead>
<tr>
<th>Table-I Baseline characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline Characteristics</strong></td>
</tr>
<tr>
<td>Age (years)</td>
</tr>
<tr>
<td>Male (n)</td>
</tr>
<tr>
<td>ASA-I/ASA-II</td>
</tr>
<tr>
<td>BMI (kg/m(^2))</td>
</tr>
<tr>
<td>Anesthesia Duration (min)</td>
</tr>
<tr>
<td>Surgery Duration (min)</td>
</tr>
</tbody>
</table>

Data is presented as mean ± S.D or number; ASA=American society of anesthesiologists.

<table>
<thead>
<tr>
<th>Table-II Comparison of side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Side effects</strong></td>
</tr>
<tr>
<td>Headache</td>
</tr>
<tr>
<td>Dizziness</td>
</tr>
<tr>
<td>Sedation</td>
</tr>
<tr>
<td>Need for rescue anti-emetics</td>
</tr>
</tbody>
</table>

Data is presented as number (percentage)


**Important Notice for Readers**

List of Representatives of Ophthalmology Update. Readers of the respective areas can have their copy of the journal from them. Curtsey: Schazoo Pharmaceutical Laboratories (Pvt)Ltd.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Name</th>
<th>Areas</th>
<th>Contact No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M.A.Shah</td>
<td>Swat</td>
<td>03025551645</td>
</tr>
<tr>
<td>2</td>
<td>Amir Zaib</td>
<td>Peshawar</td>
<td>03025551659</td>
</tr>
<tr>
<td>3</td>
<td>Waqas Majeed</td>
<td>Rawalpindi</td>
<td>03025551817</td>
</tr>
<tr>
<td>4</td>
<td>M. Akram Ghauri</td>
<td>Gujrat , Gujranwala ,Sialkot</td>
<td>03025551918</td>
</tr>
<tr>
<td>5</td>
<td>M. Nasir</td>
<td>Lahore</td>
<td>03025551985</td>
</tr>
<tr>
<td>6</td>
<td>M. Waseem Ijaz</td>
<td>LHR DIV (Shekhiupra+Kasur+Sahiwal+Okara)</td>
<td>03008494327</td>
</tr>
<tr>
<td>7</td>
<td>M. Saleem</td>
<td>Faislabad</td>
<td>03025552031</td>
</tr>
<tr>
<td>8</td>
<td>Sajjad Abbas</td>
<td>Sargodha</td>
<td>03025552026</td>
</tr>
<tr>
<td>9</td>
<td>Maqsood Ahmed</td>
<td>Jhang</td>
<td>03025552035</td>
</tr>
<tr>
<td>10</td>
<td>M. Usman Bhutta</td>
<td>Multan</td>
<td>03025552042</td>
</tr>
<tr>
<td>11</td>
<td>M. Imran</td>
<td>Bahawalpur</td>
<td>03025552054</td>
</tr>
<tr>
<td>12</td>
<td>Agha Sagheer Ahmad</td>
<td>Sukkur</td>
<td>03037770152</td>
</tr>
<tr>
<td>13</td>
<td>Sajid Ali Shah</td>
<td>Quetta</td>
<td>3077771738</td>
</tr>
<tr>
<td>14</td>
<td>Khalid Mehmoed</td>
<td>Karachi</td>
<td>03037770670</td>
</tr>
<tr>
<td>15</td>
<td>Abdul Farhan</td>
<td>Karachi</td>
<td>3077770674</td>
</tr>
</tbody>
</table>
ABSTRACT

Background: The ovaries are smaller before puberty and post menopause, during this time the size of an ovary is approximately 1-5cm. At the time of puberty and pre-menopausal they can be up to 3cm long, during this stage they can be 1cm thick and 2.5cm wide, they enlarge significantly during ovulation and menstrual period.

Objective: To assess the role of ultrasound in ovarian size in pre and post-menopausal women in Pakistani population.

Methods: A cross sectional study was done by convenient sampling in the Gilani Ultrasound Clinic and University of Lahore ultrasound clinic. This study was conducted after approval from Board of Studies. Written informed consent was taken from the patients' parents or guardian and details are not published.

Results: The mean ± standard deviation of the right ovarian volume of 84 pre-menopausal females were 9.46 ± 3.827 and for 16 post-menopausal females was 14.025 ± 3.92. There is significant difference found in pre and post-menopausal right ovarian volume with t-statistics -4.268 (df=20.78) and P-value 0.000<0.005.

Conclusion: There is statistically significant relation of the ovarian volume with age. The volume of Premenopausal ovaries is significantly greater than the volume Postmenopausal ovaries.

Keywords: premenopausal, postmenopausal, ovarian volume

INTRODUCTION:

The ovaries are the organs responsible for the production of the female germ cells, the ova, and the female sex hormones, estrogen and progesterone, in the sexually mature female. Ovary is female genital organ, each ovary is oval shape and two in number. The ovaries are attached to the lateral pelvic side walls by the suspensory ligament containing the ovarian vessels and to the cornua of the uterus by a ligamentous condensation of the broad ligament. Each ovary is 3 x 2 x 1 cm³ in size in the resting or inactive state, but will increase in size during physiological stimulus; they will shrink after the menopause. The size and position of the ovaries varies between puberty and menopause - the mean volume, as assessed by trans-vaginal ultrasound scan of a premenopausal ovary is 6.8 cm³ (upper limit of normal 18 cm³) compared to a mean postmenopausal size of 3 cm (upper limit 8 cm).

The part of the broad ligament extending between the attachment of the mesovarium and the lateral wall of the pelvis is called the suspensory ligament of the ovary. The round ligament of the ovary, which represents the remains of the upper part of the gubernaculum, connects the lateral margin of the uterus to the ovary. The ovary usually lies against the lateral wall of the pelvis in a depression called the ovarian fossa, bounded by the external iliac vessels above and by the internal iliac vessels behind. The position of the ovary is, however, extremely variable, and it is often found hanging down in the recto uterine pouch (pouch of Douglas). During pregnancy, the enlarging uterus pulls the ovary up into the abdominal cavity. After childbirth, when the broad ligament is lax, the ovary takes up a variable position in the pelvis. There is statistically significant relation of the ovarian volume with age. The volume of Premenopausal ovaries is significantly greater than the volume Postmenopausal ovaries but certain environmental factors can vary the ovarian volume.

The ovaries are surrounded by a thin fibrous capsule, the tunica albuginea. This capsule is covered externally by a modified area of peritoneum called the germinal epithelium. The term germinal epithelium is a misnomer because the layer does not give rise to ova. Oogonia develop before birth from primordial germ cells. Before puberty, the ovary is smooth, but after puberty, the ovary becomes progressively scarred as successive corpora lutea degenerate. After menopause, the ovary becomes shrunken and its surface is pitted with...
Role of Ultrasound in the Assessment of Ovarian Size in Pre & Post-menopausal Women in Pakistani Population

scars. The blood supply, lymph drainage, and nerve supply of the ovary pass over the pelvic inlet and cross the external iliac vessels. The ovary is passing through the lateral end of the broad ligament, the part known as the suspensory ligament of the ovary.

The mean ovarian volume become from 0.7 cm at age 10 years to 5.8 cm at age 17 years. This latter volume is similar to that which we observed. It has been suggested that there are no major changes in ovarian volume during reproductive years until the premenopausal period. In menstruating women around age 40 years, there tends to be a decrease in ovarian size which is unrelated to parity. Thereafter there is a further sharp decline in size in variations in postmenopausal women which seems mostly related to the time when menstruation ceases, rather than merely to age, because when estrogen treatments were given, there appeared to be no observed decrease in ovarian volume with age.

The change in ovarian function across menopause is accompanied by climatic symptoms, increased risk of cardiovascular disease, and osteoporosis. The loss of primordial follicles and the corresponding changes in the hormone levels lead to the reduction of ovarian volume. Ovarian volume decreases from pre- to postmenopausal status and with increasing of age.

MATERIAL AND METHOD:
This study was conducted after approval from Board of Studies. Written informed consent was taken from the patient’s parents or guardian and details are not published. The cross-sectional study was done at Gillani ultrasound clinic from May 2014 to February 2015. The data was collected through convenient sampling by using the Duplex Ultrasound system with Eso My Lab/Convex Multi-frequency probe 2.5-5MHz. for the sake of performing this research on ovarian volume, 100 Pakistani Female of different age group were assessed for ovarian volume. Uterus was evaluated trans-abdominally. The ovarian volume was recorded. Permission of the Ultrasound from the Department at the area of study was taken to use the patient data. All data collected during the study was stored on computer protected by password. Data was analyzed using statistical package for social sciences (SPSS) software.

RESULTS:
Total 100 females are examined in this study with mean ± standard deviation are 28.75 ± 10.35. Among 100 females 84 were pre-menopausal with mean ± standard deviation are 24.8095 ± 5.07 years. The minimum and maximum ages are 12 and 36 years respectively while only 16 females are post-menopausal. Group with mean ± standard deviation are 49.43 ± 4.63 where minimum and maximum ages are 40 and 56 years respectively. The mean ± standard deviation of the right ovarian volume of 84 premenopausal females are 9.46 ± 3.827 and for 16 postmenopausal females are 14.025 ± 3.92. There is significant difference found in pre and postmenopausal right ovarian volume with t-statistics -4.268 (df = 20.78) and P-value 0.000<0.005.

Table-I: Comparing pre and postmenopausal Right Ovary Volume: Report

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error of Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-menopausal</td>
<td>9.4690</td>
<td>84</td>
<td>3.82704</td>
<td>.41756</td>
<td>2.70</td>
<td>19.00</td>
<td>16.30</td>
</tr>
<tr>
<td>Post-menopausal</td>
<td>14.025</td>
<td>16</td>
<td>3.92980</td>
<td>.98245</td>
<td>6.60</td>
<td>22.80</td>
<td>16.20</td>
</tr>
<tr>
<td>Total</td>
<td>10.1980</td>
<td>100</td>
<td>4.17576</td>
<td>.41758</td>
<td>2.70</td>
<td>22.80</td>
<td>20.10</td>
</tr>
</tbody>
</table>

Table-II: Independent Samples Test

<table>
<thead>
<tr>
<th>F</th>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sig.</td>
<td>T</td>
</tr>
<tr>
<td>Comparing pre and post-menopausal right ovary volume</td>
<td>.569</td>
<td>.452</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ophthalmology Update Vol. 16 No.3, July - Sep 2018
Role of Ultrasound in the Assessment of Ovarian Size in Pre & Post-menopausal Women in Pakistani Population

Mean ± standard deviation of left ovarian volume of 84 premenopausal females are 8.97 ± 3.66 and for 16 postmenopausal females >2 mean±standard deviation are 12.2750 ±3.169. There is significant difference between left ovarian volume as t-test -3.33 (21.29) and p-value (0.003<0.05).

**DISCUSSION:**

Observations were obtained in 100 pre and post-menopausal women. Among 100 females 84 were pre-menopausal with mean ± standard deviation are 24.8095 ± 5.07 years. The minimum and maximum ages are 12 and 36 years respectively while only 16 females are post-menopausal. Group with mean ± standard deviation are 49.43 ± 4.63 where minimum and maximum ages are 40 and 56 years respectively.

E.J. Pavlik et al estimated from data of 58,673 female patients that there is a statistically significant decrease in ovarian volume with each decade of life from age 30 to age 70. Mean ovarian volume in premenopausal women is significantly greater than that in postmenopausal women. The upper limit of normal for ovarian volume is 20 cm$^3$ in premenopausal women and 10 cm$^3$ in postmenopausal women.$^{[13]}$ Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, and the, Department of Statistics, University of Kentucky Medical Center, Lexington, Kentucky. USA

Ahmad Saleh et al included one hundred post-menopausal women in this study. They were recruited from Al-Azhar University Hospital Out-patient Clinic. For each woman 5mL venous blood sample was withdrawn, trans-vaginal ultrasound was carried out and body mass index (BMI) was calculated.$^{[14]}$

Ovarian volume shows statistically insignificant values (p-value >0.05). The BMI shows statistically significant values in relation to HDL and TG (p-value <0.01, <0.05 respectively). All the parameters showed statistically insignificant values (p-value >0.05) in relation to LDL. Correlation between right and left ovarian volumes and body mass index showed a p-value >0.05 which is insignificant. Although bigger ovarian size may be associated with higher hormonal levels, this is not true in postmenopausal women. Lipid derangement that is associated with lower estrogen levels that is associated with postmenstrual state is not related to ovarian volume.$^{[15]}$

R. Tepper et al included 311 healthy postmenopausal women in this study. He revealed that curvilinear relationships were found between ovarian volume and menopausal age. Ovarian volume (as plotted on the nanogram) shows a progressive decrease from 8.6±2.3 cm$^3$ in the first menopausal year, to 2.2±1.4 cm$^3$ after more than 15 years after the menopause. These data represent a comprehensive characterization of normal ovarian volumes related to postmenopausal age.$^{[16]}$

**CONCLUSION:**

The result concluded that there is statistically significant relation of the ovarian volume with age. The volume of Premenopausal ovaries is significantly greater than the volume Postmenopausal menopausal ovaries but certain environmental factors can vary the ovarian volume.

**REFERENCES**
Role of Ultrasound in the Assessment of Ovarian Size in Pre & Post-menopausal Women in Pakistani Population


******************

Multiple myeloma (Raindrop Skull)

A 46-year-old man presented with a 1-month history of fatigue, shortness of breath, and low back pain with weight loss of 30 kg over the period of 10 months. On examination, his conjunctiva and palms were pale. Laboratory evaluation revealed impaired kidney function and hypercalcemia. Radiographs demonstrated a “Raindrop Skull”. Differential diagnosis: Amyloidosis, SLE, Hodgkin’s lymphoma, Paget’s disease, Multiple myeloma. Curtsey: Nejams
Frequency of Hyperbilirubinemia in acute Appendicitis

Abdul Rauf MBBS¹, Uzair Ahmad FCPS (Gen Surgery) ², Shaukat Husaain MBBS³

ABSTRACT

Background: Acute appendicitis is one of the most common acute surgical conditions of the abdomen. Recently hyperbilirubinemia has been shown to be associated with acute appendicitis which occurs presumably as a result of bacteremia and endotoxemia and it occurs in both simple and complicated appendicitis i.e appendiceal perforation or gangrene.

Objectives: The aim of this study was to determine the frequency of hyperbilirubinemia in acute appendicitis.

Material and Methods: This study was conducted at Surgical Department, Khyber Teaching Hospital, Peshawar from January 2014 to January 2015. Study Design was descriptive (cross sectional) with duration of one year in which a total of 185 patients were observed according to WHO formula for sample size calculation by taking proportion of hyperbilirubinemia 77.8%, margin of error 6% and confidence interval 95%. Moreover consecutive (non probability) sampling technique was used for sample collection.

Results: In this study age distribution among 185 patients was analyzed as 42(23%) patients were in age range <20 years, 61(33%) patients were in age range 21-30 years, 41(22%) patients were in age range 31-40 years, 28(15%) patients were in age range 41-50 years and 13(7%) patients were in age range 51-60 years. Mean age was 30 years with SD± 2.54 (Table 1). Sixty two (62%) percent patients were male and 38% patients were female. Twenty eight (28%) percent patients had hyperbilirubinemia while 72% patients didn’t had hyperbilirubinemia. Total serum bilirubin (TSB) level among 185 patients was analyzed as 133(72%) patients had total bilirubin level < 1 mg/dl while 52(28%) patients had total bilirubin level > 1 mg/dl. Mean bilirubin level was 0.7mg/dl with SD ± 3.46.

Conclusion: Hyperbilirubinemia is a statistically significant diagnostic marker for acute appendicitis and the likelihood of perforation.

Keywords: Frequency, hyperbilirubinemia, acute appendicitis.

INTRODUCTION

Acute appendicitis is one of the most common acute surgical conditions of the abdomen. It is a disease of the young with about 40% cases occurring in patient between the age of 10 and 29 years. Since the first historical report of an appendectomy in France and England, the disease characteristics have come to be better known and more accurate diagnostic tools have been developed. Beside from signs and symptoms and specific physical examination findings, abdominal ultrasound and computed tomography (CT) scans have become the most useful tools, with accuracies up to 85 to 99%. However, as radiological examinations can be very costly and time-consuming, much interest exists in finding ways to diagnose and estimate the extent of acute appendicitis before relying on radiological examinations. Scoring systems such as the Alvarado Score and the Appendicitis Inflammatory Response Score have been devised to assist along with the clinical characteristics and the usual laboratory analyses in the diagnosis. These scores are based on clinical presentations, leukocytosis and/or C-reactive protein and they focused on the diagnostic assessment of appendicitis in a primary clinical setting.

Hyperbilirubinemia is a statistically significant diagnostic marker for acute appendicitis and the likelihood of perforation.

Both white cell count (WBC) and C-reactive protein (CRP) have low specificity for acute appendicitis i.e 72% and 60% respectively. Furthermore C-reactive protein may only be significantly raised once appendicular perforation takes place.

Recently hyperbilirubinemia has been shown to be associated with acute appendicitis which occurs presumably as a result of bacteremia and endotoxemia and it occurs in both simple and complicated append-
In a patient with a typical history of migrating pain and right lower quadrant tenderness, the diagnostic accuracy can be sufficiently high to perform an appendectomy directly. Those with less typical symptoms or signs warrant a period of observation and re-evaluation a ‘watch-and-wait’ approach employed by many clinicians. However, this approach could result in unnecessarily prolonging patients’ hospital stays and delaying their definitive treatment. In such cases where there is no clear diagnosis of acute appendicitis, serum bilirubin level may be helpful for diagnosis of acute appendicitis.

Hyperbilirubinemia has not been studied as a diagnostic marker for acute appendicitis in our local setup. Therefore this study was conducted to find out the frequency of hyperbilirubinemia in acute appendicitis in our local setup and used it as a diagnostic marker for acute appendicitis which will prevent delay in the treatment of patient with acute appendicitis and thus prevent the resultant complications associated with it i.e appendiceal perforation and gangrene.

Hyperbilirubinemia is a statistically significant diagnostic marker for acute appendicitis and the likelihood of perforation.

MATERIAL AND METHODS

This descriptive cross sectional study was conducted at surgical department Khyber Teaching Hospital (KTH) Peshawar from January 2014 to January 2015 after taking permission from local research and ethical committee. The study included 185 patients with diagnosis of acute appendicitis. Inclusion criteria was all patients of either gender and having age > 14 years to 60 years presenting with the clinical features of acute appendicitis confirmed on histopathology who have consented for the study were included in the study. The patients excluded were those with history of alcoholism as it has been associated with increase in total bilirubin level, patients with hepato-biliary pathology and hemolytic disorder. All the above mentioned conditions were excluded on the basis of history and previous medical record and if included in the study was result in bias because they act as confounder variables.

Data collection procedure: Patient presenting to Surgical B unit KTH through OPD and emergency with clinical features of acute appendicitis fulfilling inclusion criteria was included in the study. Patients were prepared for surgery after taking a detailed history, a thorough physical examination and investigations. All patients were properly assessed by the anesthetists prior to surgery. The appendectomy was performed by a consultant surgeon and appendix was sent for histopathology after surgery to confirm acute appendicitis and biopsy report was collected. Bias in the study was controlled by following strict inclusion criteria and using same machine for LFT,s measurement. Confounders in the study were controlled by following strict exclusion criteria. All the detailed information like name, age, gender and address was collected through a specially designed proforma. 05 was considered as significant value. Data was presented as tables and graphs where appropriate.

Data analysis: The statistical analysis was performed using the statistical package for social sciences (SPSS Ver. 16.0). Numerical variable like age, duration of abdominal pain and total bilirubin was presented as mean ± standard deviation. Categorical variables like gender, hyperbilirubinemia and acute appendicitis with both simple and complicated form were presented as frequencies and percentages. Hyperbilirubinemia, simple /complicated appendicitis were stratified among the age, gender and duration of abdominal pain to see the effect modifiers. Post stratification was applied using chi square test keeping P value <.

RESULTS

This study was conducted at Surgical Department, Khyber Teaching Hospital, Peshawar. Study design was descriptive (cross sectional) study and duration of the study was one year in which a total of 185 patients were observed to determine the frequency of hyperbilirubinemia in acute appendicitis and the results were analyzed as:

Age distribution among 185 patients was analyzed as 42(23%) patients were in age range <20 years, 61(33%) patients were in age range 21-30 years, 41(22%) patients were in age range 31-40 years, 28(15%) patients were in age range 41-50 years and 13(7%) patients were in age range 51-60 years. Mean age was 30 years with SD ± 2.54. Gender distribution among 185 patients was analyzed as 115(62%) patients were male while 70(38%) patients were female. Duration of abdominal pain among 185 patients was analyzed as 126(68%) patients had abdominal pain < 3 hours while 59(32%) patients had abdominal pain > 3 hours. Mean abdominal pain was 2 hours with SD ± 1.77. Total bilirubin level among 185 patients was analyzed as 133(72%) patients had total bilirubin level < 1 mg/dl while 52(28%) patients had total bilirubin level > 1 mg/dl. Mean bilirubin level was 0.7mg/dl with SD ± 3.46. Type of acute appendicitis among 185 patients was analyzed as 130(62%) patients had simple acute appendicitis while 55(30%) patients had complicated appendicitis. Hyperbilirubinemia among 185 patients was analyzed as 52(28%) patients had hyperbilirubinemia while 133(72%) patients didn’t had hyperbilirubinemia. Stratification of hyperbilirubinemia with age, gender, duration of abdominal pain and type of appendicitis is given in (table no 1,2,3).
Acute appendicitis remains a common abdominal emergency throughout the world. The diagnosis of acute appendicitis continues to be difficult due to the variable presentation of the disease and the lack of reliable diagnostic test. Though there are lots of advances in the diagnostic field with the invention of sophisticated investigations, yet the diagnosis of acute appendicitis remains an enigma for the attendant surgeon.\textsuperscript{13,14,15,16} None of the investigations like USG, CT scan can conclusively diagnose appendicitis. Time and again, it has proved that some of the investigations already discussed are costly, time consuming; require more sophisticated equipment and expertise, while some are not feasible and not readily available.\textsuperscript{17,18} So, even today, a thorough clinical examination with basic investigations like WBC count remains cornerstone in the diagnosis of acute appendicitis. With this background many surgeons and physicians have been adopting different scoring systems in order to decrease negative appendectomy. Although there has been some improvement in the diagnosis of acute appendicitis over the past several decades, the percentage of normal appendices reported in various series varies from 8 to 33%.\textsuperscript{19,20}

Our study shows that in a total of 185 patients, 23 patients were in age range <20 years, 33% patients were in age range 21-30 years, 22% patients were in age range 31-40 years, 15% patients were in age range 41-50 years and 7% patients were in age range 51-60 years. Mean age was 30 years with SD± 2.54. Sixty two percent patients were male and 38% patients were female. Seventy two percent patients had total bilirubin level <1 mg/dl while 28% patients had total bilirubin level >1 mg/dl. Seventy percent patients had simple acute appendicitis and 30% patients had complicated appendicitis. More over our study shows that 28% patients had hyperbilirubinemia in which most of the patients (78%) had complicated appendicitis while 22% patients had simple acute appendicitis. Similar results were found in other studies as:

In one study conducted by Khan S et., al\textsuperscript{21} TSB was elevated in 87(82.07\%) cases. The mean of elevated TSB was 2.26 mg/dL, ranged 1.2-11.5 mg/dL. An interesting finding was observed that patients’ in whom the appendix was gangrenous or perforated; elevation of TSB was found to be higher as compared to simple suppurative AA. The specificity, sensitivity was 100%, 82.07\%, respectively with predictive value of positive test 100\% and predictive value of negative test 17.3\. The liver enzymes were either normal or marginally elevated (<1 time) in most of the cases. It was found in our study that elevated TSB (without severe abnormalities in the value of liver enzymes) is good indicator of AA. The specificity and sensitivity of elevated TSB was 100\% and 82.07\% respectively with a predictive value for positive test 100\%. If TSB is added to already existing laboratory tests, then the diagnosis of AA in clinically suspected cases can be made with fair degree of accuracy and unnecessary or delay in appendicectomy can be avoided.

In another study done by Jamaluddin M., et. al\textsuperscript{22, 37} 52.10\% were male and 47.90\% were female. The age range was 3-57 years, and most of the patients (n = 33; 46.5\%) were between 11 and 20 years. Besides, 63 (89\%) patients had pain in the right iliac fossa of less than four-days duration, while 8 (11\%) had pain of longer duration. Total leukocyte count was found to be elevated in 33 (46.5\%) patients, while total serum bilirubin was elevated in 41 (57.70\%). Ultrasound of abdomen showed 9 (12.70\%) patients having normal appearance of appendix and 59 (83.30\%) had inflamed appendix. Four (5.60\%) patients had no signs of inflammation on naked eye appearance per operatively. Histopathology of appendix showed 10 (14.10\%) patients had non-inflammatory appendix. Patients with signs and symptoms of acute appendicitis and a raised total serum bilirubin level indicated a complication of acute appendicitis requiring an early intervention to prevent peritonitis and septicaemia. A raised serum bilirubin level is a good indicator of complicated acute appendicitis.

**TABLE NO:1.** Stratification of hyperbilirubinemia with gender (n=185)

<table>
<thead>
<tr>
<th>Hyperbilirubinemia</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32</td>
<td>20</td>
<td>52</td>
</tr>
<tr>
<td>No</td>
<td>83</td>
<td>50</td>
<td>133</td>
</tr>
<tr>
<td>Total</td>
<td>115</td>
<td>70</td>
<td>185</td>
</tr>
</tbody>
</table>

Chi square test was applied in which P value was 0.001

**TABLE NO: 2.** Stratification of hyperbilirubinemia with duration of abdominal pain (n=185)

<table>
<thead>
<tr>
<th>Hyperbilirubinemia</th>
<th>&lt;3 hours</th>
<th>&gt; 3 hours</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35</td>
<td>17</td>
<td>52</td>
</tr>
<tr>
<td>No</td>
<td>91</td>
<td>42</td>
<td>133</td>
</tr>
<tr>
<td>Total</td>
<td>126</td>
<td>59</td>
<td>185</td>
</tr>
</tbody>
</table>

Chi square test was applied in which P value was 0.002

**TABLE NO 3:** Stratification of hyperbilirubinemia with type of acute appendicitis (n=185)

<table>
<thead>
<tr>
<th>Hyperbilirubinemia</th>
<th>Simple appendicitis</th>
<th>Complicated appendicitis</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>11</td>
<td>41</td>
<td>52</td>
</tr>
<tr>
<td>No</td>
<td>119</td>
<td>14</td>
<td>133</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>55</td>
<td>185</td>
</tr>
</tbody>
</table>

Chi square test was applied in which P value was 0.004

**DISCUSSION**

Acute appendicitis remains a common abdominal emergency throughout the world. The diagnosis of acute appendicitis continues to be difficult due to the variable presentation of the disease and the lack of reliable diagnostic test. Though there are lots of advances in the diagnostic field with the invention of sophisticated investigations, yet the diagnosis of acute appendicitis remains an enigma for the attendant surgeon.\textsuperscript{13,14,15,16} None of the investigations like USG, CT scan can conclusively diagnose appendicitis. Time and again, it has proved that some of the investigations already discussed are costly, time consuming; require more sophisticated equipment and expertise, while some are not feasible and not readily available.\textsuperscript{17,18}

So, even today, a thorough clinical examination with basic investigations like WBC count remains cornerstone in the diagnosis of acute appendicitis. With this background many surgeons and physicians have been adopting different scoring systems in order to decrease negative appendectomy. Although there has been some improvement in the diagnosis of acute appendicitis over the past several decades, the percentage
similar to those of other recent studies, although recognizing perforated appendicitis. This outcome showed high diagnostic values as predictive factors for acute appendicitis, including sex and age as independent variables, our result revealed adjusted OR of 1.772 (95% CI, 1.320 to 2.379), which is relatively lower incidence of hyperbilirubinemia (17.64%), as well as perforation (36.97%), among the appendicitis patients. This may have influenced the result that the Alvarado score revealed following results, among 45 cases, SB was raised in 39 cases where as 6 cases had normal SB level. The raised SB ranged from 1.2 mg/dL to 8.4 mg/dL. The average level of SB was 2.38 mg/dL. All the cases had indirect fraction of SB above 15%. The rise in SB was without concomitant much rise in liver enzymes. There was hyperbilirubinemia in 86.6% of the patients of acute inflammation of appendix (i.e. acute appendicitis and its complications). Secondly, Raised SB ranged from 1.2mg/dL - 8.4 mg/dL. Thirdly, the rise in SB was mixed in type (both indirect and direct). Finally, the hyperbilirubinemia was intra hepatic cholestatic in type due either to abnormality in permeability of hepatocyte or ductular membrane enzyme inhibition as the liver enzymes were not much elevated.

Recently, Sand et al. reported a relatively high incidence of hyperbilirubinemia (24.9%) from an analysis of 538 acute appendicitis patients, of whom 50.7% were verified as having perforated appendicitis. In another study done by Emmanuel A et al. showed a relatively lower incidence of hyperbilirubinemia (17.64%), as well as perforation (36.97%), among the appendicitis patients. This may have influenced the result that our optimal sum of sensitivity (55.92%) and specificity (66.11%) at a cut-off level of greater than 0.85 mg/dL is relatively low compared to Miller’s result. For an adjusted OR of 1.772 (95% CI, 1.320 to 2.379), which included sex and age as independent variables, our result showed high diagnostic values as predictive factors for recognizing perforated appendicitis. This outcome is similar to those of other recent studies, although there are some discrepancies in how to exactly divide the perforation and non-perforation groups. In our study, we categorized the patients into four groups according to the conventional pathological findings in order to test each laboratory parameter; then, we simplified those groups in two groups (i.e., perforated and nonperforated) because gangrenous or necrotic appendicitis can belong to the perforation group in terms of clinical severity.

CONCLUSION

Hyperbilirubinemia is a statistically significant diagnostic marker for acute appendicitis and the likelihood of perforation.

REFERENCES:


Prevalence & Risk Factor for Postpartum Depression in Women at Sir Ganga Ram Hospital Lahore

(a cross sectional study)

Eman Fatima MBBS,1 Faheem Yousaf MBBS2, Sundas Qayyum MBBS3

INTRODUCTION:

Affective disorders occur commonly in postpartum period, ranging in severity from mild and transient “baby blues” experienced by 50–80 % of women to postpartum psychosis which affects <1 % of women [1]. Postpartum major depression lies along this spectrum of postnatal mood disorder. The debilitating effects of postpartum depression (PPD) can involve an entire family [2], and women afflicted with PPD are at high risk for recurrent depression [3]. Majority of them exhibit symptoms by 6 weeks of postpartum and if not treated, many women continue to be depressed at the end of the first postpartum year [1]. Despite its serious consequences and amenity to treatment, PPD often remains unrecognized.

Postpartum psychiatric disorders can be divided into three categories: postpartum blues; postpartum psychosis and postpartum depression. [3] Postpartum blues, with an incidence of 300–750 per 1000 mothers globally, may resolve in a few days to a week, has few negative sequelae and usually requires only reassurance. [4] Postpartum psychosis, which has a global prevalence ranging from 0.89 to 2.6 per 1000 births, is a severe disorder that begins within four weeks postpartum and requires hospitalization.[5] Postpartum depression can start soon after childbirth or as a continuation of antenatal depression and needs to be treated.[7] The global prevalence of postpartum depression has been estimated as 100–150 per 1000 births. [8]

Various risk factors like low educational level, socio-economic status, multipara with females including in-laws pressure for a male child, previous psychiatric history, lack of mutual understanding with the husband, poor relationship with in-laws and lack of moral support from them are the main causes for postpartum depression amongst women.

Postpartum depression can predispose to chronic or recurrent depression, which may affect the mother–infant relationship, child growth and development. [9] Children of mothers with postpartum depression have greater cognitive, behavioral and interpersonal prob-
lems compared with the children of non-depressed mothers. A meta-analysis in developing countries showed that the children of mothers with postpartum depression are at greater risk of being underweight and stunted. Moreover, mothers who are depressed are more likely not to breastfeed their babies and not seek health care appropriately. A longitudinal study in a low- and middle-income country documented that maternal postpartum depression is associated with adverse psychological outcomes in children up to 10 years later. While postpartum depression is a considerable health issue for many women, the disorder often remains undiagnosed and hence untreated.

The current literature suggests that the burden of perinatal mental health disorders, including postpartum depression, is high in low and lower-middle-income countries. Numerous studies carried out in developed countries provide compelling evidence that postnatal depression is associated with long-term emotional, cognitive, and intellectual problems in children. There is some evidence that poor maternal mental health may also be associated with malnutrition and poor physical health in infants in developing countries. Possible higher prevalence of PPD in mothers of female child could mean that a cycle of poor psychological and physical health in many females is perpetuated from birth, contributing to poor health of future generations. PPD is therefore likely to have important public health consequences in the developing world. Thus, PPD is of particular relevance in health planning, from the viewpoint of maternal and child health. It is also predicted that non-communicable diseases including mental disorders in developing countries would increase many folds in 2020 but lack of research on psychological morbidity, particularly perinatal psychosis and depression, would remain a challenge for assessing the global burden of disease. Few studies related to postnatal depression are reported from South Asia including Pakistan, but detailed information from Pakistan is lacking. This study intends to add to the existing knowledge about PPD and associated risk factors in Pakistan.

MATERIAL AND METHOD:
A cross-sectional study was designed to assess the prevalence of postpartum depression among women attending gynecology department of Sir Ganga Ram Hospital, Lahore. The study duration was July-October 2016. Convenient based sampling was used in it. Primary outcome variable was the presence of depression and secondary outcome variable was various risk factors for PPD. The sample size was calculated taking 13% of prevalence of PPD accepting worst frequency of eight with 95% confidence level. However, attempts were made to include 220 new cases in postnatal clinic but finally, 200 women were recruited who had given informed consent and were in the age group of 18–40 years. Mental health screening instrument Prime MD today was used to identify depression at 6 weeks of postpartum period.

A questionnaire was designed and pretested for the assessment of risk factors for PPD based on previously reported risk factors. That questionnaire included: Social and demographic details including age, educational qualification, family structure (nuclear/joint), occupation, environmental health status (housing, own land, overcrowding), and socio-economic status. Obstetric history including number and gender of children, present pregnancy (wanted/unwanted, planned/unplanned, fears and expectations regarding gender of child, mode of delivery, complications both during pregnancy and delivery), and any complication during previous pregnancies. Adverse life events during last 1 year which include ten items on a checklist selected from established life event scales.

History of previous personal and 1st degree family psychiatric disorder and treatment for the same. Relationship with and support from the family including relationship with the partner, parents, and in-laws. Data were analyzed using SPSS version 20.00. Various risk factors and their association were determined by odds-ratio and significant association was accepted at <5% level of error using Chi square or Fisher’s exact tests. In order to identify the most important confounding variables, logistic regression analysis was carried out entering each variable, first alone, then in groups, systematically. The presence of depression was taken as a dependent variable and various risk factors were assessed as independent variables. Ethical approval was obtained from the institutional ethical committee.

RESULTS:
In total, 200 new postnatal cases participated in the study. The mean age of the sample was 24.62 ± 3.7 years. Out of total 200 women, 33 (16%) were diagnosed with depression using Prime MD Today in the study. On comparing the socio-demographic factors among women with depression and women without depression, females with PPD were significantly more likely to be less educated (up to primary level) and belonged to low socio-economic class (p < 0.01). Overcrowding was also found to be significantly associated with PPD.
Table 1. Socio-demographic factors in postpartum depression

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>With depression n = 35 (%)</th>
<th>Without depression n = 165 (%)</th>
<th>Odds-ratio (95 % CI)</th>
<th>χ²/Fisher</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;30</td>
<td>5 (12.60)</td>
<td>6 (4.12)</td>
<td>3.33 (0.76–13.85)</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>≤30</td>
<td>28 (87.50)</td>
<td>163 (95.88)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤Primary</td>
<td>18 (59.22)</td>
<td>47 (28)</td>
<td>3.84 (1.79–9.26)</td>
<td>12.89</td>
<td>&lt;0.02*</td>
</tr>
<tr>
<td>&gt;Primary</td>
<td>13 (40.63)</td>
<td>124 (72.94)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuclear</td>
<td>15 (51.00)</td>
<td>63 (37.47)</td>
<td>1.74 (0.75–3.88)</td>
<td>2.08</td>
<td>0.16</td>
</tr>
<tr>
<td>Joint</td>
<td>16 (50.00)</td>
<td>108 (63.53)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>32 (100)</td>
<td>164 (96.47)</td>
<td>–</td>
<td>–</td>
<td>0.36</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0)</td>
<td>6 (3.53)</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Type of house</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kutcha</td>
<td>6 (18.75)</td>
<td>18 (10.59)</td>
<td>1.95 (0.62–5.76)</td>
<td>1.72</td>
<td>0.18</td>
</tr>
<tr>
<td>Pucca</td>
<td>26 (81.25)</td>
<td>152 (89.41)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owns land</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16 (50.00)</td>
<td>64 (37.65)</td>
<td>1.66 (0.73–3.78)</td>
<td>1.62</td>
<td>0.18</td>
</tr>
<tr>
<td>Yes</td>
<td>16 (50.00)</td>
<td>106 (62.35)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overcrowding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15 (46.88)</td>
<td>52 (30.59)</td>
<td>2.00 (0.77–4.51)</td>
<td>3.23</td>
<td>0.06</td>
</tr>
<tr>
<td>No</td>
<td>17 (53.12)</td>
<td>118 (69.41)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socio-economic status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>21 (65.62)</td>
<td>46 (27.06)</td>
<td>5.15 (2.16–12.45)</td>
<td>18.07</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>Middle/upper</td>
<td>11 (34.38)</td>
<td>124 (72.94)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comparison of the obstetric factors and gender issues among women with PPD and without it showed that depression was significantly associated with having more than two children, more than one female child, and pressure and expectation to deliver a male child. However, factors such as delivery of a female child against expectation of male child, whether pregnancy is wanted or unwanted, mode of delivery, and complications during delivery, past or present pregnancy did not affect the mental health of the participating women (Table 2).

Table 2. Obstetric factors and gender issues in postpartum depression

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>With depression n = 32 (%)</th>
<th>Without depression n = 170 (%)</th>
<th>Odds-ratio (95 % CI)</th>
<th>χ²/Fisher</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of children</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;2</td>
<td>12 (40.52)</td>
<td>21 (12.93)</td>
<td>4.60 (1.74–11.40)</td>
<td>14.31</td>
<td>0.01*</td>
</tr>
<tr>
<td></td>
<td>20 (59.48)</td>
<td>147 (87.07)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of female children</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;1</td>
<td>16 (43.9)</td>
<td>28 (17.06)</td>
<td>3.63 (1.61–8.61)</td>
<td>11.77</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>≤1</td>
<td>20 (56.02)</td>
<td>≤2</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If wanted pregnancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unplanned</td>
<td>6 (17.4)</td>
<td>28 (18.44)</td>
<td>0.81 (0.28–2.71)</td>
<td>0.03</td>
<td>0.76</td>
</tr>
<tr>
<td>Planned</td>
<td>24 (82.76)</td>
<td>127 (81.41)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Prevalence & Risk Factor for Postpartum Depression in Women at Sir Ganga Ram Hospital Lahore

**Pressure to have a male child**

<table>
<thead>
<tr>
<th></th>
<th>Yes (40.62)</th>
<th>No (59.38)</th>
<th>Odds ratio</th>
<th>(95% \text{ CI} )</th>
<th>(p) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>14</td>
<td>36(20.59)</td>
<td>2.54</td>
<td>(1.10–6.38)</td>
<td>0.02*</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>135(79.41)</td>
<td>1.0</td>
<td>0.02</td>
<td></td>
</tr>
</tbody>
</table>

**Wanted son but delivered daughter**

<table>
<thead>
<tr>
<th></th>
<th>Yes (28.12)</th>
<th>No (71.88)</th>
<th>Odds ratio</th>
<th>(95% \text{ CI} )</th>
<th>(p) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10</td>
<td>26(15.88)</td>
<td>2.07</td>
<td>(0.69–5.25)</td>
<td>0.11</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>144(84.12)</td>
<td>1.0</td>
<td>0.11</td>
<td></td>
</tr>
</tbody>
</table>

**Complication during pregnancy**

<table>
<thead>
<tr>
<th></th>
<th>Yes (15.62)</th>
<th>No (84.38)</th>
<th>Odds ratio</th>
<th>(95% \text{ CI} )</th>
<th>(p) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5</td>
<td>32(18.82)</td>
<td>0.80</td>
<td>(0.25–2.41)</td>
<td>0.18</td>
</tr>
<tr>
<td>No</td>
<td>27</td>
<td>138(81.18)</td>
<td>1.0</td>
<td>0.18</td>
<td></td>
</tr>
</tbody>
</table>

**Complication during delivery**

<table>
<thead>
<tr>
<th></th>
<th>Yes (25.00)</th>
<th>No (75.00)</th>
<th>Odds ratio</th>
<th>(95% \text{ CI} )</th>
<th>(p) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>8</td>
<td>40(23.53)</td>
<td>1.08</td>
<td>(0.41–2.79)</td>
<td>0.03</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>130(76.47)</td>
<td>1.0</td>
<td>0.03</td>
<td></td>
</tr>
</tbody>
</table>

*Fisher’s exact test with depression (\(n = 29\)), without depression (\(n = 156\)) * Statistically significant

Various risk factors which were significant in the study (up to primary level, education, low socio-economic status, more than one female child, pressure to have a male child, previous personal psychiatric complaints, no close attachment to the partner, husband taking alcohol, inadequate relationship with in-laws, and lack of support from in-laws during pregnancy) and other culturally relevant factors which were not found significant in the study (wanted son but delivered daughter) were included in the logistic regression analysis. The most important independent variables were low level of education, low socio-economic status, previous history of psychiatric illness, and poor relationship with the family (Table 3).

**TABLE 3:** Multivariate analysis of various risk factors for PPD

<table>
<thead>
<tr>
<th>Term</th>
<th>Odds ratio</th>
<th>(p) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education (up to primary level)</td>
<td>3.5811</td>
<td>0.0490</td>
</tr>
<tr>
<td>Low socio-economic status</td>
<td>3.2094</td>
<td>0.0361</td>
</tr>
<tr>
<td>Wanted son delivered daughter</td>
<td>0.1344</td>
<td>0.0407</td>
</tr>
<tr>
<td>Previous personal psychiatric complaints</td>
<td>41.6482</td>
<td>0.0002</td>
</tr>
<tr>
<td>Inadequate relationship with in-laws</td>
<td>9.6247</td>
<td>0.0041</td>
</tr>
</tbody>
</table>

**DISCUSSION:**

The result shows that the mean age of the sample was 24.63 ± 3.6 years. Out of total 200 women, 24 % were diagnosed with depression. On comparing the socio-demographic factors among women with depression and women without depression, females with PPD were significantly more likely to be less educated (up to primary level) and belonged to low socio-economic class (\(p < 0.01\)). Overcrowding was also found to be significantly associated with PPD.

Similarly another study was conducted in north India by Swapan. G in 2013 in which 202 new post natal cases participated in the study. The mean age of the sample was 24.62 ± 3.7 years. Out of total 202 women, 32 (15.8 %) were diagnosed with depression using Prime MD Today in the study. On comparing the socio-demographic factors among women with depression and women without depression, females with PPD were significantly more likely to be less educated and belonged to low socio-economic class (\(p < 0.01\)). Overcrowding was also found to be significantly associated with PPD.

Comparison of the obstetric factors and gender issues among women with PPD and without it showed that depression was significantly associated with having more than two children, more than one female child, and pressure and expectation to deliver a male child. However, factors such as delivery of a female child against expectation of male child, whether pregnancy is wanted or unwanted, mode of delivery, and complications during delivery, past or present pregnancy did not affect the mental health of the participating women. [17]

Another study was conducted in England by Renoud.J in 2012 according to that Postnatal depression currently represents the most frequent post-delivery pathology in Western countries. Early screening strategies constitute epidemiological challenges. Non-psychiatric staff must be offered adequate training on why, where, when and what kind of screenings must be established in order to obtain an effective reduction of postnatal depression. Perinatal psychiatrists should be encouraged to be meticulous about evaluation and availability of such screenings. [18]

Another study was conducted in India on this issue by Ravi.P in 2017 in which 38 studies involving 20043 women were analyzed. Studies had a high degree of heterogeneity (\(I^2 = 96.8\%\)) and there was evidence of publication bias (Egger bias = 2.58; 95% confidence in-
Prevalence & Risk Factor for Postpartum Depression in Women at Sir Ganga Ram Hospital Lahore

terval, CI: 0.83–4.33). The overall pooled estimate of the prevalence of postpartum depression was 22% (95% CI: 19–25). The pooled prevalence was 19% (95% CI: 17–22) when excluding 8 studies reporting postpartum depression within 2 weeks of delivery. Small, but non-significant differences in pooled prevalence were found by mother’s age, geographical location and study setting. Reported risk factors for postpartum depression included financial difficulties, presence of domestic violence, past history of psychiatric illness in mother, marital conflict, lack of support from husband and birth of a female child.\[21\]

CONCLUSION:
It is concluded that various risk factors were found like education, low socio-economic status, more than one female child, pressure to have a male child, previous personal psychiatric complaints, no close attachment to the husband, inadequate relationship with in-laws, and lack of support from them during pregnancy that causes postpartum depression amongst women.

REFERENCES:
ABSTRACT:
Objective: To compare the outcome of four weeks use of high grade extract of Chamomile and the placebo on sleep disorder. It was a randomized controlled clinical trial at the Gynecology outdoor, Nishtar Hospital Multan and Bahawal Victoria Hospital Bahawalpur, from January 22, 2016 to January 10, 2018.

Methodology: Two equal groups were made with 53 menopausal women in each aging at menarche and menopause and BMI was compared between the two groups. Sleep latency, time and number of awakenings, total sleep time, sleep quality, sleep efficiency, PQSI score, BDI, FSS and STAI-T score were compared between both the groups at baseline and 28th day. Student t-test was applied using SPSS v.23 computer software. P>0.05 was considered statistically insignificant.

Results: After 4 weeks of treatment, significant improvement was observed in sleep latency, time of waking after sleep onset, number of awakenings and total sleep time in the Chamomile group compared with placebo group (0.023, 0.002, 0.019 and <0.001, respectively). The improvement in STAI score was statistically significant (0.024) in the chamomile group. There was some improvement observed in the chamomile group in terms of sleep quality (0.075) and sleep efficiency (0.059) but the differences were still statistically insignificant.

Conclusion: It is concluded that chamomile extract has significant beneficial effects on the menopausal women suffering from sleep disorders.
Keywords: menopause, sleep disorders, chamomile extract

INTRODUCTION:
Menopause is an age related condition, experienced by all women. Menopause is term which describes those changes which a women undergoes just before or after the complete cessation of menstruation. This marks the end of reproductive age. When a female is born, there is a finite number of eggs present in the ovary. Hormones which are produced by the ovaries are estrogen and progesterone which play an important role in the regulation of ovulation and menstruation.

Menopause occurs when there are no more eggs present in the ovaries to be released and menstruation ceases. Normally, menopause occurs after the age of forty years. Earlier menopause also occurs, some causes of which are ovari an destruction following chemotherapy, hysterectomy, and premature ovarian syndrome and when occurring before the age of forty years, it is termed as premature menopause. As the age of menopause approaches, most common symptoms experienced by the women are hot flushes, mood swings, fatigue, depression, insomnia, irritability and joint and muscle aches.

Chamomile extract has a significant beneficial effects on the menopausal women suffering from sleep disorders.

Many sleep related complaints are associated with menopause. In spite of extensive symptoms, few polysomnographic changes have been documented which are associated with menopause. There were no significant changes observed in the polysomnograms when the individuals, who were transitioning to menopause, were surveyed with polysomnography in the Wisconsin cohort, rather an increase in obstructive sleep apnea was observed. Similar pattern was observed in the polysomnograms of young men and women, but increasing age, women incline to maintain delta sleep pattern for a longer time as compared the young men. There is worsening of sleep efficiency in older meno-
Chamomile is an ancient herb known to mankind, used for many years for different disorders. It is free from any side effect as data show. But no study on local population has ever been conducted, hence we decide to undertake a study in Pakistani population. Morin et al. observed that almost 15% of the adults use some sort of herbal remedies for their sleep disorders compared with 11% who were using prescription medication. Sedative effect of chamomile is thought to be caused by apigenin, a flavonoid constituent of chamomile, through modification of Gama aminobutyric acid (GABA) receptors. In the study by Kupfersztain et al. observed that there was a significant alleviation of fatigue and sleep disturbances by twelve weeks use of herbal extract of chamomile. Kakuta H et al. revealed that the patients receiving chamomile jelly experienced more relaxation. Sleep diaries of young men showed lesser latency in onset of sleep, night time awakenings and morning sleepiness. Chamomile is an ancient herb known to mankind, used for many years for different disorders. It is free from any side effect as data show. But no study on local population has ever been conducted, hence we decide to undertake a study in Pakistani population. Morin et al. observed that almost 15% of the adults use some sort of herbal remedies for their sleep disorders compared with 11% who were using prescription medication. Sedative effect of chamomile is thought to be caused by apigenin, a flavonoid constituent of chamomile, through modification of Gama aminobutyric acid (GABA) receptors. In the study by Kupfersztain et al. observed that there was a significant alleviation of fatigue and sleep disturbances by twelve weeks use of herbal extract of chamomile. Kakuta H et al. noticed in patients receiving chamomile jelly experienced more relaxation. Its use in young people showed lesser latency in onset of sleep, night time awakenings and morning sleepiness. Some studies have been conducted to observe the efficacy of use of chamomile extract in general population but the data is still lacking. Some studies have been conducted to observe the efficacy of use of chamomile extract in improving the sleep disorders and day time functioning capabilities in general population but the data is still lacking. We steered current study to detect the effectiveness of four weeks use of high quality chamomile extract in removing the complaints of sleep disturbances by the post-menopausal women when compared with the patients who received placebo.

MATERIAL AND METHODOLOGY:

We selected 106 post-menopausal women who presented to the Gynecology outdoor patients department at Nishtar Hospital Multan and Bahawal Victoria Hospital Bahawalpur, with any type of sleep disturbance over a time period from January 22, 2016 to January 10, 2018. Sample size was calculated by taking the study by Zick SM et al., as reference. Ethical approval was obtained from the ethics committee of the respective hospital. All the patients who gave past history of congestive heart failure, cancer, asthma, mood or anxiety disorder, obsessive compulsive disorder, lifelong psychotic or bipolar disorder, obstructive sleep apnea, substance abuse disorder, restless leg syndrome and known allergy to chamomile or other members of ragweed family, were excluded from this study.

All the patients were explained about the complete procedure and informed consent on written forms was obtained. Age of patients, age at menarche and menopause, and body mass index of all the patients was recorded. All the patients were asked to complete their sleep diaries on every morning for one whole week prior to the start of the trial. After that, all the patients were randomly divided into two groups, one group to receive 30 oral drops mixed 50 ml of water of high grade extract of chamomile (Plant Therapy German Chamomile), twice daily and the other group to receive corresponding dose of the placebo. All the patients were advised to take their medicine, first dose after lunch and the second dose one hour before going to bed. Patients were also advised to fill their sleep diaries during the fourth week of their treatment. All the patients were called back in the outdoor clinic on the 28th day. In the sleep diary, patients were to record bed time, wake up time, latency in sleep onset, time of awakening after the sleep onset, number of awakenings after sleep onset and the quality of sleep. Primary variables which were derived from the sleep diary were sleep efficiency (total sleep time / time in bed × 100) and Total sleep time. Secondary variables recoded were the common consequence of sleeplessness over day time functioning. For that purpose, patients were requested to complete their Beck Depression Inventory.
Outcome of use of High Quality Chamomile Extract on Sleep Disorders Occurring After Menopause

Results:

We selected one hundred and six menopausal women and assorted them randomly into two groups with same number of patients. When matched, both the groups were not significantly different considering the mean age of patients, mean age of menarche of patients, mean age of menopause and mean body mass index (p value 0.074, 0.527, 0.331 and 0.133, respectively). Table-I Prior to the start of treatment, sleep latency, time of waking after the onset of sleep, number of awakenings and total sleep time were not significantly different (p value 0.536, 0.393, 0.254, and 0.614, respectively). When the treatment was continued for at least four weeks and data was recorded again, a significant improvement was observed in sleep latency, time of waking after the onset of sleep, number of awakenings and total sleep time in the chamomile group when compared with placebo group (p value 0.023, 0.002, 0.019 and <0.001, respectively). Before the treatment, there was no significant difference in the data of sleep quality (p = 0.187), sleep efficiency (p = 0.185) and PQSI total score (p = 0.243) between the chamomile and the placebo groups. After a full four weeks treatment, there was some improvement observed in the chamomile group in terms of sleep quality (p = 0.075) and sleep efficiency (p = 0.059) but the difference was still statistically insignificant. There was no significant difference in the improvement of PQSI total score by the 4th week of treatment (p=0.675). Table-II When the data about the day time functioning was recorded prior to the start of the treatment, the difference in fatigue severity scale score and State trait anxiety inventory score was of no statistical significance (p value 0.468 and 0.465, respectively) but the difference in Beck depression inventory score was significant (p value 0.047). After the completion of four week treatment, no significantly different improvement was observed in the chamomile group in comparison with the placebo group in terms of fatigue severity scale score (p value 0.242) and Beck depression inventory (p value 0.067) but the improvement in State trait anxiety inventory score was statistically significant (p value 0.024) in the chamomile group. Table-III

Table-I Baseline Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Placebo (n=53)</th>
<th>Chamomile (n=53)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years</td>
<td>49.6±2.395</td>
<td>51.0±4.25</td>
<td>0.074</td>
</tr>
<tr>
<td>Age at menopause, years</td>
<td>49.7±2.52</td>
<td>49.3±2.45</td>
<td>0.331</td>
</tr>
<tr>
<td>Age at menarche, years</td>
<td>13.77±1.34</td>
<td>13.62±1.09</td>
<td>0.527</td>
</tr>
<tr>
<td>Body mass index, kg/m²</td>
<td>28.0±7.4.0</td>
<td>29.2±1.36</td>
<td>0.133</td>
</tr>
</tbody>
</table>

Table-II Sleep Diary Data by the Patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time frame</th>
<th>Placebo- Group (n=53)</th>
<th>Chamomile- Group (n=53)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep Latency, min</td>
<td>Baseline</td>
<td>42.3±17.72</td>
<td>40.3±15.35</td>
<td>0.536</td>
</tr>
<tr>
<td></td>
<td>4th Week</td>
<td>28.49±16.62</td>
<td>24.49±16.85</td>
<td>0.023</td>
</tr>
<tr>
<td>Wake after sleep Onset,  min</td>
<td>Baseline</td>
<td>37.94±17.39</td>
<td>41.28±17.43</td>
<td>0.339</td>
</tr>
<tr>
<td></td>
<td>4th Week</td>
<td>37.58±18.82</td>
<td>31.87±19.47</td>
<td>0.002</td>
</tr>
<tr>
<td>Total sleep time, hours</td>
<td>Baseline</td>
<td>5.0±1.43</td>
<td>5.3±1.17</td>
<td>0.614</td>
</tr>
<tr>
<td></td>
<td>4th Week</td>
<td>5.28±1.09</td>
<td>6.47±1.10</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sleep Quality</td>
<td>Baseline</td>
<td>2.36±0.88</td>
<td>2.5±0.72</td>
<td>0.187</td>
</tr>
<tr>
<td></td>
<td>4th Week</td>
<td>2.64±0.98</td>
<td>3.02±1.17</td>
<td>0.075</td>
</tr>
<tr>
<td>Sleep Efficiency (%)</td>
<td>Baseline</td>
<td>75.5±6.92</td>
<td>77.2±6.31</td>
<td>0.185</td>
</tr>
<tr>
<td></td>
<td>4th Week</td>
<td>78.58±6.52</td>
<td>80.8±6.85</td>
<td>0.059</td>
</tr>
<tr>
<td>PQSI Total Score</td>
<td>Baseline</td>
<td>9.60±2.06</td>
<td>10.13±2.54</td>
<td>0.243</td>
</tr>
<tr>
<td></td>
<td>4th Week</td>
<td>5.96±1.44</td>
<td>6.07±1.33</td>
<td>0.675</td>
</tr>
</tbody>
</table>

Table-III Day Time Functioning Data by the Patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time frame</th>
<th>Placebo- Group (n=53)</th>
<th>Chamomile- Group (n=53)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSS</td>
<td>Baseline</td>
<td>30.81±17.64</td>
<td>32.42±19.84</td>
<td>0.468</td>
</tr>
<tr>
<td></td>
<td>4th Week</td>
<td>26.68±20.74</td>
<td>24.92±20.80</td>
<td>0.242</td>
</tr>
<tr>
<td>BDI</td>
<td>Baseline</td>
<td>9.91±3.24</td>
<td>8.62±3.34</td>
<td>0.047</td>
</tr>
<tr>
<td></td>
<td>4th Week</td>
<td>8.94±3.38</td>
<td>7.79±3.01</td>
<td>0.067</td>
</tr>
<tr>
<td>STAI Trait Subscale</td>
<td>Baseline</td>
<td>34.15±39.35</td>
<td>35.45±38.92</td>
<td>0.465</td>
</tr>
<tr>
<td></td>
<td>4th Week</td>
<td>29.06±7.12</td>
<td>26.17±5.74</td>
<td>0.024</td>
</tr>
</tbody>
</table>

Data is entered as Mean ± S.D; PQSI= Pittsburgh Sleep Quality Index

Data is entered as Mean ± S.D; FSS= Fatigue severity index
Outcome of use of High Quality Chamomile Extract on Sleep Disorders Occurring After Menopause

Although no statistically significant, an improvement in sleep quality as well as sleep efficiency was observed. Similar results were observed in the study conducted by Zick SM et al. on the patients suffering from insomnia. In their study, there was significant improvement in sleep efficiency, total sleep time, sleep latency, fatigue severity scale score and state trait anxiety inventory subscale score.

With the increasing age, there is deterioration in the sleep quality and increase in the sleep disturbances in the menopausal women in comparison with young ovulating women. In a different study, a significant worsening of sleep continuity was seen in the women of the age range between forty six to fifty two years. There is an increase in the occurrence of sleep disorders in the women who are in the transition phase of menopause. These aberrations in the sleep patterns can be really problematic for some women and day time performance may be influenced in a negative way. These all events, in long term, tend to affect the physical as well as mental health of women. There can be really beneficial effects of chamomile extract usage in such patients. As shown in the study by Kakuta H et al., the patients who were taking chamomile jelly experienced additional relaxation. Sleep diaries of young males disclosed reduced latency in onset of sleep, night awakenings and early morning sleepiness. Chang SM et al. studied the effects of chamomile tea on the postpartum women who were having sleep difficulties. They concluded that it is useful to recommend chamomile tea to the postpartum women as a supplement and it can significantly lessen the problems related to quality of sleep and depression. Still there is need to conduct more studies to clearly define the effects of chamomile on sleep abnormalities in the menopausal women.

CONCLUSION:

It is concluded that chamomile extract has significant beneficial effects on the menopausal women suffering from sleep disorders. Chamomile extract is related with no observable side effects when used for a short period of time but has greater positive effects on sleep quality and efficiency.

Conflict of interest: Nil. Funding Source: Nil.

REFERENCES:
20. Chang SM, Chen CH. Effects of an intervention with drinking chamomile tea on sleep quality and depression in sleep disturbed postnatal women: a randomized
Prevalence of Neck Pain in Smokers & Computer Users at Fatima Memorial Hospital, Lahore

Komal Ishaq MBBS¹., Mohsin Nawaz MBBS²; Sumaira Rafaqat MBBS³

ABSTRACT:
Aim: To find the incidence of neck pain in computer users

Material and Method: A cross sectional study was done in FMH in which 600 employs were included of both gender using computer for minimum 4 consecutive hours with working of experience of at least 7-8 months were selected with non probability convenient based sampling. Data was analyzed using SPSS version 20.00.

Results: Out of 600 participants 63% were without neck pain and remaining 37% reported neck pain. In between, out of 157 smokers 120 had neck pain. The results also showed that there was significant relation of gender and smoking with neck pain but no significant relation of working hour and history with neck pain.

Conclusion: Neck pain association was found with smoking and gender but no association was found of neck pain with family history or working hours.

Keywords: smoking, gender, association, Neck pain

INTRODUCTION:

Neck pain is defined as pain experienced from the base of the skull (occiput) to the upper part of the back and extending laterally to the outer and superior bounds of the shoulder blade (scapula). Epidemiological evidence appropriate to WRNP associated with computer use is reviewed; individual, social, behavioral, and psychological issues relevant to WRNP are presented; and preventive and health policy strategies that may be considered to assist in controlling the problem of WRNP are suggested.[1]

Work related neck disorders are common problems in office workers, especially among those who are intensive computer users. It is generally agreed that the etiology of work related neck pain (WRNP) is multi-dimensional which is associated with, and influenced by, a complex array of individual, physical and psychosocial factors.[2] Today every 10th person who is using computers (laptops) is suffering from neck pain.[3] These complaints comprise an important health problem in our industrialized society; as a result, affected workers are a source of high costs to their companies.[4] Neck pain is assumed to have multifactorial causes, implying number of risk factors. Socio-demographic factors and general health, work situation, and leisure activities—could be important in the occurrence of neck pain, other factors could be gender specific, previous neck injury, and psychosocial problems are frequently described as risk factors.[5]

There is an association of neck pain with smoking and gender related but not linked to family history or working hours.

Moreover, maladjusted, stressful work environment, several physical variables and psychosocial factors such as: insufficient job satisfaction and high job demands could contribute to the development of neck pain. [6] The knowledge of possible risk factors in the development or maintenance of neck pain are important in its prevention. Van Mechelen et al.[7] created a prevention model as a tool to prevent injury. [7] This study comprises the first two steps, i.e., identification of the extent of problem, and the mechanisms which play an important role to the problem. This study estimates the prevalence of neck pain in military office workers.[8] The measured self-rated disability during all-day activities due to neck pain, pain-related fear avoidance, and the possible short weak ends break and long working hours.

MATERIAL AND METHODS:

A cross sectional study was conducted in Lahore between October 2017- January 2018. Data was collected in both genders, only those computer user were included in the study who work for more than 4 consecutive hour having work experience of 7-8 month. Age limit for this study was 20-55 year. Data was col-
Prevalence of Neck Pain in Smokers & Computer Users at Fatima Memorial Hospital, Lahore

RECOLECTED by using non probability convenient based sampling and pre tested questionnaire was used for this. The questionnaire used in the present study consisted of two parts: a general part and a specific part for people complaining of neck pain. The general part contained questions about general information, general health, work situation (physical and psychosocial factors), leisure activities and smoking. The more Data collection data was analyzed through SPSS version 21.00, descriptive statistics were applied and chi square test was used to check the association between smoker and non smoker with computer use.

RESULTS:
There were 600 participants the mean age of participants was 42.22 minimum age was 20 and maximum age was 55 year. Out of 600 participants 63% were without neck pain and 37% were with neck pain. A total of 502 participants did not have family history of neck pain. and 98 had family history of neck pain, out of which 62 did not have neck pain. P value was greater than 0.05 so it showed that there was no significant association between neck pain and family history. As shown in table 1.

Table 1: Association of family history with neck pain

<table>
<thead>
<tr>
<th>Family history of neck pain</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>300</td>
<td>202</td>
<td>502</td>
<td>0.68</td>
</tr>
<tr>
<td>Yes</td>
<td>63</td>
<td>35</td>
<td>98</td>
<td>0.68</td>
</tr>
<tr>
<td>Total</td>
<td>363</td>
<td>237</td>
<td>600</td>
<td></td>
</tr>
</tbody>
</table>

There were total 498 male out of which 335 were without pain. Total 102 were female out of which 90 were having neck pain as shown in table 2:

Table 2: Association of gender with neck pain

<table>
<thead>
<tr>
<th>Variable</th>
<th>Without pain</th>
<th>With pain</th>
<th>Total</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>335</td>
<td>163</td>
<td>498</td>
<td>0.06</td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
<td>90</td>
<td>102</td>
<td>0.06</td>
</tr>
<tr>
<td>Total</td>
<td>347</td>
<td>253</td>
<td>600</td>
<td></td>
</tr>
</tbody>
</table>

The result shows that there was significant relation of gender with smoking.

TABLE 3: Smoking and neck pain

<table>
<thead>
<tr>
<th></th>
<th>Without pain</th>
<th>With pain</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non smoker</td>
<td>330</td>
<td>115</td>
<td>0.00</td>
</tr>
<tr>
<td>Smoker</td>
<td>37</td>
<td>120</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>367</td>
<td>235</td>
<td></td>
</tr>
</tbody>
</table>

The result shows that there is a strong association of smoking with neck pain of computer user.

Table 4: Working hour and pain

<table>
<thead>
<tr>
<th></th>
<th>Without pain</th>
<th>With pain</th>
<th>Total</th>
<th>P -value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 6 hour</td>
<td>170</td>
<td>82</td>
<td>252</td>
<td>0.55</td>
</tr>
<tr>
<td>More than 6 hour</td>
<td>212</td>
<td>126</td>
<td>348</td>
<td>0.55</td>
</tr>
</tbody>
</table>

The result shows that there was no significant relation between working hour and neck pain.

DISCUSSION:
The result shows that out of 600 participants 63% were without neck pain and remaining 37% reported neck pain. In between 157 smokers 120 had neck pain. The results also showed that there was significant relation of gender and smoking with neck pain but no significant relation of working hours and history with neck pain.

A study was conducted by Veerel. D in 2008 according to this a total of 629 completed questionnaires were evaluated which revealed the following: lifetime prevalence (78%), week prevalence (53%), point prevalence (59%), year prevalence (65%) (once-only, 19%; regular, 51%; long term, 15%; never, 7%). The results of this study provided support for the role of physical and psychosocial job characteristics in the etiology of neck pain.

Similarly another study was conducted in Canada in 2008 by Bart. N accordingly by computer users have WRNP, the cause is still an enigma. A study was conducted in US by Alparak. P in 2015 in which five high-quality and two low-quality prospective cohort studies investigating the predictive value of 47 individual, work-related physical and work-related psychosocial factors for the onset of non-specific neck pain in office workers were included. Strong evidence was founded in females with previous history of neck complaints to be the predictors of the onset of neck pain.

Interestingly, for a large number of factors that have been mentioned in the literature as risk factors for neck pain, such as physical activity, low social support, and psychosocial stress, we found no predictive value for future neck pain in office workers. Literature with respect to the development of non-specific neck pain in office workers is scant. Only female with previous history of neck complaints have been identified as risk factors that predict the onset of neck pain.

A study was conducted in Australia in 2009 by Julia. M in which We assembled a cohort of 53 office workers without neck pain and measured individual, physical, workplace and psychological factors at baseline. They followed participants for 1 year to measure the incidence of neck pain and achieved 100% follow-up. Cox regression analysis was applied to examine the relationship between the putative risk factors and the cumulative incidence of neck pain. The 1-year incidence proportion of neck pain in Australian office
workers was estimated in this study to be 0.49 (95% CI 0.36–0.62). Predictors of neck pain with moderate to large effect sizes were female (HR: 3.07; 95% CI: 1.18–7.99) and high psychological stress (HR: 1.64; 95% CI: 0.66–4.07). Protective factors included increased mobility of the cervical spine (HR: 0.44; 95% CI: 0.19–1.05) and frequent exercise (HR: 0.64; 95% CI: 0.27–1.51). These results reveal that neck pain is common in Australian office workers and that there are risk factors that are potentially modifiable.\(^\text{[20]}\)

**CONCLUSION:**

It is concluded that Neck pain association was found with smokers of either gender but no association was found of neck pain with family history and working hours.

**REFERENCES:**

Comparison between Harmonic Scalpel vs Bipolar Diathermy for Hemorrhoidectomy

Muhammad Fawad MBBS¹, Shaukat Hussain MBBS², Uzair Ahmad FCPS³

ABSTRACT

Background: Haemorrhoids are dilatation of internal venous plexus with an enlarged, displaced anal cushion. It is believed to be one of the most widely spread human suffering ranking first among diseases of the rectum and large intestine.

Objective: To compare the mean operative time between harmonic scalpel and bipolar diathermy during surgery for 2nd & 3rd degree hemorrhoids.

Material and Methods: This Randomized Controlled Trial was conducted at Department of Surgery, Hayatabad Medical Complex Hospital Peshawar from 3/03/2016 to 3/03/2017. In this study a total of 82 patients (41 in each group) were observe. Patients in group A were subjected to harmonic scalpel and patients in group B were subjected to bipolar diathermy during hemorrhoid surgery. All the patients were subjected to their treatments according to their respective groups by single experienced general surgeon having minimum of five years of experience. Operative time was measured by the researcher himself during surgery starting from induction of anesthesia till the securing of hemostasis.

Results: Our study shows that Harmonic scalpel Haemorrhoidectomy mean age was 40 years with SD ± 10.27 while in Bipolar diathermy mean age was 41 years with SD ± 11.92. In Harmonic scalpel Haemorrhoidectomy 43% patients were male and 57% patients were female. Where as in Bipolar diathermy 40% patients were male and 60% patients were female. In Harmonic scalpel Haemorrhoidectomy mean operative time was 17 minutes with SD ± 3.82. Where as in Bipolar diathermy mean operative time was 25 minutes with SD ± 7.25.

Conclusion: Our study concludes that mean operative time in harmonic scalpel is less than bipolar diathermy in the treatment of 2nd or 3rd degree hemorrhoids.

Key Words: mean operative time, harmonic scalpel and bipolar diathermy, hemorrhoids.

INTRODUCTION

Haemorrhoids are dilatation of internal venous plexus with an enlarged, displaced anal cushion. It is believed to be one of the most widely spread human suffering ranking first among diseases of the rectum and large intestine. Symptoms resulting from haemorrhoids are commonly bright red bleeding per rectum, mucosal prolapse or protrusion, and pruritus ani. Pain is not characteristic unless there has been thrombosis or strangulation of the haemorrhoid which possibly can lead to gangrene.

Haemorrhoids can be divided into four grades according to the degree of prolapse. First degree piles remain internal which second degree piles prolapsed on defecation, but reduce spontaneously, whilst third degree require manual reduction. Fourth degree hemorrhoids are permanently prolapsed and cannot be reduced.

Mean operative time in harmonic scalpel is less than bipolar diathermy in the treatment of 2nd or 3rd degree hemorrhoids.

Regarding treatment of hemorrhoids with conservative therapy include diet, lifestyle changes and hydrotherapy which requires a higher degree of patient compliance to be effective. When conservative therapy is ineffective various other treatment options like injection sclerotherapy, rubber band ligation, cryosurgery, infrared photocoagulation and LASAR technique are employed. Each of the above mentioned options can be performed as an outpatient procedure. If nonsurgical approach fails the patient is referred for surgery.

Harmonic scalpel (HS) uses ultrasonic vibrations at 55.5 KHz to cut and coagulate small vessels of up to 2 mm. Advantages of harmonic scalpel in surgery include reduced operative bleeding and effective hemostasis resulting in shorter operation times and less tissue damage than high-energy cautery devices such as diathermy or laser.

Footnotes:

¹. Medical Officer Bacha Khan Medical Complex Swabi ². Trainee Registrar Surgical “B” Unit MTI, HMC Peshawar ³. Specialist Registrar Surgical “B” Unit MTI, HMC Peshawar.

Correspondence: Dr. Muhammad Fawad, H No 306, street 5, sector L2, Phase 3 Hayatabad Peshawar. Email: m.fawad85@gmail.com, Medical Officer Bach Khan Medical Complex Swabi Contact#: 0333-9450795

Received: May 2018                      Accepted: Jne 2018

Ophthalmology Update Vol. 16 No.3, July - Sep 2018
polar diathermy has been shown to reduce operating time and postoperative pain or analgesic requirements. An ultrasonic activated scalpel is associated with decreased thermal damage to tissue, superior wound healing, and facilitated dissection within tissue planes. Hemorrhoidectomy with the ultrasonic scalpel has been shown to be an effective, safe method for hemorrhoid excision with the additional benefit of reduced postoperative pain\textsuperscript{11, 12}. In a study reported by Bulus H et al, the average postoperative stay in the HS group was 1.0 ± 0.1 days and in the diathermy group was 1.2 ± 0.4 (p = 0.001). The time of return to normal activity was less for the HS groups than for the diathermy groups (10.6 ± 2.1 days vs. 16.0 ± 6.3 days; p = 0.001). The mean operating time of the HS and diathermy groups was 16.8 ± 4.1 minutes and 25.5 ± 7.7 minutes, respectively (p = 0.001)\textsuperscript{13}. However, another study by Tsunoda A et al, showed operating time median 16 (95\% CI: 14.6-18.2) min vs 31 (95\% CI: 28.1-35.3) min, P < 0.0001 was observed in diathermy group compared with HS group\textsuperscript{9}.

The present study is designed to compare the mean operative time between HS and bipolar diathermy during surgery for 2\textsuperscript{nd} & 3\textsuperscript{rd} degree hemorrhoids. Hemorrhoids is a common illness in our population and locally many techniques are used for its treatment ranging from one facility to another and from conservative to surgical treatment. Also though, the literature exists for the efficacy of treatment for 2\textsuperscript{nd} & 3\textsuperscript{rd} degree hemorrhoids but locally surgeons prefer technique of their choice and in light of scarcity of local statistics about the efficacy of one procedure over the other. Both HS & bipolar diathermy are relatively new techniques in our setup and RCTs on these two procedures are very rare. This study will provide us with local comparison results.

MATERIAL AND METHODS

This Randomized controlled trial was conducted at Department of Surgery, Hayatabad Medical Complex Hospital Peshawar from 3/03/2016 to 3/03/2017. Sample size was 41 in each group keeping 16.8 ± 4.1 minutes and 25.5 ± 7.7 minutes mean operative time for HS and bipolar diathermy respectively\textsuperscript{13}, 95\% confidence interval and 90\% power of the test. The inclusion criteria: Patients with 2\textsuperscript{nd} & 3\textsuperscript{rd} degree hemorrhoids, age group 18-65 year of either gender. The exclusion criteria: Patient with history of bleeding diathesis (was diagnosed by history of bleeding and coagulation profile) Colorectal carcinoma (was diagnosed on medical record and history) Ulcerative colitis (was diagnosed on medical record and history) Patients with chronic obstructive pulmonary disease (was diagnosed on history, examination and spirometry). Chronic constipation (was diagnosed on history, examination and U/S). Bladder outlet obstruction (was diagnosed on history, examination and U/S). The above mentioned conditions are confounders and if included had introduce bias in the study results.

Data collection procedure: After the approval of my study by the Institutional Ethical Committee. Patients with 2\textsuperscript{nd} and 3\textsuperscript{rd} degree hemorrhoids was selected from the outpatient setting and admitted in surgical ward of the hospital for further workup. Written informed consent was obtained after initial assessment of symptoms based on history and clinical examination including digital rectal and proctoscopic examination; this had include explanation of the procedure itself as well as post-procedure pain and complications like bleeding, infection, sepsis and recurrence.

After inclusion, the patients were randomly allocated in two groups by lottery method. Patients in group A were subjected to harmonic scalpel and patients in group B were subjected to bipolar diathermy during hemorrhoid surgery. All the patients were subjected to their treatments according to their respective groups by single experienced general surgeon having minimum of five years of experience. Operative time was measured by the researcher himself during surgery starting from induction of anesthesia till the securing of hemostasis.

All the patients was advised standard postsurgical medication which had included analgesics and sitz bath and was kept strictly uniform in both groups. All the detail information was recorded in a specially designed proforma, which is attached. Confounders and bias was controlled by strictly following exclusion criteria.

Data analysis: The data was entered into SPSS version 20.0 for Windows. Mean and Standard deviation was calculated for numerical variables like age and operative time. Frequencies and percentages were calculated for categorical variables like gender and degree of hemorrhoid. Mean operative time was compared in both the groups using independent sample t test while keeping p value of less than 0.05 as significant. Mean operative time in both the groups were stratified among age, gender and degree of hemorrhoid to see the effect. All results were presented as tables and graphs.

RESULTS

This study was conducted at Department of Surgery, Hayatabad Medical Complex Hospital Peshawar in which a total of 82(41 in each group) patients were observed to compare the mean operative time between harmonic scalpel and bipolar diathermy during surgery for 2\textsuperscript{nd} & 3\textsuperscript{rd} degree hemorrhoids and the results were analyzed:

Age distribution among two groups was analyzed as in group A (Harmonic scalpel Haemorrhoidectomy) 4(10\%) patients were in age range 20-30 years,
15(36%) patients were in age range 31-40 years, 12(30%) patients were in age range 41-50 years, 10(24%) patients were in age range 51-60 years. Mean age was 40 years with SD ± 10.27. Where as in group B (Bipolar diathermy) 4(10%) patients were in age range 20-30 years, 16(38%) patients were in age range 31-40 years, 12(30%) patients were in age range 41-50 years, 9(22%) patients were in age range 51-60 years. Mean age was 41 years with SD ± 11.92.

Gender distribution among two groups was analyzed as in group A (Harmonic scalpel Haemorrhoidectomy) 18(43%) patients were male and 23(57%) patients were female. Where as in group B (Bipolar diathermy) 16(40%) patients were male and 25(60%) patients were female. Degree of haemorrhoids among two groups was analyzed as in group A (Harmonic scalpel Haemorrhoidectomy) 32(79%) patients had grade 2 haemorrhoids and 9(21%) patients were had grade 3 haemorrhoids. Where as in group B (Bipolar diathermy) 33(80%) patients had grade 2 haemorrhoids and 8(20%) patients were had grade 3 haemorrhoids.

Mean operative time among two groups was analyzed as in group A (Harmonic scalpel Haemorrhoidectomy) mean operative time was 17 minutes with SD ±3.82. Where as in group B (Bipolar diathermy) mean operative time was 25 minutes with SD ±7.25. Stratification of mean operative time with age, gender and degree of haemorrhoids is given in table no 5,6,7.

**Table no 1. Stratification of mean operative time w.r.t age distribution (n= 82)**

<table>
<thead>
<tr>
<th>AGE</th>
<th>MEAN OPERATIVE TIME (in minutes)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GROUP A</td>
<td>GROUP B</td>
</tr>
<tr>
<td>20-30 years</td>
<td>16 ± 3.76</td>
<td>24 ± 6.81</td>
</tr>
<tr>
<td>31-40 years</td>
<td>16 ± 3.88</td>
<td>24 ± 6.97</td>
</tr>
<tr>
<td>41-50 years</td>
<td>17 ± 3.79</td>
<td>25 ± 7.22</td>
</tr>
<tr>
<td>51-65 years</td>
<td>18 ± 3.91</td>
<td>26 ± 7.83</td>
</tr>
</tbody>
</table>

Group A: Harmonic scalpel Haemorrhoidectomy
Group B: Bipolar Electrocautery

**Table no 2. Stratification of mean operative time w.r.t gender distribution (n= 82)**

<table>
<thead>
<tr>
<th>GENDER</th>
<th>MEAN OPERATIVE TIME (in minutes)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GROUP A</td>
<td>GROUP B</td>
</tr>
<tr>
<td>Male</td>
<td>17 ± 3.63</td>
<td>25 ± 7.20</td>
</tr>
<tr>
<td>Female</td>
<td>17 ± 3.54</td>
<td>25 ± 7.15</td>
</tr>
</tbody>
</table>

Group A: Harmonic scalpel Haemorrhoidectomy
Group B: Bipolar Electrocautery

**DISCUSSION**

Haemorrhoids are dilatation of internal venous plexus with an enlarged, displaced anal cushion. Symptoms resulting from haemorrhoids are commonly bright red bleeding per rectum, mucosal prolapse or protrusion, and pruritus ani. Haemorrhoids can be divided into four grades according to the degree of prolapse. First degree piles remain internal but bleed. Second degree piles prolapsed on defecation, but reduce spontaneously, whilst third degree require manual reduction. Fourth degree hemorrhoids are permanently prolapsed and cannot be reduced.

Our study shows that in group A (Harmonic scalpel Haemorrhoidectomy) mean age was 40 years with SD ± 10.27 while in group B (Bipolar diathermy) mean age was 41 years with SD ± 11.92. In group A (Harmonic scalpel Haemorrhoidectomy) 43% patients were male and 57% patients were female. Where as in group B (Bipolar diathermy) 40% patients were male and 60% patients were female. In group A (Harmonic scalpel Haemorrhoidectomy) 79% patients had grade 2 haemorrhoids and 21% patients were had grade 3 haemorrhoids. Where as in group B (Bipolar diathermy) 80% patients had grade 2 haemorrhoids and 20% patients were had grade 3 haemorrhoids. In group A (Harmonic scalpel Haemorrhoidectomy) mean operative time was 17 minutes with SD ±3.82. Where as in group B (Bipolar diathermy) mean operative time was 25 minutes with SD ±7.25. Our study concludes that mean operative time in harmonic scalpel is less than bipolar diathermy in the treatment of 2nd or 3rd degree hemorrhoids.

In a study reported by Bulus H et al, the average postoperative stay in the HS group was 1.0 ± 0.1 days and in the diathermy group was 1.2 ± 0.4 (p = 0.001). The time of return to normal activity was less for the HS groups than for the diathermy groups (10.6 ± 2.1 days vs. 16.0 ± 6.3 days; p = 0.001). The mean operating time of the HS and diathermy groups was 16.8 ± 4.1 minutes and 25.5 ± 7.7 minutes, respectively (p = 0.001). However, another study by Tsunoda A et al, short operating time median 16 (95% CI: 14.6-18.2) min.
Comparison between Harmonic Scalpel vs Bipolar Diathermy for Hemorrhoidectomy

vs 31 (95% CI: 28.1-35.3) min, P < 0.0001 was observed in diathermy group compared with HS group.

Kwok et al\textsuperscript{14} reported that the postoperative pain was less after bipolar diathermy hemorrhoidectomy than hemorrhoidectomy with the ultrasonic scalpel, where the wounds were left open. Because bipolar diathermy surgery is considered as a suture-less closed hemorrhoidectomy\textsuperscript{15,16} and the wounds were closed in the ultrasonic scalpel group in the present study, treatment of wounds seemed to be identical in both groups. There was some evidence that closed hemorrhoidectomy was associated with less pain compared with open controls during the early postoperative period.\textsuperscript{17,18}

In another study, where mean VAS was 2.77±0.806 in bipolar diathermy and 3.69±0.72 in harmonic scalpel group whereas mean operating time in bipolar diathermy group was 15.82±1.619 and 20.94±1.722 in harmonic scalpel group. This shows bipolar diathermy hemorrhoidectomy significantly better than hemorrhoidectomy with harmonic scalpel. Contrarily Tsunoda et al\textsuperscript{19} reports that there is no significant difference between two groups. 130 patients were enrolled to the study, 65 in each group. 28 patients which is 21% of total were smoker and 14 patients which is 10.8% were diabetic.

CONCLUSION

Our study concludes that mean operative time in harmonic scalpel is less than bipolar diathermy in the treatment of 2rd or 3rd degree hemorrhoids.

REFERENCE

If Hyperuricemia is a threat for Gout & Myocardial Infarction

Muhammad Siyar FCPS ¹, Khalid Khan FCPS ², Muhammad Israr M.Phil ³, Zarmina Ahmed M.Phil ⁴, Farhan Akram M.Phil ⁵ Prof Muhammad Khalid FCPS ⁶

ABSTRACT

Background: Hyperuricemia is being blamed for gout and myocardial infarction. Hyperuricemia is common but most of the time not associated with gout. There is limited scientific work available even in Western countries other than epidemiological surveys. Classic topaceous Gout is very rare in Pakistan as compared to West. Oligo arthritis when accompanied by hyperuricemia is frequently labeled as gout. This definitely overestimates the incidence of gout. No doubt hyperuricemia is related to gout and ischemic heart disease. A preliminary study is needed at least we should know the prevalence of hyperuricemia in KPK because uric acid precipitates at saturation and is vasculotoxic. Next we should co-relate it with gout and MI. Misconception regarding hyperuricemia must be clarified through good literature review before proceeding to genetic studies and fluid examination for crystal examination. It was a cross sectional study.

Objective: Epidemiologic study of hyperuricemia in KPK District Mardan and nearby districts with good literature review to prevent over diagnosis of gout.

Study Design: Cross sectional

Material and Methods: A total of hundred adult patients, both male and female from KPK were selected in random suffering from various medical conditions like DM, hypertension, irrespective of arthritis/non arthritis, for level of serum uric acid level presented to Mardan Medical Complex, a tertiary care hospital. Clinical condition and hyperuricemia was co related. Serum was tested with Microlab300-and Dialab reagent at pathology dept (BKMC) Bacha khan Medical College Mardan

Results: In male 12 % and in female 16 % of patients showed hyperuricemia. Three male and one female was suffering from only one male patients showed classical topaceous gout. In Male mean of 5.28 mg/dl with standard dev of 1.34 mg/dl was recorded. In female mean uric acid of 4.82 mg/dl with standard dev of 1.22 was recorded. Highest level of 13.5 and 13 in male and female respectively was also noted. Ischemic heart disease was not seen in any of hyperuricemic patients.

Conclusion: Hyperuricemia and gout are less prevalent in KPK as compared to West. Classic topaceous gout is very rare, though definitely present. Genetic studies and joint fluid for microscopy are mandatory to label a patient of arthritis as gout even with hyperuricemia, to avoid over diagnosis of gout. There is no relationship of ischemic heart disease and hyperuricemia in this study.

Keywords: Hyperuricemia KPK, Gout, MI, over diagnosis of gout.

INTRODUCTION:

Arthritis and ischemic heart disease is a common worldwide disorder. It is more often a differential to consider gout in cases of arthritis when clinical and serum marker are unable to settle a cause for arthritis. Diagnosis of gout is very controversial when classic topaceous, but rare, gout is absent. Relationship of hyperuricemia and gout is not a must; either low or high. Crystal visualization experts are very lacking in under-developed world and frequently is difficult in absence of joint effusion most of time. Hyperuricemia by itself is considered as threat for Myocardial Infarction (4). Classic gout is rare and labelling of oligo arthritis with borderline high uric acid overestimates gout.

Hyperuricemia and topaceous gout are less common in our set up as compared to West. Genetic and joint fluid studies are mandatory in Gout and hyperuricemia, including Ultrasound and polarized microscopy, CT, Dual energy CT (DECT) imaging. DECT is very useful in detecting early gouty tophi in soft tissue, and early bone erosion.

During the past few decades the prevalence of hyperuricemia in the general population appear to have increased and incidence of gout have doubled. The general prevalence of gout is 1–4% of the general population. In western countries, it occurs in 3–6% in men and 1–2% in women. In some countries, prevalence may increase up to 10%. Prevalence rises up to 10% in men
and 6% in women more than 80 years old. Annual incidence of gout is 2.68 per 1000 persons. It occurs in men 2–6 folds more than women (4). Worldwide incidence of gout increases gradually due to poor dietary habits such as fast foods, lack of exercises, increased incidence of obesity and metabolic syndrome (4). In obesity Leptin hormones is risk for hyperuricemia. Ingestion of foods rich in purines such as cooked or processed food especially from animal and seafood origin is a key element of increasing uric acid precursors. While foods rich in purine of vegetable origin such as beans, lentils, mushrooms, peas, legumes, and dairy products do not carry any risk on hyperuricemia, thus, can be allowed in gout patients. Furthermore, foods rich in vitamin C, low fat dairy products, plant oils such as olive, sunflower and soy were associated with reduced risk for hyperuricemia, thus, can be allowed in gout patients. Vitamin C was found to increase renal excretion of uric acid so it can be used as a supplement during management of gout (8). Alcohol is a well-known risk factor for gout (7) (4) (9) (6). Increased prevalence of medical conditions (e.g., renal conditions, hypertension, and cardiovascular disorders) and use of medications that increase uric acid levels (e.g., diuretics and low-dose aspirin). Although many prospective studies have suggested an independent association between serum uric acid levels and the future risk of cardiovascular-metabolic morbidities and mortality (1), uric acid by itself is an antioxidant as well. Compared with patients with osteoarthritis, patients with gout were significantly more likely to have cardiovascular disease, hypertension, diabetes, and chronic renal failure, and were more likely to have used diuretics or ciclosporin (3).

Five-year cumulative incidence of gout according to serum uric acid level in men in the Normative Aging Study indicates an increase incidence, exponentially with serum uric acid level 2% with serum uric acid level 6 mg /dl , 4% with 8mg/dl ,30% with serum uric acid 10 mg/dl (17). In accordance with physio-chemical laws, once uric acid has passed its saturation point of 400 μmol/L (6.8 mg/dL; at 37 °C, pH 7.4), it starts to precipitate out in the form of monosodium urate crystals. Sites of predilection are peripheral regions of the body (e.g., the joints of the extremities) when ambient temperatures are low and inflamed joints. Increased serum uric acid (SUA) above a specific threshold is a requirement for the formation of uric acid crystals. Despite the fact that hyperuricemia is the main pathogenic defect in gout, many people with hyperuricemia do not develop gout or even form UA crystals. In fact, only 5% of people with hyperuricemia above 9 mg/dl develop gout. Accordingly, it is thought that other factors such as genetic predisposition share in the incidence of gout. Compared with women, men have a four- to nine-fold increased risk of developing gout. Women often do not develop gout until they reach menopause, when the uricosuric action of estrogens is lost. Even in western countries like Germany gout is treated primarily by primary care physicians and internists. Patients with persistent disease, those with an atypical course with polyarticular gout or joint destruction, or those whose cases are complicated by progressive kidney failure or allopurinol intolerance are treated by rheumatologists or nephrologists.

Unfortunately no guidelines exist for the diagnosis and treatment of gout; all that have been published are recommendations on the basis of experience and expert opinion. European recommendations for the management of gout were published in 2006 by the European League Against Rheumatism (EULAR), and the British Society for Rheumatology (BSR) published its guidelines in 2007 (4) (5). Urate is excreted primarily via the kidneys. In recent years important urate transport proteins such as the human URAT1 transporter (hURAT1) and the fructose transporter SCL2A9 have been characterized (9). Polymorphisms in the corresponding genes lead to a disturbance in the function of the transporters, with reduced renal urate excretion and consequent accumulation of urate, and are often associated with gout. The transport function is also affected by various drugs: for example, low-dose aspirin treatment and diuretics reduce urate excretion by inhibiting hURAT1. Compared with patients with osteoarthritis, patients with gout are significantly more likely to have cardiovascular disease, hypertension, diabetes, and chronic renal failure, and are more likely to have used diuretics or ciclosporin (10). Hyperuricemia is caused by hypertension, diabetes, insulin, diuretic therapy other than spironolactone ACE inh, ARB, s other than Losatan and may be responsible for.

Treatment of gout includes diet restrictions and drugs. Indications for ULD have increased over the years following better awareness of potential adverse effects of hyperuricemia on the cardio-vascular system and that long standing gout associates with comorbidities and large MSU deposits which will make crystal dissolution more difficult. According to the recent EULAR recommendations, ULDs are indicated in severe gout or when associated with uric acid lithiasis as traditionally, but also in patients with cardio-vascular or renal comorbidities, or with high (>8 mg/dl) uricemia or young age (<40 years), as these are likely to have frequent attacks. In patients with a definite diagnosis of gout, the EULAR advises to discuss with the patient the indication of ULD as soon as after the first flare (6). Fenofibrate, atorvastatin and losartan are non-licensed uricosurics which can be used to treat gout comorbidities or in association with xanthine oxidase inhibitors (10), (11). Urate oxidases such as rasburicase is a short-life IV uricase, which is approved for the management of tumor lysis syndrome. Its non-licensed use has been reported in tophaceous gout (12). Pegloticase is a Pegylated uricase which has been approved, in the USA and Europe, for the management of severe gout, refractory to oral ULDs, and is commercially available in the USA. The drug is administered by IV infusions of 8 mg
If Hyperuricemia is a threat for Gout & Myocardial Infarction

every 2 weeks and has been shown to be very effective (13). Thiazide and loop diuretics increase uricemia by an average of 0.65 and 0.96 mg/dL respectively (14). Beta-blockers, non-losartan ARBs and ACE inhibitors have also been associated with an increased risk of gout (15) and increased uricemia. Calcium channel inhibitors and losartan should be privileged. In cardiac failure, spironolactone, which has no effect on uric acid (16) can be advised when possible. Cardio-protective aspirin modestly increases uricemia and replacement by clopidogrel can be considered. High dose aspirin are uricosuric, antigout.

MATERIAL AND METHODS:
A total of hundred adult patients, both male and female from KPK were selected in random suffering from various medical conditions like DM, hypertension, arthritic, non-arthritic for level of serum uric acid presented to Mardan Medical Complex, a tertiary care hospital. Clinical condition and hyperuricemia was co-related. Serum was tested with Microlab300-Diab reagent at pathology Deptt (BKMC) Bacha khan Medical College Mardan, KPK (Pak).

RESULT
Table: 1  Gender wise mean level of uric acids in KPK Mardan.

<table>
<thead>
<tr>
<th>Sex</th>
<th>No of patients</th>
<th>Mean serum uric acid level mg/dl</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>53</td>
<td>5.282353</td>
<td>+_ 1.349057</td>
</tr>
<tr>
<td>Female</td>
<td>47</td>
<td>4.822449</td>
<td>+_ 1.228405</td>
</tr>
</tbody>
</table>

Table: 2  Gender wise distribution ( Normal/ Abnormal ) of serum uric acid level.

<table>
<thead>
<tr>
<th>Category</th>
<th>No of patients</th>
<th>% of total patients</th>
<th>Total of normal and abnormal with % (Both M/F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal serum uric acid (Male)</td>
<td>45</td>
<td>90 %</td>
<td>Total normal</td>
</tr>
<tr>
<td>Normal serum uric acid( Female)</td>
<td>41</td>
<td>82 %</td>
<td>86 (86 % )</td>
</tr>
<tr>
<td>Abnormal Uric acid ( Male)</td>
<td>6</td>
<td>12</td>
<td>Total Abnormal</td>
</tr>
<tr>
<td>Abnormal Uric acid(Female)</td>
<td>8</td>
<td>16</td>
<td>14 (14 % )</td>
</tr>
</tbody>
</table>

DISCUSSION:
In KPK Hyperuricemia is 12% in male with mean of 5.28 mg/dl, 1.34 standard deviation, with a peak value of 13 mg/dl but all other high values fall below 9 mg/dl. Hyperuricemia is 16% in female with an mean of 4.82 mg/dl, 1.22 standard deviation, with a peak value of 13.5 mg/dl but all other high values fall below 9 mg/dl. As mentioned gout was also common in male (3%) as compared to female (1%) in this study. In a study by Gaafar, Rgab,Mohsen ,Elsherhaly and Thomas Bardin in western countries, it occurs in 3-6% in men and 1-2% in women. In some countries, prevalence may increase up to 10%. One patient of considerable interest of Topaceous classic gout was noted in this study. He had rounded big nodules at interphalangeal gout. He is now 40 year age. He got this disease at age of 23 year He had serum uric acid from 7 to 9 mg/dl.Once his serum uric acid gone up to 13 mg/dl in an acute episode. He is, hypertensive, non-diabetic with no other disorder of increased cellular turn over like CML. His urinary uric acid level are normal.

Gout has genetic component and he belongs to pashtoon tribe. One of his brother also has arthritis, though not classic topaceous. One female of 50 years and one male patient of 53 years with serum uric acid of 6.2 and 7.1 mg /dl were suspected of gout with erythematous arthritic lesion were noted on two episodes. It was not classic Podagra. In a study by Anne-Kathrin Tausche  et al (Framingham Study), 9.2% of men and 0.4% of women had (2) hyperuricemia, and 19% of these suffered from gout. In Normative Aging Study (17) Incidence of gout increase exponentially with serum uric acid level 2% serum uric acid level 6 mg /dl 4% with 8mg/dl, 30% with s acid 10 mg dl (17) Talking with well-known orthopedic and medical specialist’s classic topaceous gout is not seen in KPK commonly. Podagra with raised serum uric acid have been seen in KPK practice. Most of patients of Oligo arthritis with border line high uric acid are being frequently labeled as gout and over estimating the prevalence.

Compounding factor is the concept that normal uric acid level is possible with gout. This fact was conflicted in this study by the fact that all patients with serum uric acid within normal range were completely free of gout.

Though there is much debate on benefit of drug Allopurinol to lower uric acid, with benefit to improve endothelial function(16) No one in this study suffered from ischemic heart disease though definite proof of non-ischemic label without coronary angiography is not 100 % accurate. This is according to a Meta-Analysis of 13 studies by Seo Young Kim, MD which has shown heterogeneous results with P value of high insignificance .This study is based on very clinical base supported by non- invasive tests like ECG and echocardiography , while study by Seo Young Kim is based on detail analysis, adjusting for compounding variables like hypercholesterolemia, smoking etc.,
CONCLUSION:
Hyperuricemia and gout are less prevalent in KPK Mardan (PAK) as compared to West. Classic Topaceous gout is also very rare, though definitely present. Genetic studies and Joint fluid for microscopy are mandatory to label a patient of arthritis as gout even with hyperuricemia, to void over diagnosis of gout. Experience with imaging and ultrasound is limited, still ultrasound and simple light microscopy can be started as base line before proceeding to polarized microscopy, CT, dual energy CT (DECT) imaging and genetic studies. DECT is very useful in early gout and can detect early gouty tophi in soft tissue, periarticular tissue and early bone erosions.

REFERENCES
2. Anne-Kathrin Tausche, Dr. med.,*, 1 Tim L. Jansen, Dr. med., 3 Hans-Egbert Schröder, Prof. Dr. med., 1 Stefan R. Bornstein, Prof. Dr. med., 1 Martin Aringer, Prof. Dr. med., 1 and Ulf Müller-Ladner, Prof. Dr. med. 2 Gout—Current Diagnosis and Treatment. Dtsch Arztebl Int. 2009 Aug; 106(34-35): 549–555.
Prevalence of Ocular Tuberculosis amongst Patients Suffering from Pulmonary Tuberculosis in Gulab Devi Hospital Lahore.

Sana Rafaqat, MBBS1 Mohsin Nawaz MBBS2 Irum Masood MBBS3

ABSTRACT

Objective: The objective of this study was to determine the prevalence of presumed ocular tuberculosis among diagnosed pulmonary tuberculosis patients.

Method: It was a cross-sectional study in which 150 patients who were labeled to have active pulmonary tuberculosis underwent history and ocular examination prior to anti-tubercular therapy. The diagnosis of presumed ocular tuberculosis was made when clinical signs of tuberculosis (TB) uveitis were found in the participants. Lesions were documented and tallied, after which statistical analysis was performed.

Results: 10 of the 150 pulmonary TB patients (6.8% prevalence: 95% CI 2.78% to 13.5%) included in the study showed signs of ocular inflammation. There was no sex and age predilection between those with presumed ocular TB and those without. Posterior uveitis alone was observed in three of the patients (two cases of retinal vasculitis and one case of choroidal tubercle). Non-granulomatous anterior uveitis with posterior synechiae alone was observed in two patients. One patient had combined non-granulomatous anterior uveitis with posterior synechiae and choroidal tubercle. One had combined granulomatous anterior uveitis with posterior synechiae and choroidal tubercle. Intermediate uveitis was not noted among the patients.

Conclusion: Presumed ocular tuberculosis should be considered among patients with diagnosed pulmonary tuberculosis. Common ocular lesions found in the study include choroidal tubercle and non-granulomatous anterior uveitis with posterior synechiae.

Keywords: Presumed ocular tuberculosis, Prevalence, Anti-tubercular therapy, Extra-pulmonary

INTRODUCTION:

According to the World Health Organization, the Pakistan ranks ten in the world for the number of cases of tuberculosis (TB) and has the highest number of cases per head in Southeast Asia. Almost two thirds of Pakistani have TB, and up to five million people are infected yearly [1] making it a major public health concern in the country. TB in the Pakistan ranked fifth in the 10 leading causes of death and fifth in the 10 leading causes of illness, with an incidence reported to be 6.3 per thousand per year (culture positive) and 2.6 per thousand per year (smear positive) [2]. The increased incidence has economic repercussions not only for the patient’s family, but also for the country, with most TB patients belonging to the economically productive age group (15 to 54 years old) [1].

Though more commonly infecting the pulmonary system, it can also manifest as extra-pulmonary TB (EPTB) affecting the gastrointestinal, skeletal, cardiovascular, genito-urinary, and nervous systems including the eye. Diagnosis of these extra-pulmonary forms is difficult and is often determined by the exclusion of other conditions [3]. According to some report that it now constitutes a greater proportion of all patients with TB, especially in immune-compromised individuals and the elderly.

Ocular tuberculosis should be considered among patients with diagnosed pulmonary tuberculosis. Common ocular lesions found in the study include choroidal tubercle and non-granulomatous anterior uveitis with posterior synechiae.

TB in the eye can manifest in a myriad of ways, and the definitive diagnosis can be daunting due to the difficulty of getting ocular samples for microbiologic or histologic evaluation. High awareness of ocular manifestations is a must for an ophthalmologist as he or she may be the first to diagnose TB [4]. Ocular TB has always been considered rare, yet its prevalence has varied widely across time, patient populations, and geography. Some studies include rates of ocular involvement among patients with pulmonary TB (PTB).

Ocular tuberculosis (OTB) results from the
haematogenous dissemination of mycobacteria and may affect virtually any intraocular tissue. Clinical features depend on the specific tissue involved and may be due to both, direct tissue infection or due to hypersensitivity reactions. The characteristic findings include tubercles, tuberculomas and serpiginous-like choroiditis. These represent direct choroidal infection via the hematogenous route. Less common lesions include lupus vulgaris of the eyelids, conjunctivitis, corneal ulcers and phlyctenulosis, and scleritis. Neuro-ophthalmological lesions include orbital apex syndrome, disc edema and sixth nerve palsies.

Non-invasive ocular examinations to detect ocular tuberculosis have several potential advantages. They may suggest a diagnosis in a subset of patients, thus allowing for a more focused investigational approach. This may be more important in immune-compromised patients who tend to have abnormal systemic findings (absence of fever) or investigational findings (mantoux tests readings or unusual chest radiography). These findings may delay a diagnosis of systemic tuberculosis with the attendant risks of poor outcomes.

Conclusion: Presumed ocular tuberculosis should be considered among patients with diagnosed pulmonary tuberculosis. Common ocular lesions found in the study include choroidal tubercle and non-granulomatous anterior uveitis with posterior synechiae.

MATERIALS AND METHODS:

This was a cross sectional study of ocular TB in Gulab Devi Hospital from January-May 2016. Gulab Devi is a tertiary referral center and a teaching hospital in Lahore. It has a total number of 774 beds with 72% bed occupancy rate and caters about 33,000 outpatients monthly. We reviewed the list of notified TB cases under respiratory-TB and patients diagnosed with ocular TB were included in the review. Demographic data of patient’s age, gender and race was collected. We reviewed their medical records and documented all clinical data in a confidential manner.

All patients underwent both ophthalmic and medical evaluation. Ophthalmic evaluation included best-corrected visual acuity (BCVA), Goldman applanation tonometry, gonioscopy and slit-lamp examination for anterior segment and fundus. Anterior segment imaging, fundus photography, B-scan ultrasonography, optical coherence tomography (OCT) of the macula and computed tomography (CT) scan of the brain was done in selected cases.

Patients presented with uveitis were investigated to exclude autoimmune diseases and other common infectious aetiology including sarcoidosis, toxoplasmosis and syphilis. They underwent a series of routine laboratory blood tests, peripheral blood count, calcium, sodium, potassium, chloride, liver enzymes, urea and creatinine, erythrocyte sedimentation rate (ESR), C-reactive protein, glucose, serum angiotensin-converting enzyme, rheumatoid factor, antinuclear antibody, anti-double-stranded deoxyribonucleic-acid (anti-ds DNA), complements (C3/C4) and toxoplasma serology followed with sputum smear for detection of acid-fast bacilli (AFB), chest X-ray and Mantoux test. They were screened for human immunodeficiency virus (HIV) and syphilis. Cerebrospinal fluid analysis was done in a patient who had choroidal lesion and multiple cerebral abscess. Eye swab was taken in all patients who had eye discharge at presentation, and sent for culture and sensitivity test. Sample of pus and friable tissue from conjunctival abscess was also sent for culture. In patients with corneal ulcer, corneal scrapping specimen was sent for polymerase chain reaction (PCR) to detect presence of mycobacterial DNA. Tissue biopsy from conjunctival lesion was sent for histo-pathological examination (HPE) and TB PCR analysis. Biopsy of intraocular tissue or fluid was not done.

The diagnosis of presumed ocular TB was made based on the ophthalmic findings and laboratory results. Once diagnosed by ophthalmologist, patients were referred to respiratory physician for further physical assessment. Any concurrent pulmonary or other extra-pulmonary TB manifestations were evaluated. Patients were then started on anti-TB therapy.

The collected data were then analyzed. Data with numerical variables were described as the mean and standard deviation, while categorical data were expressed by frequency (n) and percentage (%).

RESULTS:

There were 150 patients who were recruited for the study and who underwent an ocular examination. The mean age was 51.5 years (range 5 to 88), and 62% were male. None of those found to have presumed ocular TB (POTB) presented with ocular findings on both eyes.

Majority of ocular findings of those found to have POTB (five eyes of seven people) were located in the posterior segment. Three eyes had a choroidal nodule. There were two cases of vascular sheathing consistent with retinal vasculitis, one having a large number of discrete, mostly peripapillary, blot hemorrhages. During the 4-week follow-up period of the three patients with choroidal tubercles, all showed partial clinical resolution with institution of ATT. The two patients exhibiting retinal vasculitis were lost to follow-up.

Of the 10 patients with presumed ocular TB, 6 had anterior segment involvement. Three exhibited non-granulomatous anterior uveitis with posterior or synechiae, one of whom had an incidental chronic peripheral corneal degeneration on the involved eye. Cervical lymphadenopathy was found in two of these 6 patients. One presented as granulomatous anterior uveitis with posterior synechiae and severe vitritis which was eventually managed with pars plana vitrectomy. Polymerase chain reaction (PCR) testing of
Prevalence of Ocular Tuberculosis amongst Patients Suffering from Pulmonary Tuberculosis in Gulab Devi Hospital Lahore.

Vitreous aspirate yielded a negative result. All anterior uveitic lesions showed at least partial clinical resolution with institution of ATT. No signs of intermediate uveitis were found. Results are summarized in Table 1.

Table 1: Profile of patients labeled to have presumed ocular TB

<table>
<thead>
<tr>
<th>Patient age</th>
<th>Sex</th>
<th>Finding</th>
<th>VAI</th>
<th>VAF</th>
<th>ATT Response after 4 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>Female</td>
<td>OS: non-GAU with posterior synechiae, choroidal tubercle; grade 2 cataract, L-cervical lymphadenopathy</td>
<td>0.1/0.050</td>
<td>0.1/0.1</td>
<td>Partial</td>
</tr>
<tr>
<td>68</td>
<td>Male</td>
<td>OS: GAU, choroidal tubercle, posterior synechiae</td>
<td>0.4/0.025</td>
<td>0.4/0.025</td>
<td>Partial</td>
</tr>
<tr>
<td>56</td>
<td>Male</td>
<td>OS: choroidal tubercle</td>
<td>0.67/0.67</td>
<td>0.67/0.67</td>
<td>Partial</td>
</tr>
<tr>
<td>37</td>
<td>Female</td>
<td>OS: non-GAU, posterior synechiae, L-cervical lymphadenopathy</td>
<td>0.67/0.40</td>
<td>0.67/0.50</td>
<td>Partial</td>
</tr>
<tr>
<td>76</td>
<td>Male</td>
<td>OS: retinal vasculitis</td>
<td>0.40/0.40</td>
<td>Lost to follow-up</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Male</td>
<td>OD: non-GAU, posterior synechiae</td>
<td>1/1</td>
<td>1/1</td>
<td>Partial</td>
</tr>
<tr>
<td>65</td>
<td>Male</td>
<td>Retinal vasculitis</td>
<td>0.40/0.67</td>
<td>Lost to follow-up</td>
<td></td>
</tr>
</tbody>
</table>

Multiple response: Patients 1 and 2 had combined findings in the anterior and posterior segments of the eye; VA best-corrected visual acuity (BCVA) prior to ATT; VAF, BCVA after 4 weeks of ATT; GAU, granulomatous anterior uveitis; OS, left eye; OD, right eye; IOP of involved eye significantly lower (>5 mmHg difference). 10 out of the 150 pulmonary TB patients (6.8% prevalence: 95% CI 2.78% to 13.5%) included in the study showed signs of ocular inflammation. There was no sex and age predilection between those with presumed ocular TB and those without. Posterior uveitis alone was observed in three of the patients (two cases of retinal vasculitis and one case of choroidal tubercle). Non-granulomatous anterior uveitis with posterior synechiae alone was observed in two patients. One patient had combined non-granulomatous anterior uveitis with posterior synechiae and choroidal tubercle. One had combined granulomatous anterior uveitis with posterior synechiae and choroidal tubercle. Intermediate uveitis was not noted among the patients.

Another study was conducted in India by Sulil.M in 2013 according to that Between February and April 2012, 47 HIV/MDR-TB co-infected patients (including three patients with extensively drug-resis-
tand TB) were evaluated. Sixty-four per cent were male, mean age was 39 years (standard deviation: 8.7) and their median (IQR) CD4 count at the time of evaluation was 264 cells/μL (158–361). Thirteen patients (27%) had detectable levels of HIV viremia (>20 copies/ml).

Overall, examination of the anterior segments was normal in 45/47 patients (96%). A dilated fundus examination revealed active ocular inflammatory disease in seven eyes of seven patients (15.5%, 95% Confidence Intervals (CI); 5.1-25.8%). ‘These included five eyes of five patients (10%) with choroidal tubercles, one eye of one patient (2%) with presumed tubercular chorioretinitis and one eye of one patient (2%) with evidence of presumed active CMV retinitis. Presumed ocular tuberculosis was thus seen in a total of six patients (12.7%, 95% CI; 3.2-22.2%). Two patients who had completed anti-TB treatment had active ocular inflammatory disease, in the form of choroidal tubercles (two eyes of two patients). Inactive scars were seen in three eyes of three patients (6%). Patients with extrapulmonary TB and patients <39 years old were at significantly higher risk of having ocular TB Risk Ratio: 13.65 (95% CI: 2.4-78.5) and 6.38 (95% CI: 1.05-38.8) respectively.[19]

A study was conducted in England by Fuegeria. L in 2016 according to that the currently recommended method for ocular TB diagnosis is screening for tuberculosis in any uveitis of unknown etiology, recurrent or not responding to conventional therapy; in ocular findings highly suggestive of ocular TB and before immunosuppression (particularly biologic agents). TB screening in these cases includes tuberculosis skin testing and interferon gamma testing, along with complete medical history, ophthalmologic evaluation and chest imaging. Positively screened patients should be treated for active tuberculosis with 4 drugs (isoniazid, rifampicin, pyrazinamide and ethambutol) for 6–9 months. Patients should be reviewed at the end of the initiation phase (two months) and at the end of the overall treatment (6–9 months).[20]

CONCLUSION: Ocular tuberculosis should be considered among patients with diagnosed pulmonary tuberculosis. Common ocular lesions found in the study include choroidal tubercle and non-granulomatous anterior uveitis with posterior synechiae.

REFERENCES:
1. Department of Health of the Philippines. National Tuberculosis Control Program.
Incidence of Thyroid Dysfunction & its Co-relation with Diabetic Retinopathy

Naila Obaid FCPS¹, Asfandyar Asghar FCPS Fellow (VR),² Amna Rizwan MBBS³, Sumayya Ali Khan⁴, Prof. B.A.Naeeem FCPS⁵

Department of Ophthalmology, Foundation University Medical College & Fauji Foundation Hospital, Rawalpindi

ABSTRACT
Objective: To evaluate the incidence of thyroid dysfunction in patients with Diabetic Retinopathy and see the correlation with stage of diabetic retinopathy. It was a cross sectional descriptive study in the Department of Ophthalmology, Fauji Foundation Hospital, Rawalpindi.

Methods: This study was conducted in Department of Ophthalmology, Fauji Foundation Hospital, Rawalpindi, from 1st September 2016 to 30th March 2017. All the cases of Diabetic Retinopathy were included except those who lost follow up. A detailed history with complete ocular was carried out. All the patients were investigated for Glycosylated Hemoglobin (HbA1c), total tri-iodo-thyrone (T3), total thyroxine (T4), and thyroid stimulating hormone (TSH).

Results: A total number of 82 patients with non-proliferative and proliferative diabetic retinopathy were studied. There were 27 patients of proliferative Diabetic Retinopathy (PDR) (32.9%) and 55 patients of non-proliferative Diabetic Retinopathy (NPDR) (67%). 25 patients out of total 82 patients had deranged thyroid hormone and TSH levels (30.48%). Among these 25 cases, 13 cases had hypothyroidism, 6 cases had hyperthyroidism and 6 had low T3 syndrome (15.8%, 7.3% and 7.3% respectively). Out of total 27 cases of PDR, 8 cases had hypothyroidism, 6 cases had hyperthyroidism and 6 had low T3 syndrome (29.6%, 22.2% and 7.4% respectively). While in NPDR group, out of total 55 patients 5 had hypothyroidism (9.09%), 4 patients had low T3 syndrome (7.27%) and none of the patients had hyperthyroidism.

Conclusion: Thyroid dysfunction is found in significant number of patients with diabetic retinopathy. Thyroid function tests are more deranged in patients with proliferative diabetic retinopathy than non-proliferative diabetic retinopathy. Thyroid dysfunction may be another risk factor for progression of diabetic retinopathy, hence the thyroid screening in type 2 diabetic patients can favor better management of patients and prevent sight threatening complications of diabetic retinopathy.

Keywords: thyroid dysfunction, proliferative Diabetic Retinopathy, non proliferative Diabetic retinopathy

INTRODUCTION
Diabetic retinopathy (DR) is one of the major sight threatening micro vascular complications of Diabetes Mellitus. According to the International Diabetic Federation (IDF) database on Diabetics, Pakistan currently stands at number seven in the list of countries with the highest number of Diabetic cases. The Diabetic population in Pakistan was estimated at 6.9 million in 2007 and it is projected to reach 11.5 million by the year 2025 with Pakistan ranking 5th in the IDF list¹. DR is a major cause of blindness in around 4% of patients suffering from type-I Diabetes, and 1.6% of those suffering from type-II Diabetes.²³

Nearly one third of type 2 diabetic patients have deranged thyroid functions (30.48%), hypothyroidism being relatively more common (15.8%), as observed in type-I Diabetes. In advancing diabetic retinopathy, greater are the chances of thyroid dysfunction. Although there are no defined guidelines regarding screening of thyroid dysfunction in diabetic retinopathy patients, there is a need for systematic approach for thyroid functioning in order to prevent sight threatening complications and better management of the diabetic retinopathy.

With increasing prevalence of diabetes, assessing modifiable risk factor of diabetic retinopathy is important to manage it effectively and promptly. Timely diagnosis and treatment can limit threat of permanent visual loss. Association between diabetic retinopa-
thy with duration of diabetes, poor glycemic control, dyslipidemia and elevated blood pressure are already found in various studies. The frequency of thyroid dysfunction in diabetic patients is higher than that of the general population, the most common dysfunction being subclinical Hypothyroidism (SCH). Prevalence of SCH in diabetes varies between 2 and 17%. Higher incidence of thyroid dysfunction seen in individuals above 65 years.

Association between diabetic retinopathy and subclinical hypothyroidism is documented in only few studies in recent literature. None of the studies are conducted on incidence in our country we thus conducted the present study to determine the frequency of thyroid dysfunction in diabetic retinopathy patients and to assess correlation of stage of Retinopathy and thyroid dysfunction.

**MATERIAL & METHODS**

This cross sectional descriptive study was carried out by us at the Department of Ophthalmology, Fauji Foundation Hospital from September 2016 to March 2017. All the patients with Diabetic Retinopathy (DR) at presentation were included in study. Those patients who were diagnosed for first time and those already getting treatment for DR.

**Inclusion criteria:** All patients with Type 2 diabetes mellitus having any stage of the Diabetic Retinopathy.
1. From age 40 to 90 years
2. Undergoing treatment for DR
3. All stages of DR (NPDR to PDR)
4. No previous clinical history of thyroid disease

**Exclusion criteria:**
1. Patients with Liver disease (gives falsely high TSH levels)
2. Patients taking thyroid hormones, after thyroidectomy or radioactive iodine therapy.
3. Patients already on thyroid medicines

Patients were explained the nature of the study and prior informed consent was taken from every patient before enrolment. A detailed history of patient was taken regarding diabetes, its control, medicines taken, insulin injections, any ocular intervention or surgery. A comprehensive ocular examination was done with special emphasis on fundus examination. Visual acuity assessment with Snellen visual acuity was documented in each case. All the patients were examined under the slit lamp in detail with anterior and posterior segment examination. Tonometry was done in all patients. The level of severity of retinopathy was determined by indirect ophthalmoscopy for a pan retinal view, and stereoscopic slit lamp biomicroscopy of the disc and macula using +90D lens. Based on ETDRS criteria patients were graded according to their severity of retinopathy into mild NPDR, moderate NPDR, severe NPDR, very severe NPDR, early PDR and high risk (HR) PDR. Out of these severe NPDR and very severe NPDR were included in single group of severe NPDR. Early PDR and high risk PDR were considered in single group of PDR. So we had basically two groups of retinopathy patients NPDR (moderate and severe) and PDR. Mild NPDR patients lost follow up and most of them didn’t get their TFTs done so they were excluded from study.

All the patients were advised thyroid function tests (TFTs), including three main parameters, total tri-iodo-thyronine (T3), total thyroxine (T4), and thyroid stimulating hormone (TSH). Serum free T4 and TSH was obtained in all patients. To perform these thyroid test we have machine of Roche & Cobaf E401. 3 ml blood sample of patient is taken in plain glass tube, it is centrifuged in centrifugation machine. This separates the serum which is placed in sample cup and introduced in Roche and it gives the result in one hour. The normal reference range considered are for free T4 (0.9-26) pg/ml, T3 (1.3-3) pg/ml and for TSH (0.32-4.5)μIU/ml. Patients having TSH value >4.5μIU/ml in presence of normal free T4 value were considered as having subclinical hypothyroidism. Patients with low TSH values and raised T4 they were considered hyperthyroid. Those patients having low T3 levels with normal TSH and T4 levels they were having low T3 syndrome shown in table [table 1]. Patients having TSH and free T4 value within normal reference range were euthyroid patients. Thyroid dysfunction in correlation with different stages of diabetic retinopathy were also assessed. HbA1c levels were also analyzed to assess the diabetic control of the patients. Statistical analysis was done through SPSS version 21 was used.

<table>
<thead>
<tr>
<th>TSH</th>
<th>T4</th>
<th>T3</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Normal</td>
<td>Normal</td>
<td>Hypothyroidism</td>
</tr>
<tr>
<td>Low</td>
<td>Normal</td>
<td>Normal</td>
<td>Hyperthyroidism</td>
</tr>
<tr>
<td>Normal</td>
<td>Normal</td>
<td>Low</td>
<td>Low T3 syndrome</td>
</tr>
</tbody>
</table>

**RESULTS**

A total of 82 cases of Diabetic Retinopathy (DR) were included in this study. The age range of the participants was from 40 to 87 years with a mean of 60.96 ± 9.195 years. The mean duration of diabetic retinopathy in our cases was 12.83±6.184 years with a range of 1 to 30 years as shown in table [table 2]. All the patients were female according to entitlement of patients in Fauji Foundation hospital. In this study there were two main groups of patients 27 patients of proliferative Diabetic Retinopathy (PDR) (32.9%) and 55 patients of non-proliferative Diabetic Retinopathy (NPDR) (67 %), [figure 1]. Among these 55 patients of NPDR, majority of the patients 49 had moderate NPDR (NPDRm) (59.8%) and only 6 patients had severe NPDR (NPDRs) (7.3%). The stage of Diabetic Retinopathy in this study were classified according to ETDRS classification of Diabetic Retinopathy.

All the patients were evaluated for T3,T4 and...
TSH levels. 25 patients out of total 82 patients had deranged thyroid hormone and TSH levels (30.48%). Among these 25 cases, 13 cases had hypothyroidism, 6 cases had hyperthyroidism and 6 had low T3 syndrome (15.8 %, 7.3 % and 7.3 % respectively) shown in table [table 3]. when the laboratory results of thyroid hormones and TSH were compared with stage of diabetic retinopathy, it was found out that out of total 27 cases of PDR; 8 cases had hypothyroidism, 6 has hyperthyroidism and 2 had low T3 syndrome (29.6%, 22.2 % and 7.4% respectively) while in NPDR group, out of total 55 patients 5 had hypothyroidism (9.09%), 4 patients had low T3 syndrome (7.27%) and none of the patients had hyperthyroidism as seen in table [table 4] Association of Diabetic Retinopathy with other parameters was also done. In this study Glycosylated Hemoglobin (HbA1c) levels were also evaluated. Glycosylated Hemoglobin (HbA1c) identifies average 3 months plasma glucose concentration which in turn shows diabetic control of the patient. In this study, majority of the patients had deranged HbA1C levels, 61 patients out of 82 had HbA1C levels raised (74.4%). Only 21 patients had normal levels (25.6%) as shown in table [table 5]. When the levels were seen individually in different stages of diabetic retinopathy it was found that 21 out of 27 patients of PDR, 35 out of 49 patients of moderate NPDR (NP-DRm) and 5 out of 6 patients of severe NPDR (NPDRs) had raised levels of HbA1c (77.8%) (71.4%) (83.3%) shown in table [table 6].

Table 2: Age of patients and duration of Diabetes

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Participant</td>
<td>82</td>
<td>40</td>
<td>87</td>
<td>60.96</td>
<td>9.195</td>
</tr>
<tr>
<td>Duration of diabetic retinopathy (in years)</td>
<td>82</td>
<td>1</td>
<td>30</td>
<td>12.83</td>
<td>6.184</td>
</tr>
</tbody>
</table>

Table 3: Thyroid Function Test results

<table>
<thead>
<tr>
<th>No of cases</th>
<th>%</th>
<th>T3</th>
<th>T4</th>
<th>TSH</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>15.8%</td>
<td>Normal</td>
<td>Normal</td>
<td>High</td>
<td>Hypothyroidism</td>
</tr>
<tr>
<td>6</td>
<td>7.3%</td>
<td>Normal</td>
<td>Normal</td>
<td>Low</td>
<td>Hyperthyroidism</td>
</tr>
<tr>
<td>6</td>
<td>7.3%</td>
<td>Low</td>
<td>Normal</td>
<td>Normal Low T3 syndrome</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Thyroid function tests and diabetic retinopathy

<table>
<thead>
<tr>
<th>Stage of DR</th>
<th>Hypothyroidism</th>
<th>Hyperthyroidism</th>
<th>Low T3 syndrome</th>
<th>Total</th>
</tr>
</thead>
</table>

Table 5: Glycosylated Haemoglobin levels

<table>
<thead>
<tr>
<th>HbA1c Level</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>21</td>
<td>25.6</td>
<td>25.6</td>
</tr>
<tr>
<td>Raised</td>
<td>61</td>
<td>74.4</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 1: stages of Diabetic Retinopathy

DISCUSSION

82 cases of Diabetic Retinopathy included in this study were of type 2 Diabetes mellitus. There are many studies of both type 1 and type 2 diabetes mellitus and their correlation with TFTs, but Furukawa et al3 studied correlation in type 2 diabetic patients only like our study. Our all patients were female, because in Fauji Foundation hospital ex-service men families are entitled. All the patients with moderate NPDR, severe NPDR and with proliferative diabetic retinopathy were included. There were 18 patients with mild NPDR but they lost follow up or didn’t get their investigations done, so they were excluded from study.

25 patients out of total 82 patients had deranged thyroid hormone and TSH levels (30.48%). Among these 25 cases, 13 cases had hypothyroidism, 6 cases had hyperthyroidism and 6 had low T3 syndrome (15.8 %, 7.3 % and 7.3 % respectively). In our study thyroid function tests were deranged in 25 patients out of 82 patients (30.48 %) which is comparable with the last highest recorded incidence of 29% by Ravishankar et al10 but incidence of our study is higher than previous studies Mansourina12 (18.1 %)3,12,3,4, and Hennessey (16.9 %)5. It is reported in old studies that thyroid dysfunction is more in females and Diabetic Retinopathy patients Vinu Vij10 et al.
While Kim BY\textsuperscript{11} observed that prevalence of severe diabetic retinopathy (severe non-proliferative diabetic retinopathy or proliferative diabetic retinopathy) was significantly higher in the subclinical thyroid dysfunction group than the Euthyroid group (32.8\% vs. 19.6\%, P = 0.036) which in other words is consistent with our study because in our study only PDR had NPDR patients are there and all are female.

In our study age of our patients ranged from 40 to 87 years(60.9\%69.195) which is the age group studied by Hennessey\textsuperscript{13} also. They analyzed that estimates for higher rates of subclinical hypothyroidism were consistently higher in older individuals (16.9\%) which is closely related to (15.8\%) subclinical hypothyroidism seen in this study. Our 13 out of 82 patients (15.8\%) had hypothyroidism, higher than reported by Jin Kui\textsuperscript{14} et al (10.9\%). In our study Low T3 syndrome was seen in 7.3% of patients which is almost consistent with 6.66% reported by Monthir\textsuperscript{15}.

In this study Glycosylated Haemoglobin (HbA1c) levels were also evaluated to assess the glycemic control of patients. majority of the patients 61 (74.4\%) had HbA1c level raised. Only 21 (25.6\%) patients had HbA1c level in normal limits. Jae\textsuperscript{16} also reported that poor glycemic control with raised HbA1c is associated with increased incidence of hypothyroidism. In all the previous studies they have observed hypothyroidism in patients with type 2 diabetes and in patients having diabetic retinopathy, but our study is different in the sense that we observed 6 cases of hyperthyroidism (7.3\%).

Yang GR\textsuperscript{17} et al in a case control study found that the prevalence of Subclinical hypothyroidism in the proliferative diabetic retinopathy group (27.3\%) was higher than that in the non-proliferative diabetic retinopathy group (17.4\%) and the results are consistent with our study hypothyroidism in PDR (29.6\%) is higher than in NPDR group (9.09\%). A major limitation in our study was small sample size. Patients of mild NPDR could not be included as they lost follow up or didn’t get their investigations done despite careful counseling. Only female patients were included which is another limitation. We found no patient of IDDM (type 1) with diabetic retinopathy in study duration, this could limit our results. Larger case studies need to be conducted for better understanding of correlation of risk factors with diabetic retinopathy.

**CONCLUSION**

Nearly one third of type 2 diabetic patients have deranged thyroid functions (30.48\%), hypothyroidism being relatively more common (15.8\%) more so in PDR patients. Hence more advanced the stage of diabetic retinopathy greater are the chances of thyroid dysfunction. Although there are no defined guidelines regarding screening of thyroid dysfunction in diabetic retinopathy patients, in view of the incidence there is need for systematic approach to thyroid testing to prevent sight threatening complications and better management of the diabetic retinopathy.

**REFERENCES**

**ABSTRACT**

**Background:** Myopia is a serious eye-health problem worldwide that particularly affects Asian populations. It is often complicated by retinal detachment, macular degeneration, glaucoma, and cataract, although the only systemic associations documented for myopia are higher risks of sleep disorders and depression.

**Objective:** To get to know about the sleep quality in high myopic children and adults.

**Method:** A cross sectional study was conducted in which surveyed 285 participants aged from 10 to 50 years with refractive error using a questionnaire containing the Pittsburgh Sleep Quality Index (PSQI) and Hospital Anxiety and Depression Scale (HADS). Regression analysis was done to get to know about relationship of sleep quality with high myopia.

**Results:** Children (<20 years) in the high myopia group exhibited the poorest scores ($P<0.01$), while the adults showed no such correlations. Subscales of PSQI and HADS in children disclosed that the high myopia groups had the shortest sleep duration ($P<0.01$), worst subjective sleep scores ($P<0.001$), and latest bedtime ($P<0.05$). Regression analyses in children significantly correlated myopic errors with PSQI ($P<0.05$), sleep duration ($P<0.01$), and bedtime ($P<0.01$). Sleep efficacy ($P<0.05$) and daytime dysfunction ($P<0.05$) were significantly better in contact-lens users compared to the respective non-user groups across all participants.

**Conclusion:** In conclusion, sleep quality in children was significantly correlated with myopic error, with the high myopia group worst affected.

**Keywords:** myopia, correlation, regression, sleep quality

**INTRODUCTION:**

Light focus in front of sentient layer of retina. Myopia is a serious eye-health problem worldwide that particularly affects Asian populations. It is often complicated by retinal detachment, macular degeneration, glaucoma, and cataract, although the only systemic associations documented for myopia are higher risks of sleep disorders and depression. Sleep problems in children are also an emerging issue in Asia, in which school performance has recently been associated with frequency of poor sleep. Indeed, nighttime exposure to ambient light and various lighting displays were proposed as environmental hazards for sleep. In terms of myopic progression, outdoor activity was recently established as an antmyopiogenic factor in addition to known ones including age, genetic predisposition, urbanization, and near work. The effect of school lighting on myopic progression is also a potential new factor under investigation.

Retinal damage and stretch are common pathological features in myopia, presumably causing damage to the intrinsically photosensitive retinal ganglion cells (ipRGCs), which were shown in animals to modulate ocular growth and myopia progression via photoreception of short wavelength light. Thus, this newly discovered non-visual photoreceptor in the RGC layer could potentially affect the risk of sleep disorders in myopic subjects with retinal damage such as glaucoma. Blindness and cataract have also been associated with disorders of sleep and circadian rhythms since these disorders also involve defects in light transmission and photoreception. However, despite myopia being a very common condition, the sleep status in such patients has not been extensively evaluated.

**Sleep quality in children is significantly correlated with myopia especially with high myopia where it is worst affected.** Sleep indices were generally better for contact lens users than non-users. The present results suggested that myopic error could potentially impact on the psychological profile of children.

**Myopia is a potential cause of sleep disorders**, with affected persons showing poor unaided vision accompanied by extensive retinal damage and neurological dysfunction although the status of ipRGCs in human myopia remains to be determined. In addition, dependence on optical correction devices (spectacles and contact lens) can cause serious distress, especially
for high myopic persons, because these devices become a lifeline to sight to effect quality of life (QOL). It is a known fact that sleep quality is worsened in depressive subjects; indeed, this could be the case with sleep quality in myopes with nonsurgical optical correction with declined QOL in general health and mental health.

MATERIAL AND METHOD:
This cross-sectional study surveyed 285 participants aged from 10 to 50 years with refractive errors using a questionnaire containing the Pittsburgh Sleep Quality Index (PSQI) and Hospital Anxiety and Depression Scale (HADS). A suitably constituted Ethics Committee of the Department of Ophthalmology of LRBT, confirmed the provisions of the declaration. Informed consent was obtained from all participants and the parents especially younger than 20 years. We analyzed 150 children under the age of 20 years and 150 adults aged 20–59 years. Visitors were invited to fill out questionnaires, which included the Pittsburgh Sleep Quality Index (PSQI) and the Hospital Anxiety and Depression Scale (HADS). Each questionnaire was self-administered and performed from July-October 2016. The PSQI and HADS scores were calculated according to separate algorithms and then analyzed. The normal range for sleep and mood habits is less than 6 for PSQI44 and less than 10 for HADS. Chronotype (mornings/ evenings) was evaluated based on two representative questions from established questionnaires (mornings/ evenings questionnaire), with possible scores ranging from 10 (far mornings) to 0 (far evenings).

Comprehensive ophthalmic examinations were performed by board-certified ophthalmologists and certified orthoptists. Visual acuity was examined after refractive examination with an auto-refractometer. Myopic refractive error was classified as high myopia (≤ −6.00D), mild myopia (−5.75D to −0.50D), and no myopia (−0.25D to +2.75D) according to a spherical equivalent of the higher myopic eye.

RESULT:
The result showed that children in the high myopia group exhibited the poorest PSQI scores (P<0.01, Kruskal-Wallis test, Mann-Whitney U test with Bonferroni correction), and rated more towards far-eveningness (P<0.05) Thus, this group showed the highest probability of sleep (PSQI>5) and mood (HADS>9) disorders. The same correlations to myopic error were not present among the older patients with myopia except for poor HADS scores in the high myopia group aged 20–39 years (P<0.001). Gender difference was not a significant factor in any age group.

Table 1: Subscales of PSQI and HADS in children.

<table>
<thead>
<tr>
<th>Myopic grade</th>
<th>High myopia</th>
<th>Mild myopia</th>
<th>No myopia</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep latency</td>
<td>0.80 ± 1.05</td>
<td>0.67 ± 0.84</td>
<td>0.82 ± 0.86</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

Table 2: Stepwise regression analysis between myopic errors and psychiatric parameters in children.

<table>
<thead>
<tr>
<th>PSQI global score</th>
<th>Sleep duration</th>
<th>HADS score</th>
</tr>
</thead>
<tbody>
<tr>
<td>β</td>
<td>P-value</td>
<td>β</td>
</tr>
<tr>
<td>Simple regression</td>
<td>0.137</td>
<td>0.015*</td>
</tr>
<tr>
<td>Multiple regression</td>
<td>0.060</td>
<td>0.443</td>
</tr>
</tbody>
</table>
were associated with less myopia. The association between sleep duration and myopia was not significant (p = 0.199) for total (night + midday) sleep.\textsuperscript{[23]}

**CONCLUSION:**

Sleep quality in children was significantly correlated with myopic error, with the high myopia group worst affected. Sleep indices were generally better for contact lens users than non-users. The present results suggested that myopic error could potentially impact on the psychological profile of children.

**REFERENCES:**


*****************************************************************************

New Rules for Promotion of Teaching Faculty in Medical Colleges in Pakistan.

Medical & Dental Council of Pakistan (PMDC) has announced new regulations based on research work and teaching experience for the fresh appointments as well as promotions in the medical institutions. But for fresh appointments, the regulations will come into force from August'2018. In order to promote research, the number of mandatory original articles for various posts of Asstt. Prof. Associate Prof and professors’ promotions have been increased.

After December 31, 2018, for Assistant Professors at least two original research papers in relevant subjects will be required for initial appointment. For promotion from Assistant to Associate professor, 5 original research papers with 5 years teaching experience will be mandatory. For promotion from Associate professor to Professor, at least 8 original research publications with 9 years of teaching experience will be required.

We need to be more focused on research work. Under the new rules, all the medical & dental institutions have been directed to establish Medical Education Department with a counseling cell with qualified and experienced faculty. It will play a pivotal role in steering the educational activities.

The faculty of medical colleges have also been redefined with latest skills and techniques. Since the medical education is being upgraded across the globe due to which there is a need to change the old discipline/subjects. It will also be ensured that holders of FCPS in clinical subjects will only be appointed for clinical faculty and in future, holders non-medical qualifications will not be appointed against Basic Medical Subjects.

*****************************************************************************
Association of Vitamin D with Myopia in Adults at University of Lahore Teaching Hospital

Qurat-ul-Ain MBBS1, Syed Umair Shah MBBS2, Hamza Tahir MBBS3

ABSTRACT:

Purpose: To investigate the association between serum vitamin D levels and myopia in young adults in LRBT Lahore.

Methods: A total of 285 individuals participated in this study. Ethnicity, parental myopia, and education status were ascertained by self-reported questionnaire. A comprehensive ophthalmic examination was performed, including post cycloplegic auto-refraction and conjunctival UV auto-fluorescence photography. Serum 25-hydroxyvitamin D3 concentrations were determined using mass spectrometry. The association between serum 25(OH)D3 concentrations and prevalent myopia was determined using multivariable logistic regression.

Results: Of the 285 participants, 25% had myopia. Myopic subjects had lower serum 25(OH)D3 concentrations compared to nonmyopic participants (median 67.6 vs. 72.5 nmol, P = 0.003). In univariable analysis, lower serum 25(OH)D3 concentration was associated with higher risk of having myopia (odds ratio [OR] for <50 vs. ≥50 nmol/L: 2.63; confidence interval [95% CI] 1.71–4.05; P < 0.001). This association persisted after adjustment for potential confounders, including age, sex, ethnicity, parental myopia, education status, and ocular sun-exposure biomarker score (adjusted OR 2.07; 95% CI 1.29–3.32; P = 0.002). Unadjusted blood levels of vitamin D were not significantly different between myopes (13.95 ± 3.75ng/ml) and non-myopes (16.02 ± 5.11ng/ml, p = 0.29).

Conclusions: Myopic participants had significantly lower 25(OH)D3 concentrations. The prevalence of myopia was significantly higher in individuals with vitamin D deficiency compared to the individuals with sufficient levels. Longitudinal studies are required to investigate whether higher serum 25(OH)D3 concentration is protective against myopia whether it is acting as a proxy for some other biologically effective consequence of sun exposure. However, adjusted for differences in the intake of dietary variables, myopes appear to have lower average blood levels of vitamin D than non-mypoes.

Key words: myopia, serum, biomarker, ethnicity, confounder, odd ratio

INTRODUCTION:

Worldwide the prevalence of myopia has been increasing,1 which varies across populations of different regions, ethnicities, and age groups. In some East Asian countries, myopia is an epidemic, with as many as 80% of children estimated to be myopic.2 Mild myopia is a relatively benign disorder, and blurred vision due to elongation of the eye can be corrected with spectacles, contact lenses, or laser refractive surgery. However, individuals with severe myopia are at increased risk of visual impairment and blindness due to associated conditions such as retinal detachment, retinal degeneration, and choroidal neovascularization.5 Myopia is also associated with increased risk of age-related eye diseases including cataract and glaucoma.6,7

Several possible mechanisms have been proposed for the development of refractive error. One of the earliest of these hypothesized that vitamin D may have a role in the development of myopia. In the 1930s and 1940s, several researchers investigated the association of myopia with vitamin D status both experimentally and clinically.9 More recently, low serum 25(OH)D levels were found to be associated with higher myopia prevalence.10

Myopic participants had significantly lower Vit D3 25(OH)D3 concentrations as compared to the normal individuals. It is further to investigate whether higher serum than 25 (OH)D3 , concentration is protective against myopia or a proxy for some other biological disorder resulting from sun exposure.

Epidemiological studies have identified a range of potential environmental risk factors for the development of myopia.11 The rapid increase in myopia prevalence in East Asian populations points to environmental or lifestyle factors sufficient to exert an effect in a short time period. Within these factors, decreasing
time spent outdoors has been identified as a potential explanatory lifestyle behavior. In the last decade, a number of observational studies have investigated the hypothesis that greater time spent outdoors is protective against myopia.\textsuperscript{12-15} This is supported by findings from a recent meta-analysis of cross-sectional studies that demonstrated an inverse association between time spent outdoors and myopia prevalence.\textsuperscript{16} These findings have been substantiated in prospective population-based studies and randomized controlled trials.\textsuperscript{17,18} In addition to the evidence of a well-grounded environmental contribution to risk, some variation in myopia and refractive error is accounted for by genetic factors.

In many populations, the main source of vitamin D is endogenous synthesis following sun exposure of the skin.\textsuperscript{21} Vitamin D deficiency is reportedly widespread,\textsuperscript{22} and population 25(OH)D levels have been decreasing over time,\textsuperscript{23} possibly due to behavioral changes to decrease sun exposure. Taken together, the environmental and genetic associations and the correlative temporal pattern provide compelling evidence that myopia risk is linked to vitamin D-related factors.

Previous refractive error studies did not take account of individual ocular and nonocular sun exposure when exploring the relationship of myopia and vitamin D levels. The purpose of our current study was to examine the association between serum 25(OH)D concentrations and the prevalence of myopia, adjusting for potential confounders including a marker of ocular sun exposure, in a large cohort of young adults of mainly Northern European ancestry but with a subset of East Asian ancestry. Hence the purpose of this study is to get to know about association of vitamin D with myopia.

**MATERIAL AND METHODS:**

A cross-sectional study was done in July-October 2017 in which 285 participants were included in this study. Each participant completed a questionnaire providing socio-demographic data and information on current education status (studying part- or full-time) and parental myopia, that is, whether one or both parents were myopic or short-sighted. Individuals were asked to report their time spent outdoors and had four possible responses to the question “In the summer, when not working at your job or at school, what part of the day do you spend outside?”: none, $\leq \frac{1}{4}$ of the day, approximately half of the day, and $>$ $\frac{3}{4}$ of the day. “None” and “$\leq \frac{1}{4}$ of the day” groups were combined due to low numbers in the “none” category. Participants provided a fasting blood sample for analysis of serum 25(OH)D concentration to get to know about vitamin D deficiency.

We defined vitamin D status as being sufficient when concentrations of serum 25(OH)D3 were $\geq 75$ nmol/L, insufficient when they were 50 to 74.9 nmol/L, and deficient when they were $< 50$ nmol/L. 32 Differences between categorical variables were assessed with $\chi^2$ tests. We used a $\chi^2$ test for trend to assess a possible dose–response relationship with myopia prevalence across categories of vitamin D status.

A simple linear regression model was generated to describe the relationship between levels of 25(OH)D3 and MSE using the least squares method. We used simple logistic regression to estimate the odds ratios (OR) and confidence intervals (95% CI) of myopia prevalence in relation to each covariate, testing for trend by replacing categorical predictors with a single predictor, taking category rank scores. A $P$ value $< 0.05$ was considered statistically significant. A multivariable logistic regression model was constructed to assess the association between myopia prevalence and 25(OH)D3 concentration (or vitamin D status) while adjusting for age, sex, and other covariates identified as being significant in variable analysis.

Blood level of vitamin D was measured using liquid chromatography/mass spectroscopy.

**RESULTS:**

The result shows that in 285 participants who attended an eye examination, 16% participants did not have a 25(OH)D3 level measurement. Serum 25(OH)D3 concentration and potential confounders including age, sex, ethnicity, parental myopia, education, and ocular sun exposure were available for 71 just over half 50.7% of these were female. Only participants had data for time outdoors and potential confounders. The mean (± standard deviation) age was 20.0 ± 0.4 years (range, 18.3–25 years). Of the 285 participants, 88.5% reported their time spent outdoors during summer. Of these, 48.5% spent less than a quarter of an average summer day outside; 32% spent approximately half of their day outside; and 11.8% spent the majority of their day outside. Serum 25(OH)D3 concentration was lower in females (70.9 nmol/L; IQR = 56.1–84.8) compared to females (71.7 nmol/L [IQR = 58.6–85.2]; $P = 0.015$).

Table: 1 The Demographic characteristics of the study participants

<table>
<thead>
<tr>
<th>Sex, male</th>
<th>Myopic Participants, n (%)</th>
<th>Nonmyopic Participants, n (%)</th>
<th>$P$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education (currently studying)</td>
<td>53.8</td>
<td>49.7</td>
<td>0.328</td>
</tr>
<tr>
<td>Parental myopia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neither parent</td>
<td>56.6</td>
<td>77.1</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>One parent</td>
<td>29.4</td>
<td>17.4</td>
<td></td>
</tr>
<tr>
<td>Both parents</td>
<td>14.0</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>Time spent outdoors during summer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $\frac{1}{4}$ of day</td>
<td>56.9</td>
<td>45.8</td>
<td>0.020</td>
</tr>
<tr>
<td>$\frac{1}{2}$ day</td>
<td>34.2</td>
<td>41.4</td>
<td></td>
</tr>
<tr>
<td>More than $\frac{3}{4}$ of day</td>
<td>8.9</td>
<td>12.8</td>
<td></td>
</tr>
<tr>
<td>Vitamin D status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deficient</td>
<td>32.7</td>
<td>12.5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Insufficient</td>
<td>45.3</td>
<td>42.7</td>
<td></td>
</tr>
<tr>
<td>Optimal</td>
<td>31.8</td>
<td>46.4</td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Significant univariate dietary differences between myopes and non-myopes.

<table>
<thead>
<tr>
<th>Dietary Nutrient</th>
<th>Myopes</th>
<th>Non-Myopes</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber (g)</td>
<td>14.6 ± 3.72</td>
<td>9.36 ± 3.00</td>
<td>0.008</td>
</tr>
<tr>
<td>Copper (mg)</td>
<td>0.88 ± 0.17</td>
<td>0.63 ± 0.32</td>
<td>0.007</td>
</tr>
<tr>
<td>Natural folate (µg)</td>
<td>138 ± 57.9</td>
<td>130 ± 48.4</td>
<td>0.044</td>
</tr>
<tr>
<td>Magnesium (mg)</td>
<td>220 ± 51.7</td>
<td>163 ± 41.9</td>
<td>0.017</td>
</tr>
<tr>
<td>Solid food weight (g)</td>
<td>713 ± 173</td>
<td>530 ± 188</td>
<td>0.027</td>
</tr>
<tr>
<td>Carbohydrate (g)</td>
<td>200 ± 41.9</td>
<td>182 ± 34.9</td>
<td>0.34</td>
</tr>
<tr>
<td>Sugars—Total (g)</td>
<td>97.6 ± 28.5</td>
<td>96.9 ± 25.8</td>
<td>0.82</td>
</tr>
<tr>
<td>Food folate (µg)</td>
<td>324 ± 71.6</td>
<td>320 ± 100</td>
<td>0.73</td>
</tr>
<tr>
<td>Total folate/folic acid</td>
<td>433 ± 99.1</td>
<td>453 ± 160</td>
<td>0.62</td>
</tr>
</tbody>
</table>

**Interpretation:** Each of the variables in Tables associated with either vitamin D or myopia was evaluated in the multivariate regression model with blood level of vitamin D as the dependent variable. The terms in the model were chosen through a backward selection process that placed all terms in an initial model, then removed terms one-by-one beginning with the least significant term. Terms remained in the model if their removal resulted in a significantly poorer fit to the data. While this approach to model fitting might be considered more aggressive than a traditional forward stepwise approach, it should be seen as exploratory concerning the limited literature on nutrition, particularly vitamin D, and myopia. Total sugar (rather than carbohydrate) and food folate (rather than total folate) remained significantly related to blood levels of vitamin D. Vitamin B₉ was not significant in this multivariate model. Calcium became significantly related to blood levels of vitamin D if placed all terms in an initial model, then removed terms one-by-one beginning with the least significant term, but dietary vitamin D was still not significant. Again in exploratory modeling, each remaining dietary variable was assessed one-by-one by placement in a multivariate model alongside total sugar, food folate, and calcium. Theobromine was significantly related to blood levels of vitamin D in the multivariate model with total sugar and food folate in contrast to its lack of significance as a univariate term, but dietary vitamin D was still not significant. In a multiple regression model, each remaining dietary variable was assessed one-by-one by placement in a multivariate model alongside total sugar, food folate, and calcium. Theobromine was significantly related to blood levels of vitamin D in this multivariate model. As a single variable, theobromine was not significantly correlated with blood level of vitamin D (p = 0.30) nor was it different between myopes and non-myopes (p = 0.26).

**DISCUSSION:**

Of the 285 participants, 25% had myopia. Myopic subjects had lower serum 25(OH)D₃ concentrations compared to non-myopic participants (median 67.6 vs. 72.5 nmol/L, p = 0.003). In univariable analysis, lower serum 25(OH)D₃ concentration was associated with higher risk of having myopia (odds ratio [OR] for <50 vs. ≥50 nmol/L: 2.63; confidence interval [95% CI] 1.71–4.05; P = 0.001). This association persisted after adjustment for potential confounders, including age, sex, ethnicity, parental myopia, education status, and ocular sun-exposure biomarker score (adjusted OR 2.07; 95% CI 1.29–3.32; P = 0.002). Unadjusted blood levels of vitamin D were not significantly different between myopes (13.95 ± 3.75ng/ml) and non myopes (16.02 ± 5.11ng/ml, p = 0.29). This association could be evidence of an underlying biochemical mechanism between serum 25(OH)D concentrations and myopia and explain previous findings that greater time spent outdoors is associated with reduced risk of myopia development.

A study was conducted by Jeremy.A in US at 2016 according to that Total vitamin D and D₃, but not D₂, levels were higher in children who spent more time outdoors (mean [95% confidence interval (CI)] vitamin D in nmol/L: Total, 60.0 [59.4–60.6] vs. 56.9 [55.0–58.8], P = 0.001; D₃, 55.4 [54.9–56.0] vs. 53.0 [51.3–54.9], P = 0.014; D2, 5.7 [5.5–5.8] vs. 5.4 [5.1–5.8], P = 0.23). In models including both time outdoors and sunlight-exposure-related vitamin D, there was no independent association between vitamin D and incident myopia (Total, HR = 0.83 [0.66–1.04], P = 0.11; D₃, HR = 0.89 [0.72–1.10], P = 0.30), while time outdoors retained the same strong negative association with incident myopia as in unadjusted models (HR = 0.69 [0.55–0.86], P = 0.001).[16]

Another study was conducted by Donald.0 in 2011 according to that Unadjusted blood levels of vitamin D were not significantly different between myopes (13.95 ± 3.75ng/ml) and non myopes (16.02 ± 5.11ng/ml, p = 0.29), nor were the hours spent outdoors (myopes = 12.9 ± 7.8 hours; non-myopes = 13.6 ± 5.8 hours; p = 0.83). In a multiple regression model, total sugar and folate from food were negatively associated with blood vitamin D, while theobromine and calcium were positively associated with blood vitamin D. Myopes had lower levels of blood vitamin D by an average of 3.4ng/ml compared to non-myopes when adjusted for age and dietary intakes (p = 0.005 for refractive error group, model R² = 0.76). Gender, time outdoors, and dietary intake of vitamin D were not significant in this model.[17]

Alternatively, the 25(OH)D₃ concentration could be simply a biomarker of sun exposure, with some other non-vitamin D element being a protective factor. Although it might be suggested that our results reflect reverse causality, whereby myopic young adults prefer to spend more time indoors and thus have lower self-reported time outdoors and lower 25(OH)D₃ levels, this explanation is not supported by the findings from the study of Jones-Jordan et al that was conducted in Japan 2016 in that prospective study, sports/outdoor activities were decreased in myopic subjects 3 years before onset, thus pointing to a causal relationship between outdoor exposure and myopia development.[21] Hence, the results of the present study should not be interpreted in the sense of reflecting reverse causality. Our results are consistent with previous findings of environmental or demographic risk factors for myopia including Asian ethnicity, history of parental myopia, higher education, lower levels of CUVAF, and less time spent outdoors.

Similarly a study was conducted by Sehan.y in 2014 according to that of the 946 participants, 221 (23.4%) had myopia (n = 725 nonmyopic). Myopic subjects had lower serum 25(OH)D₃ concentrations...
Association of Vitamin D with Myopia in Adults at University of Lahore Teaching Hospital

compared to nonmyopic participants (median 67.6 vs. 72.5 nmol, \( P = 0.003 \)). In univariable analysis, lower serum 25(OH)D3 concentration was associated with higher risk of having myopia (odds ratio [OR] for <50 vs. ≥50 nmol/L: 2.63; confidence interval [95% CI] 1.71–4.05; \( P < 0.001 \)). This association persisted after adjustment for potential confounders, including age, sex, ethnicity, parental myopia, education status, and ocular sun-exposure biomarker score (adjusted OR 2.07; 95% CI 1.29–3.32; \( P < 0.001 \)).

In conclusion, findings from this study suggest that there could be a biological association between the risk of myopia and reduced 25(OH)D3 concentrations within different populations. However it is important to bear in mind that the 25(OH)D3 could be acting as a proxy for ocular sun exposure, with the latter the important factor. Therefore, future studies prospectively investigating the effects of 25(OH)D3 concentrations and ocular sun exposure in the development of refractive error are warranted.

CONCLUSION:
Myopic participants had significantly lower 25(OH)D3 concentrations. The prevalence of myopia was significantly higher in individuals with vitamin D deficiency compared to the individuals with sufficient levels. Longitudinal studies are required to investigate whether higher serum 25(OH)D3 concentration is protective against myopia whether it is acting as a proxy for other biologically effective consequence of sun exposure. However, adjusted for differences in the intake of dietary variables, myopes appear to have lower average blood levels of vitamin D than non-myopes.

REFERENCES:
4. Ogawa A Tanaka M. The relationship between refractive errors and retinal detachment—analysis of 1,166 retinal detachment cases.
Prevalence of Dry Eyes in Diabetic Patients at Rehmat Hospital, Lahore

Maida Ahmed MBBS¹, Ramiesha Marium MBBS²
Muhammad Usama Luqman Meer MBBS³

ABSTRACT:
Aim: To find association of dry eye in diabetics.
Material and Method: A cross sectional study was conducted in which 100 patients were included and data was collected through structured questionnaire. Dry eye syndrome was assessed with tear break up time tests and Schirmer. Sample was collected through non probability convenient based sampling. Multiple linear regression model is used to check the association of diabetes with dry eye.
Results: Of 100 subjects, 60.3% suffer from dry eye syndrome. Although dry eye syndrome was more common in older and female patients, but there was significant association between dry eye syndrome and duration of diabetes (P = 0.01). Dry eye syndrome was more frequent in diabetic patients with DR (P = 0.04). 17.1% with mild non proliferative DR (NPDR), 11.1% with severe NPDR and 25.1% with proliferative DR (PDR). There were significant relation between age, sex and duration of diabetes and DR. The result illustrate that Diabetes is a major cause of dry eye.
Conclusion: Diabetes and dry eyes appeared to have a common association. Further studies need to be undertaken to establish an etiologic relationship. Dry eye was maximum present in insulin dependent patients and maximum diabetes patients in current context were women
Key words: Schirmer test, Diabetes, Diabetic retinopathy, Etiology, Regression

INTRODUCTION:
Dry eye syndrome is caused by a chronic lack of sufficient lubrication and moisture on the surface of the eye. Consequences of dry eyes range from subtle but constant eye irritation to significant inflammation and even scarring of the front surface of the eye[1]. In addition to being called dry eye syndrome, dry eye disease, or simply “dry eye,” alternative medical terms generally used to describe dryness and inflammation of the cornea. Symptoms of dry eye include burning sensation, itchy eyes, heavy eyes, fatigued eyes, sore eyes, dryness sensation[2].

In addition to these symptoms, dry eyes can cause inflammation and (sometimes permanent) damage to the surface of the eye[3]. Dry eye syndrome also can affect the outcomes of LASIK and cataract surgery.

Certain systemic diseases, such as diabetes, thyroid-associated diseases, lupus, rheumatoid arthritis and Sjogren’s syndrome contribute to dry eye problems. Diabetes mellitus (DM) has been identified as one of the leading systemic risk factors for DES. The reported prevalence of DES in diabetics is 15–33% in those over 65 years of age and increases with age and is 50% more common in women than in men. The incidence of dry eye is correlated with the level of glycated hemoglobin: the higher the level of glycated hemoglobin, the higher the incidence of dry eye[4].

Dry eyes is a common association in diabetics, especially in insulin dependent patients and it should be an integral part of the assessment in diabetics.

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar. Hyperglycaemia, or raised blood sugar, is a common effect of uncontrolled diabetes and over time leads to serious damage to many of the body’s systems, especially the nerves and blood vessels[8].

Poor glycemic control affects both the anterior
and the posterior segments of the eye and increasing prevalence of diabetes-associated DES (DMDES) has been reported in recent years. The pathogenesis and specific features of DMDES remain uncertain and interventions are limited to those used in DES. This review outlines the pathogenesis, clinical manifestations, and the current preventive and treatment strategies for diabetes-related DES. The objective of this study is to find the association of dry eye with diabetes.

MATERIAL AND METHOD:
A cross sectional study was conducted in Rehmat Eye Trust Hospital Lahore in January-April 2017 in which 100 patients were included and data was collected through structured questionnaire. Dry eye syndrome was assessed with tear break up time tests and Schirmer. Sample was collected through non probability convenient based sampling. SPSS version 20.0 was used to analyze this data. Multiple linear regression model is used to check the association of diabetes with dry eye. Clinical data of all patients included sex, age groups (35-70), duration of diabetes, fasting glycaemia, history of other diseases, like heart disease, recent stroke history (less than 6 months), psychiatric or neurologic diseases or dementia, rheumatic diseases, thyroid diseases, intestinal inflammatory disease, asthma or other allergic diseases, report of dry mouth or another mucosae, ocular diseases (cataract, glaucoma, macular degeneration, keratopathies, diabetic retinopathy), previous ocular surgeries, photocoagulation report, use of eye drops, use of medication and cigarette smoking. The data was obtained by reviewing the medical records and through direct interview of the patient.

Dry eye patients were defined in our study as individuals that had at least one of the classical symptoms plus one or more alterations in the objective tests analyzed. They were evaluated for common symptoms of dry eye ocular discomfort including: soreness, gritty sensation, itchiness, redness, blurred vision that improves with blinking and excessive tearing. The frequency of these symptoms was graded as: never (graded as “1”), rarely (at least once in 3-4 months, graded as “2”), often (at least once a week, graded as “3”) or all the time (graded as “4”). These patients were then submitted to a Schirmer test. The Schirmer test was graded as follows: “1”, when it was 15mm or more in 5 minutes; “2”, when it was less than 15mm; “3” when it was less than 5mm; and “4” when it was less than 2mm. Those that reported one or more of the symptoms graded as “3” or “4” and had a Schirmer test inferior to 15mm in 5 minutes(17) were defined as having moderate to severe dry eye, based on criteria proposed by the American Academy of Ophthalmology and DEWS.

Corrected visual acuity was assessed in all patients. Structures of the eye were assessed with slit lamp biomicroscopy examination. Retinal status was evaluated by indirect ophthalmoscopy after dilation using a tropicamide 1% drop. Moistened with non preservative saline Flourescein strips were introduced into the conjunctival sac with minimal stimulation, undetected by the patients. The individuals were then instructed to blink several times for a few seconds to ensure adequate mixing of Flourescein. The tear film was examined with a broad beam and a cobalt blue filter. The interval between the last complete blink and the appearance of the first corneal black spot or line in the stained tear film was measured using a stopwatch.

RESULTS:

Table 1: Descriptive Statistics:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Eye</td>
<td>1.175</td>
<td>0.138</td>
</tr>
<tr>
<td>Diabetic</td>
<td>1.572</td>
<td>0.280</td>
</tr>
</tbody>
</table>

Descriptive Statistics in the form of arithmetic mean and standard deviation were calculated. Results are above in Table 1 in order to determine the central tendency of the data and variables trend. The mean values were ranged between 1.175 and 1.572. Mean of dry eye is 1.175 which shows that dry eye symptoms were present in most of diabetes patients.

Table 2: Correlation of dry eye with duration of diabetes

<table>
<thead>
<tr>
<th>Variables</th>
<th>Dry Eye</th>
<th>Diabetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Eye</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Diabetic</td>
<td>0.787**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is strong at 0.6-1 (2 – tailed)

In the above correlation analysis table 2, relationship of diabetic and dry eye is 0.787 which is strong. Male patients (n=16) with dry eye disease had a mean duration of diabetes of 11.22 ± 9.705 years whereas this was 9.86 ± 8.135 years in women subjects (n=45). The highest mean of diabetes duration time was found in the 67.4-70 year-old group (13.29 ± 9.57). Mean duration of diabetes was not statistically significant among sex and age (p=0.718 and p=0.711 respectively).

Table 3: Association of dry eye with diabetes

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Eye</td>
<td>0.953</td>
<td>12.544</td>
<td>0.000</td>
</tr>
<tr>
<td>Diabetic</td>
<td>0.141</td>
<td>2.962</td>
<td>0.004</td>
</tr>
</tbody>
</table>

N=100, R Square= 0.382, Dependent Variable= Dry Eye

In above table dry eye dependency on diabetes is 0.953 which shows diabetes is a major cause of dry eye. In regression analysis table 3, R square value shows the dependency of dry eye on Diabetic which is 58.2%. Coefficient beta values show how strongly independent variables influence the dependent variable. Beta coefficient for dry eye is 0.953, which show diabetics strongly influence the patient and cause dry eye. ‘t’ values show the size of difference relative to the variation in sample data. In above table ; t value for dry eye is 12.544 and diabetics are 2.962. ‘p’ values in
regression shows the significance relationship between independent and dependent variables. In above table, both independent variables have significant relation with dependent variable.

**DISCUSSION:**

Of 100 subjects, 60.3% suffer from dry eye syndrome. Although dry eye syndrome was more common in older and female patients, But there was significant association between dry eye syndrome and duration of diabetes (P = 0.01). Dry eye syndrome was more frequent in diabetic patients with DR (P = 0.04). 17.1% with mild non proliferative DR (NPDR), 17.1% with moderate NPDR, 11.1% with severe NPDR and 25.1% with proliferative DR (PDR). There were significant relation between age, sex and duration of diabetes and DR. The result illustrate that Diabetes is major cause of dry eye.

A study was carried out in year 2009 by Juke. M in US on eighty-eight eyes of 50 noninsulin-dependent diabetes mellitus patients seen at the Department of Ophthalmology, Kobe University School of Medicine, from September 1998 to February 1999, and 40 eyes of 20 healthy control individuals in which the mean corneal sensitivity was significantly lower in diabetic patients, diabetic patients with peripheral neuropathy, and poorly controlled diabetes compared with control subjects (P < 0.001). The BUT and Schirmer test values were also significantly lower in the diabetic group, in patients with peripheral neuropathy and poor metabolic control.

Another research was carried out in year 2012 in Ethiopia by Sermer. M. The purpose of this study was to evaluate the risk factors for ocular surface disorders and tear dysfunction in patients with type 2 diabetes. This prospective case controlled study included 41 patients with type 2 diabetes and 20 healthy subjects as the control group. Abnormal tear function tests were associated with poorer metabolic glucose control, pan retinal ALP, and proliferative diabetic retinopathy (P < 0.05), but not with duration of diabetes (P > 0.05). The results of the study indicated that poor metabolic control, pan retinal ALP, and proliferative diabetic retinopathy are high risk factors for ocular surface disorders in type 2 diabetes. These patients should be followed more carefully, and should be referred to an ophthalmologist when required.

Another study was performed in year 2004 in Korea by Mei. Kto investigate the changes of tear film and ocular surface in diabetic patients, as well as the ocular and systemic factors related to these changes. This study suggested that diabetic patients with poor metabolic control, neuropathy, and advanced stage of retinopathy should be examined for tear film and ocular surface changes.

Another study was carried out in 2004 in China. The objective of this study was to see the tear film function of patients with type 2 diabetes and to investigate the risk factors of dry eye in these patients. Totally 111 patients with type 2 diabetes and 100 age and sex-matched control subjects were studied. Tear film function was evaluated by dry eye syndrome, tear breaking up time (BUT), corneal Flourescein staining, Schirmer I test (SIT), and tear film lipid layer observation with tear scope. Dye eye score was calculated with the results of these tests. Dry eye score had a good correlation with diabetic retinopathy and photoagulation (P < 0.01), but was poorly correlated with age, gender, insulin, duration of diabetes mellitus, and metabolic control (P > 0.05). Patients with type 2 diabetes tend to develop tear film dysfunction. The disorders of tear film quantity and quality seem relevant to the stage of diabetic retinopathy and photoagulation.

**CONCLUSION:**

Diabetes and dry eyes appear to have a common association. Further studies need to be undertaken to establish an etiologic relationship. Dry eye is maximum present in insulin dependent patients and maximum diabetes patients in current context are women. However, examination for dry eye should be an integral part of the assessment of diabetic eye disease.

**REFERENCES:**

Prevalence of Dry Eyes in Diabetic Patients at Rehmat Hospital, Lahore


Nipah- A Brian Damaging Virus has killed 260 People so far in India.

Nipahvirus(NiV) is a mysterious infectious brain damaging disease. It is a type of RNA virus from genus Henipavirus. It usually spreads in those with close contact to infected pigs, house bats and eating raw date palm. The disease has recently killed 13 people in Bombay, as confirmed by the National Institute of High Security Animal Diseases in Bhopal. 116 suspected cases of dead bats were tested in Laboratory which has confirmed 15 cases as positive and unluckily all of them have died, mostly in Kerala. State. There is no vaccine found as yet. The management involves supportive care only. According to WHO it spread through body fluids and causes encephalitis, preceded by fever, headache, breathing difficulty and neurological problems. The disease may go into epidemic outbreak.

The mortality rate is almost 75% (WHO). It normally takes 5 to 14 days after exposure, and may progress into coma as fast as in 24-48 hours due to Encephalitis.
Effect on Intraocular Pressure of Preoperative Sub-tenon Injection of 5-Fluorouracil in Chronic Open-angle Glaucoma

Khalid Mahmood, FCPS¹, Mehreen Sohail, MCPS², Hina Adeel, MCPS³, Muhammad Tariq Khan FCPS⁴, Sidrah Riaz FCPS⁵

ABSTRACT
Background: Acute appendicitis is one of the most common acute surgical conditions of the abdomen. Recently hyperbilirubinemia has been shown to be associated with acute appendicitis which occurs presumably as a result of bacteremia and endotoxemia and it occurs in both simple and complicated appendicitis i.e appendical perforation or gangrene.

Objectives: The aim of this study was to determine the frequency of hyperbilirubinemia in acute appendicitis.

Material and Methods: This study was conducted at Surgical Department, Khyber Teaching Hospital, Peshawar from January 2014 to January 2015. Study Design was descriptive (cross sectional) with duration of one year in which a total of 185 patients were observed according to WHO formula for sample size calculation by taking proportion of hyperbilirubinemia 77.8%, margin of error 6% and confidence interval 95%. More over consecutive (non probability) sampling technique was used for sample collection.

Results: In this study age distribution among 185 patients was analyzed as 42(23%) patients were in age range <20 years, 61(33%) patients were in age range 21-30 years, 41(22%) patients were in age range 31-40 years, 28(15%) patients were in age range 41-50 years and 13(7%) patients were in age range 51-60 years. Mean age was 30 years with SD± 2.54 (Table 1). Sixty two (62%) percent patients were male and 38% patients were female. Twenty eight (28%) percent patients had hyperbilirubinemia while 72% patients didn’t have hyperbilirubinemia. Total serum bilirubin (TSB) level among 185 patients was analyzed as 133(72%) patients had total bilirubin level < 1 mg/dl while 52(28%) patients had total bilirubin level > 1 mg/dl. Mean bilirubin level was 0.7mg/dl with SD ± 3.46.

Conclusion: Hyperbilirubinemia is a statistically significant diagnostic marker for acute appendicitis and the likelihood of perforation.

Keywords: Frequency, hyperbilirubinemia, acute appendicitis.

INTRODUCTION:
Primary open-angle glaucoma usually requires medical treatment as a first line therapy. Monotherapy usually not successful in achieving target intra-ocular pressure (IOP) which requires additional topical drugs to be added. Even oral anti-glaucoma agents are required in many cases to reach a safe IOP level in order to avoid optic nerve damage and to save visual fields.¹² Long term use of topical anti glaucoma medication leads to changes in conjunctival and sub-tenon area. These fibrotic changes ends up in failure of surgical treatment.³⁴⁵

⁴, ¹¹, ¹² Associate Professors of Ophthalmology, Avicenna Medical College & Hospital, Lahore.³ Senior Registrar, Avicenna Medical College & Hospital, Lahore.¹¹ Senior Registrar Avicenna Medical College & Hospital, Lahore. Assistant Professor Of Ophthalmology, Akhber Saeed Medical and Dental College, Bahria Town, Lahore, 03224497303

Correspondence: Dr. Khalid Mahmood, Associate Professor of Ophthalmology Avicenna Medical College & Hospital Lahore, DHA, Phase X1, Lahore, E.Mail>eyesavert66@gmail.com, Cell: 03224222700

Received: April’2018 Accepted May’2018

5FU application (a novel technique) through single injection in the area of treatment has proved to be very effective in controlling IOP in chronic POAG with failed maximum medical therapy. Bleb remains functional and avascular, post-op complications are few as compared to MMC application.

Attempts to make glaucoma surgery successful are every surgeon’s wish which sometimes ends devastatingly in moderate to high risk glaucoma. Some important risk factors are younger age,⁶ black race, myopia, previous ocular surgery and/or inflammations of the eyeball. Long term use of topical anti glaucoma medications in primary open-angle glaucoma is important cause of trabeculectomy failure.⁷, ⁸ The main interface is at the sub-conjunctival sub-tenon space complex. Maximum scarring occurs at this place which leads to closure of the trabeculectomy window and ends in diminished aqueous outflow.¹⁰,¹¹,¹² To avoid such results, attempts and innovations are regularly made while performing glaucoma surgery.¹³,¹⁴

Different modifications are adopted by surgeons like use of antimetabolites is usually common. Routinely used antimetabolites are 5-Fluorouracil (5-
**Effect on Intraocular Pressure of Preoperative Sub-tenon Injection of 5-Fluorouracil in Chronic Open-angle Glaucoma**

FU) and Mitomycin-C (MMC). Antimetabolite use in glaucoma surgery is very common nowadays. In spite of having multiple disadvantages and side effects, these drugs are usually applied to improve the success rate of glaucoma surgery. Among a long list of adverse effects are hypotony and its related maculopathy, cataract, corneal epithelial defects, bleb leaks with over-drainage, blebitis and late onset endophthalmitis. 5-Fluorouracil is a chemotherapeutic agent that specifically mediates its anti-proliferative effect by antagonizing pyrimidine metabolism; hence its classification as an antimetabolite. 5-Fluorouracil is active on the synthesis phase of cell cycle and Mitomycin-C is effective on the synthesis phase of cell cycle.

The application of pre-trabeculectomy 5-FU is a novel innovation in which instead of injecting the drug per-op or post-op multiple times, it is used as a single dose, 48 hours before the surgery in cases of chronic primary open-angle glaucoma. The patients were on maximum tolerated medical therapy (three or more than three drugs) for minimum of three years. The purpose was to achieve a safer IOP level and to avoid the complications of antimetabolites after trabeculectomy.

**MATERIAL AND METHODS**

71 eyes of 58 patients were selected and enrolled from January 2016 to August 2017 from outpatient department of ophthalmology department of Avicena Medical College Hospital. All patients had chronic open-angle glaucoma and were using three or more than three topical medications for at least 3 years. Pre-operative intraocular pressure was in the range of 24-32 mmHg with Goldman’s applanation tonometer. Best corrected visual acuity, detailed anterior and posterior segment examination including disc morphometry, visual fields and OCT retinal nerve fiber layer was recorded. Gonioscopy was performed to assess the anterior chamber angle configuration. The patients under age of 25 years, with close angle, with history of previous trabeculectomy, uveitis, secondary close angle and steroid induced glaucoma were excluded.

The procedure was carried out in two steps. The initial procedure was under topical anesthesia with Proparacaine Hydrochloride 0.5%. The conjunctival and Tenon capsule mobility was checked with a moist cotton bud. Taking aseptic measures, 0.3 ml of 50mg/ml of 5-Flourouracil (5-FU) was injected 6.0mm away from limbus at 12 o’clock meridian in the sub-Tenon space. This corresponds to the presumed surgical bleb site. Topical antibiotics and mild steroids were prescribed four times a day.

Routine fornix based trabeculectomy was performed on the 2nd day of the sub-Tenon injection of 5-FU. Follow up was carried out at day 1, week 1, and monthly for 1 year. Visual acuity, IOP, detailed anterior and posterior segment examination was done with special emphasis on bleb morphology, patency of peripheral iridectomy and anterior chamber depth. Complication data was maintained and all complications were managed accordingly.

**RESULTS:**

Target IOP in range of 12 to 16 mmHg was selected and 14mm of Hg was achieved in 59 eyes, 17 eyes were given a single additional topical medication to achieve target IOP and in 05 cases the target IOP was not achieved. Visual acuity remained stable in 50 eyes, while it deteriorated in 05 eyes due to complications. Bleb morphology was remarkably avascular and moderately elevated which qualified as a functional bleb. No signs of bleb thinning or blebitis was noted in the post-op period. Shallow anterior chamber resulted in immediately post-op days in 4 eyes which was managed accordingly. Only one eye got hypotony (IOP 6 mmHg) which was normalized after 2 weeks. No case required repeat trabeculectomy or needling.

![Figure 1](image)

**DISCUSSION:**

Trabeculectomy aims to produce a long-functioning drainage fistula, with the least possible risk of complications. In an ideal case, the bleb should be diffused and mildly elevated, with standard vascularity. 5FU is used to control healing, as it allows lower IOPs to be obtained. However, it must be used vigilantly in order to avoid thin or ischemic blebs, which are concomitant with leakage, and bigger risks of endophthalmitis and hypotony and its related maculopathy.

The 5FU area of action is confined to the area of exposure. The risk of a cystic bleb forming can be reduced by applying the anti-metabolites over a wide area. This also avoids escalated risks of premature failure that are caused by scarring around the site of the drainage.

Our hypothesis was, that by injecting the anti-metabolite into the sub Tenon layer, we would obtain a diffused area of action and direct toxicity to the conjunctiva and cornea would be reduced. As the patients in our study were all given the injections at the bleb site, it was thought to possibly increase the risk of bleb failure. However, these apprehensions were just that, and were not reflected in our results. Our results actually matched, and at times, surpassed those in which the injections next to the bleb were avoided.
As compared to the previous trabeculectomy, any fibroblast activity initiated by the injection is likely to be inconsequential. Most complications that arise with 5FU manifest months or even years subsequent to the procedure; in one study of primary trabeculectomies with 5FU which had 5-year follow-ups, the average intervals before the onset of bleb leak, blebitis, hypotony and endophthalmitis were 27, 35, 26 and 15 months, respectively. Therefore, before further conclusions regarding this technique are made, the long-term follow-up of our patients will be studied.

An additional factor to be taken into consideration is that this was a non-comparative study, and so, it only reported the results from one surgeon with a specific technique. In order to determine the advantages of this technique over existing means of 5FU application, a prospective and randomized controlled trial should be conducted, using a formal means of bleb assessment.

CONCLUSION:
This is a direct and quick technique of 5FU application that has been described and tested above; a single injection is administered in the area for treatment, as opposed to preparing and then transferring the fragments of the sponge material to the conjunctiva, this can be expected to give an even exposure to the entire area involved. The risks of involuntary exposure of areas of conjunctiva or the corneal epithelium to 5FU, or of retained sponge fragments are absent. This novel technique is unique and proved to be very effective in controlling IOP in chronic POAG with failed maximum medical therapy. Bleb achieved was functional and avascular post-op complications were few as compared to studies in which MMC was applied.

REFERENCES
10. Shao T, Li X, Ge J. Target drug delivery system as a new scarring modulation after glaucoma filtration surgery. Diagn Pathol. 2011; Jul 8;6:64
Easy and Effective Treatment for Chronic Dacryocystitis in Geriatric Patients.

Prof. M. Arshad Mahmood FCPS¹, Zahid Mahmood FCPS², Mujahid Raza FCPS³, Prof. Muhammad Saeed FCPS⁴, Aysha Azam FCPS⁵

ABSTRACT

Purpose: To find easy and effective treatment option for chronic dacryocystitis in geriatric patients, instead of extensive and difficult surgery dacryocystorhinostomy. It was an interventional prospective study.

Material and Methods: 48 patients presented with chronic dacryocystitis in the out patients department of Ophthalmology in Nawaz Sharif Social Security Teaching Hospital, Multan Road Lahore and Gulab Devi Teaching Hospital Lahore, from January 2015 to April 2018, were included in this study. Approval by ethical review committee and informed consent was taken prior to study. Patients from either gender, aged above 55 years with confirmed diagnosis of chronic dacryocystitis were included. Patients with Acute dacryocystitis, previous history of lacrimal sac surgery, tumors of lacrimal sac and nasal pathology were excluded from the study group.

Counseling and both the procedures were explained in detail with their adva.

All patients were operated by senior surgeons for dacryocystectomy under local anesthesia. Regular follow up was done for symptomatic relief on 1st post op day then at 1st week, 3rd week and later on monthly basis for the next 6 months.

Results: Total 48 patients with chronic dacryocystitis ranging from 55 to 70 years were included. The mean age was 58 years. Out of 48 patients, 35 (73%) were females and 13 (27%) were males. Out of 48 patients, 41 (85.41%) were relieved of the presenting complaint of epiphora, 5 (10.41%) patients have partial relief of their symptoms and 2 (4.1%) patients still had the same epiphora although much less than at the presenting time.

Conclusion: Dacryocystectomy is a good alternate in older patients for chronic dacryocystitis, as compared to much invasive dacryocystorhinostomy.

Keywords: Dacryocystectomy, Dacryocystitis, Dacryocystorhinostomy, Epiphora

INTRODUCTION:

Dacryocystitis is the inflammation of lacrimal sac which can be classified as acute, subacute, or chronic. It may be localized in the sac, or may extend outside sac as pericystitis. It may extend to orbit leading to orbital cellulitis. During acute dacryocystitis a palpable painful mass occurs at the inner canthus, and obstruction is present at the junction of the nasolacrimal sac and duct. When the infection develops, the lateral expansion of the lacrimal sac tends to push the common canaliculus and produce a kink within it, with the result that the sac is no longer reducible. This allows a buildup of material within the sac and a chronic stasis, which leads to an exacerbated infection and more stasis. Approximately 40% of initial acute attacks do not recur, but in the other 60% of patients, repeated attacks occur. Chronic dacryocystitis may be the end stage of acute or subacute dacryocystitis, & a common organism involved is Staphylococcus aureus. In some cases, especially in young women, stones may develop that lead to intermittent attacks of dacryocystitis; this has been termed acute dacryocystic retention syndrome.

Dacryocystectomy is a good alternate in older patients for chronic dacryocystitis, as compared to much invasive dacryocystorhinostomy.

In dacryocystitis with pericystitis, the infection is present around the sac. The infection may spread to the anterior orbit and results in preseptal cellulitis involving eyelids. If the infection may extends posterior...
Chronic Dacryocystitis is preferably treated by Dacryocystorhinostomy (DCR) which involves the anastomosis of the lacrimal sac to the nasal mucosa of the middle meatus. The procedure is usually performed under hypotensive general anesthesia, with success rate of almost 90%. The causes of failure include inadequate size and position of the ostium, unrecognized common canaliculc obstruction, scarring and the ‘sump syndrome’, in which the surgical opening in the lacrimal bone is too small and too high. Complications include cutaneous scarring, injury to medial canthal structures, nasal bleed, cellulitis, and cerebrospinal fluid rhinorrhoea if the subarachnoid space is inadvertently entered. There are many other options other than DCR, which include Endoscopic DCR, Endolaser DCR, Balloon dacryocystoplasty. But most commonly used procedure is conventional external DCR.

Dacryocystectomy (DCT) is the procedure in which whole of the lacrimal sac is removed. The main indication for DCT is excision of lacrimal sac tumors. In our study we performed dacryocystectomy for frail, elderly patients suffering from chronic dacryocystitis as it is easy to perform, less time consuming & less complications.

MATERIALS AND METHODS:

A total of 48 patients presented with chronic dacryocystitis in the out patients department of Ophthalmology in Nawaz Sharif Social Security Teaching Hospital, Multan Road Lahore and Gulab Devi Teaching Hospital Lahore from January 2015 to April 2018 were included in this study. This study was approved by the ethical review committee, and informed written consent was taken from the patients prior to inclusion in the study.

Patients with confirmed diagnosis of chronic dacryocystitis with positive regurgitation test were included in the study. The age of the patients were ranging from 55 to 70 years. The patients were randomly selected on the basis of inclusion and exclusion criteria. Both genders were included while the patients with acute dacryocystitis, younger patients < 55 years were excluded from the study.

History was taken and recorded on a preset performa in which special enquiry was made about the main complaint, duration and any previous medical or surgical treatment. Complete oculoc and systemic examination was performed. A detailed ENT examination was also done by a specialist to rule out associated nasal pathology. All patients had preoperative counseling and the procedure was explained in detail.

All patients were operated by senior surgeons for dacryocystectomy under local anesthesia by using 50/50 mixture of 2% Xylocain with adrenaline 1:200,000 and bupivacaine. Incision was taken over anterior lacrimal crest. Medial palpebral ligament was identified. Orbicularis was separated Incision was taken over anterior lacrimal crest. Medial palpebral ligament was identified. Orbicularis was separated Incision was taken over anterior lacrimal crest. Medial palpebral ligament was identified. Orbicularis was separated Incision was taken over anterior lacrimal crest. Medial palpebral ligament was identified. Orbicularis was separated

Incision was taken over anterior lacrimal crest. Medial palpebral ligament was identified. The orbicularis was separated. Reflection of periosteum and lacrimal sac from lacrimal fossa was done. The sac was separated from orbicularis from lateral side with the help of Westcott scissor. The sac was cut just near to the nasolacrimal duct and also from common canaliculus superiorly to remove it. The orbicularis was closed by interrupted 6/0 vicryl. The skin wound was closed by 4/0 prolene. After the completion of procedure, antibiotic eye ointment was applied wound covered by aseptic cotton pad. Patients were advised oral anti-inflammatory and antibiotics tablets for 5 days. Complications following a dacryocystectomy are rare. Inadvertent injury to the angular vein may cause profuse bleeding. This can easily be avoided if incisions are not on the site or are in very close to the vicinity of angular vein. Other complications include wound dehiscence, wound infection, increased tear meniscus and epiphora, recurrent dacryocystitis secondary to remnant sac, and a prominent facial scar. Regular follow up was done for symptomatic relief on 1st, post op day then at 1st week, 3rd week and later on monthly basis for the next 6 months.

RESULTS:

Total 48 patients with chronic dacryocystitis ranging from 55 to 70 years were included. The mean age was 58 years. Out of 48 patients, 35 (73%) were females and 13(27%) were males. Out of 48 patients, 41(85.41%) were completely relieved of their presenting complaint of epiphora, 5 (10.41%) patients have partial relief of their symptoms and 2 (4.1%) patients still had the same epiphora but relief of chronic dacryocystitis an any regurgitation. There was no congestion of the eye due to chronic conjunctivitis as before surgery.
DISCUSSION:

DCT was first described by Woolhouse in 1724 as a treatment for recurrent dacryocystitis secondary to acquired nasolacrimal duct obstruction. The modern DCT procedure was described by Rudolph Berlin in 1868 and he documented as, DCT is the principal operation against incurable epiphora. It is the main protection against corneal abscess and purulent infections against cataract.

Dacryocystorhinostomy (DCR) is considered as the surgical procedure of choice for epiphora due to nasolacrimal duct obstruction of different causes. It is successful over more than 85% of cases as proved by various studies, but there are some limitations due to following reasons. The procedure is usually preferred under general anesthesia therefore per and post operative risks of general anesthesia are increased especially in older patients with other associated co-morbidities like diabetes, chronic hypertension, and ischemic heart disease. The osteotomy done in this procedure is also traumatic for which the patients may remain uncomfortable for quite some time after the surgery. Also there are more chances of bleeding from nasal mucosal injury. So it is necessary to pack the nose with either cocaine or local anesthetic with adrenaline and nasal decongestant drops are used prior to surgery to prevent bleeding during surgery. These agents can have significant systemic effects on frail, elderly patients, with exacerbation of systemic hypertension, tachycardia, dysrhythmia, and a risk of myocardial toxicity due to their sympathomimetic action.

We performed all DCT procedures using 50/50 mixture of 2% Xylocain with adrenaline 1:200,000 and Bupivacaine. DCT is a safer procedure to perform under local anesthesia in elderly frail patients with other systemic co-morbidities as the surgical time is much shorter than that of external DCR. Also in elderly patients, if there is ocular co-morbid conditions that require urgent treatment such as microbial keratitis, advance cataract, or lens-induced glaucoma, the DCT is preferred procedure with chronic dacryocystitis. The implication here is facilitation of visual rehabilitation. DCT is considered less invasive than Dacryocystorhinostomy (DCR) because lacrimal bone and nasal mucosa are not violated. Also there is no need to pack the nose with cocaine or nasal decongestant to prevent nasal mucosal bleed. Also in elderly people the dry eye is fairly common, occurring in approximately 5–30% of the general elderly population, and affects women more commonly than men. The prevalence disparity by age ranges from 8.4% in subjects younger than 60 years old to 15% in patients 70–79 years old and 20% in those older than 80 years. The incidence of epiphora in these old people is very minimal after DCT due to concomitant dry eye.

In our study we observed that DCT procedure has advantages in terms of technical easiness, lower learning curve, less invasiveness and minimal peri-operative and postoperative bleeding. The hospital stay is short, and there is early recovery, and overall less morbidity. Other studies also have similar results showing that DCT should be considered a primary procedure for chronic dacryocystitis in individuals over 70 years old. This procedure has a much lower risk to these patients who often have associated co-morbidities.

CONCLUSION.

The results of our study showed that DCT is a safer & easy procedure to perform on frail, elderly patients with other associated co-morbidities than DCR. The surgical time is much shorter than that of external DCR surgery with minimal complications. We therefore recommend that surgeons consider DCT in frail, elderly patients with chronic dacryocystitis as a safe alternative to DCR.

REFERENCES:
YABA Drug Crisis In India, Bangladesh, Burma, Philippines, Indonesia & Thailand

Yaba literally mean «mad drug» or «horse drug», are tablets containing a mixture of metha-mphetamine and caffeine, (popularly known as energy pill). Primarily, it was given to horses when pulling carts up the steep hills and for other strenuous work. Illegal traffickers often marketed the drug by claiming that the pills contained up to 6% of heroin. The slang terms for yaba in Burma is "kyethi," and "bhul bhulinya" and "Lal Katha," in India, "shabú," in Philippines and Indonesia, and "chocafee" in Thailand. Due its sweet taste and strong chocolate smell, the name commonly used in China is "ma-goo". In Bangladesh it's colloquially known as "baba", "guti Laal", "khawon" etc.

When swallowed in pill form, the duration of the drug's effect is between 8–16 hours, even up to 24 hours after consumption, to be able to fall asleep; its use is not uncommon among both female and male sex workers. Thailand and Cambodia. Burma are the largest producer of methamphetamine in the world, particularly in the Golden Triangle.

Tablets are carried in mobile phones, secret chambers in cars, trucks or motorcycles and even inside the books. Some consignments of yaba pills are being smuggled into the country through Indian border as well. The BGB seized around 1,800 pieces in the border with India in 2013 while the number was 1.1 lakh in 2015 and 67,000 in first four months of this year. Over 52 % of the population falls in the age bracket of 15 to 35 and now getting addicted to the deadly drug, which gives them temporary happiness but in the long run destroys them both psychologically and physically. At times, it causes anxiety and aggression and damages kidney, heart, liver and brain as well. Yaba tablets were formerly sold at gas stations and were commonly used by drug addicts in the United States, as a club drug ecstasy. Yaba is a source of easy money and the police force has carried out dope tests in bad guys.

The crazy medicine has penetrated the society's all strata, students and professionals, the poor and the rich. Department of Narcotics Control describes the yaba in "epidemic in Bangladesh". Last year, law enforcers seized four crore pieces of the pink tablets, only 10 per cent of the drug was seized and 90 per cent flowed into the market. According to a police officer, 'I am very worried that my force members are getting addicted to yaba'. So far, the death toll in BD against "anti-drug" crackdown has risen to 52.

Curtesy: Preya Bajgai, M.S., Ramandeep Singh, M.S.
Post Graduate Institute of Medical Education and Research, Chandigarh, India.
Efficacy of Topical 0.05% Cyclosporine Eye Drops in Children with Severe Vernal Kerato-conjunctivitis (VKC)

Maria Sultan FCPS, FRCS 1, Syed Amir Hamza FCPS 2, Muhammad Naeem Khan FCPS 3

Department of Ophthalmology Hayatabad Medical Complex, Peshawar

ABSTRACT:
Objective: This study was conducted to determine the efficacy of topical 0.05% cyclosporine eye drops in children with vernal keratoconjunctivitis not responding to topical corticosteroids, mast cell stabilizer and antihistamine therapy.

Methods: Total 62 patients, 48 boys and 14 girls having age less than 16 years, were included in this study. Four-point scale of 0 to 3 was used to score signs and symptoms for all the patients. Topical cyclosporine 0.05% was used by each patient along with artificial tears and follow up was done for 6 months. The data was entered in the performa at day 0 (before treatment initiation) and at 1st, 3rd, and 6th months of treatment.

Results: There was a statistically significant decrease (p<0.05) in severity of all signs and symptoms, after having treatment for six months. No serious adverse effect was noted in patients.

Conclusion: In children for controlling signs and symptoms of vernal keratoconjunctivitis, topical cyclosporine 0.05% is effective and a safe treatment.

INTRODUCTION:
Vernal keratoconjunctivitis (VKC) is seasonal, allergic disease which is chronic in nature. It involves tarsal and bulbar conjunctiva. VKC is commonly seen in males especially in children and young population living in dry, dusty environment.1,3

It usually begins in first decade and disappears in second decade.3 Common symptoms are discomfort, photophobia, discharge, tearing. Common signs include hyperemia of bulbar conjunctiva with chemosis, cobble stone papillae, Trantas dots, corneal shield ulcer and superficial keratitis.1 Severe visual impairment can occur in VKC because of keratoconus, corneal shield ulcers, corneal scarring and also due to steroid induced cataracts and glaucoma.4 Immunoglobulin E-activated hypersensitivity reaction along with mast cell, lymphocytes and eosinophil mediated Th2 helper cell activation are the mechanisms which contribute to immunogenic and pathogenic processes of VKC.2,3,4

Topical mast cell stabilizers, antihistamines, corticosteroids and NSAIDs are commonly used for treating VKC. Most effective topical corticosteroids cannot be used for longer duration because of their side effects like cataract, corneal complications and glaucoma.3 In resistant cases topical cyclosporine A (CsA) can be used effectively.5-9 This immunomodulator fungal metabolite decreases inflammation of eye by downregulating Th2 helper cells lymphocyte division, interleukin-2 and histamine production from basophils and mast cells. In present study, we wanted to determine the long-term effectiveness of topical cyclosporine 0.05% in patients having VKC who are resistant to topical corticosteroids, antihistamine and mast cell stabilizers.

In children for controlling signs and symptoms of vernal kerato-conjunctivitis, topical cyclosporine 0.05% is effective and safe treatment.

METHODS:
Total 62 patients (with severe VKC) who were treated at Eye Unit, Hayatabad Medical Complex, Peshawar, from April 2016 to September 2016, were included in this study. It was a cross sectional (descriptive) study and sampling technique was non-probability consecutive sampling. Patients included were under 16 years of age, diagnosed with VKC (active disease) and were refractory to topical antihistamines, mast cell stabilizers and corticosteroids. Patients who did not meet the inclusion criteria, having other ocular or systemic disease or having age < 5 years were excluded from the study. A written informed consent was obtained from the parents/guardian.

A complete history and ophthalmological ex-
Efficacy of Topical 0.05% Cyclosporine Eye Drops in Children with Severe Vernal Kerato-conjunctivitis (VKC)

aminations were performed. Visual acuity was recorded using Snellen Eye Chart. For recording intraocular pressure non-contact tonometer was used. Slit lamp examination along with fundus examination was done and anterior segment photographs were taken. The patients were examined at 1 month, 3 months and 6 months after starting the treatment with topical 0.05% cyclosporine four times a day. Symptoms and signs were recorded before and after treatment giving scores between 0 and 3. Scoring for symptoms was done by grading photophobia, itching, discomfort (i.e. burning, stinging and foreign body sensation), discharge and tearing. Scoring for signs was done by grading tarsal papillae, conjunctival hyperemia, limbal papillae, Taranta’s dots, keratopathy and neovascularization of cornea. (Table I)

The data was recorded at first visit (baseline) before initiating treatment and following treatment at 1st, 3rd, and 6th months. The data was assessed using statistical software SPSS 17.0. Comparison of data at Baseline, 1-month, 3-months and 6-months was done using Wilcoxon test. The p values were considered statistically significant and less than 0.05.

RESULTS:

Clinical scoring of 62 patients at (base line first visit) day 0 and at every visit for follow up (1st Month, 3rd Month and 6th Month) Table II. Treatment with topical 0.05% cyclosporine was well tolerated by all patients. In some cases slight burning was noted which was taken as normal. Side effects like pain, hyperemia, severe burning and tearing were not noted during period of treatment. Scores for symptoms like discomfort, itching, discharge, tearing and photophobia were reduced significantly at each follow up visit as compared to base line symptom scores, as shown in table II (p value is less than 0.001 for each). Similarly signs like conjunctival hyperemia, tarsal and limbal papillary hypertrophy, Taranta’s dots, keratopathy and corneal neovascularization showed statistically significant improvement in Signs Scores, with treatment in 6 months follow-up time, as shown in table III (p<0.05). The comparison for tranta’s dots scores at baseline and at 1st month follow up was not statistically significant (p=0.052) but at 3rd and 6th months follow up visits, there was statistically significant improvement in scores with p values of 0.011 and 0.007 respectively.

DISCUSSION:

In our study, topical 0.05% cyclosporine was used in 62 patients for period of 6 months. Four-point value scale was utilized to determine result of treatment. There was a significant improvement in signs and symptoms of VKC in all the patients. In previous 20 years many studies on usage of topical Cyclosporine A (1%–2%) in VKC and AKC were published.5-7,12-16 According to Secchi et al in cases having VKC the use of topical Cyclosporine A 2% for duration of two weeks showed significant improvement in clinical score values.5 73% of patients in their study complained mild sensation of burning after using topical cyclosporine 2% with recurrences at 2–4 months after treatment cessation.5

Bleik and Tabbara conducted (double-masked) clinical trial, including 20 patients having VKC, they noted significant improvement in clinical signs and symptoms of VKC with treatment using topical cyclosporine A 2% as compared to placebo group; with no side effects noted.6 Also cyclosporine A was not present in patient’s serum.

Pucci et al conducted a trial in which they included 24 patients having VKC. In first 2 weeks during treatment, topical cyclosporine A 2% was used in one eye while placebo was used in other eye of the same patient.7 After 2 weeks there was significant decrease in clinical score values for eye using topical cyclosporine A. In second step of this trial, both eyes of the same patient were treated using cyclosporine A 2% for another two weeks. The results showed reduction of Clinical scores in previously placebo treated eyes with no additional improvement in previously cyclosporine A 2% treated eyes. This effect remained for follow-up period of 4 months. Only 4 patients among total of 24 required treatment with topical corticosteroids. Side effects of topical Cyclosporin A 2% included watering from the eyes and transient burning sensation after use of the drug.7

Spadavecchia et al stated that after using topical cyclosporine either 1.25% or 1% for period of 2 weeks and 4 months, there was significant improvement in clinical signs and symptoms of patients having severe VKC.12 No side effects like corneal endothelial damage and serum cyclosporine A levels were detected except transient burning sensation of eyes.12 Similar results were noted by Tesse et al in their study which included 197 patients having severe VKC.13 According to Kiliç and Gürler, a significant decrease in VKC signs and symptoms scores was noted after treatment with 2% cyclosporine for 2 weeks when compared to placebo without any side effects.14 In another study, Pucci et al conducted study including 156 patients having VKC, they were treated with topical CsA 1% and 2% for duration of 2–7 years and they noted significant decrease in sign and symptoms scores of these patients when compared to their pretreatment scores; few patients reported burning sensation of eyes, with their renal and liver function tests were normal, having no cyclosporine A levels detection in serum.15 A double-blinded trial was conducted by De Smedt et al by comparing efficacy of topical CsA 2% with dexamethasone 0.1%.16 The decrease in clinical scores along with visual improvement was almost similar in both groups after 4

Ophthalmology Update Vol. 16 No.3, July - Sep 2018
weeks of treatment; with foreign body sensation more noticeable in CsA group.\textsuperscript{16} A latest meta-analysis stated that ocular burning sensation and ocular stinging is common in both groups of patients who used CsA and placebos.\textsuperscript{17}

Ozcan et al, found that by using topical CsA 0.05\% in 7 patients of severe VKC, there was significant reduction in clinical scores and decreased need for use of topical corticosteroids, with no side effects.\textsuperscript{18} Keklikci et al stated that after 3 months use of topical CsA 0.05\% by 54 patients having VKC, there was considerable reduction in Signs and Symptoms scores with decrease in inflammatory cell numbers when impression cytology of conjunctiva was used, also no side effects were noted.\textsuperscript{19}

In this study, treatment with CsA 0.05\% resulted in decrease in need for topical steroid use, with no significant side effects. Only two patients had transient burning sensation of eyes after using drug. The results of this study shows that use of topical cyclosporine A 0.05\% four times a day is safe and effective alternate treatment for VKC patients who are refractory to usual anti allergic medications. More trials are necessary to decide the optimum time period needed for treatment and to know about the probability of recurrence after discontinuing cyclosporine A treatment.

**Table I. Grading of symptoms and signs of vernal keratoconjunctivitis**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>Symptoms</strong></td>
<td></td>
</tr>
<tr>
<td>Itching</td>
<td>None</td>
</tr>
<tr>
<td>Discomfort</td>
<td>None</td>
</tr>
<tr>
<td>Tearing</td>
<td>Normal</td>
</tr>
<tr>
<td>Discharge</td>
<td>None</td>
</tr>
<tr>
<td>Photophobia</td>
<td>None</td>
</tr>
<tr>
<td><strong>Signs</strong></td>
<td></td>
</tr>
<tr>
<td>Conjunctival Hyperemia</td>
<td>None</td>
</tr>
<tr>
<td>Tarsal Papillae</td>
<td>None</td>
</tr>
<tr>
<td>Limbal Papillae</td>
<td>None</td>
</tr>
<tr>
<td>Keratopathy</td>
<td>Normal Cornea</td>
</tr>
<tr>
<td>Corneal Neovascularization</td>
<td>None</td>
</tr>
</tbody>
</table>

Topical Cyclosporine 0.05\% four times a day was added to each patient’s treatment regimen. Although topical drugs that the patients were taking were not ceased, topical corticosteroid doses were reduced or stopped when possible (i.e. if clinical recovery was observed) during clinic visits.

**Table II. Patient’s distribution according to clinical symptoms score.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Itching</td>
<td>Baseline</td>
<td>-</td>
<td>-</td>
<td>22</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>1 month</td>
<td>-</td>
<td>12</td>
<td>50</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>3 months</td>
<td>4</td>
<td>50</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>28</td>
<td>34</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tearing</td>
<td>Baseline</td>
<td>2</td>
<td>8</td>
<td>18</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>1 month</td>
<td>8</td>
<td>14</td>
<td>40</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>3 months</td>
<td>20</td>
<td>42</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>56</td>
<td>6</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Discomfort
Efficacy of Topical 0.05% Cyclosporine Eye Drops in Children with Severe Vernal Kerato-conjunctivitis (VKC)

<table>
<thead>
<tr>
<th></th>
<th>0 (n)</th>
<th>1 (n)</th>
<th>2 (n)</th>
<th>3 (n)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conjunctival Hyperemia</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>2</td>
<td>8</td>
<td>40</td>
<td>12</td>
<td>Ref.</td>
</tr>
<tr>
<td>1 month</td>
<td>4</td>
<td>38</td>
<td>20</td>
<td>-</td>
<td>0.0001*</td>
</tr>
<tr>
<td>3 months</td>
<td>24</td>
<td>32</td>
<td>6</td>
<td>-</td>
<td>0.0001*</td>
</tr>
<tr>
<td>6 months</td>
<td>58</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>0.0001*</td>
</tr>
<tr>
<td><strong>Palpebral papillary hypertrophy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>-</td>
<td>2</td>
<td>22</td>
<td>38</td>
<td>Ref.</td>
</tr>
<tr>
<td>1 month</td>
<td>-</td>
<td>22</td>
<td>38</td>
<td>2</td>
<td>0.0001*</td>
</tr>
<tr>
<td>3 months</td>
<td>10</td>
<td>40</td>
<td>10</td>
<td>2</td>
<td>0.0001*</td>
</tr>
<tr>
<td>6 months</td>
<td>24</td>
<td>36</td>
<td>2</td>
<td>-</td>
<td>0.0001*</td>
</tr>
<tr>
<td><strong>Limbal papillary hypertrophy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>2</td>
<td>12</td>
<td>18</td>
<td>30</td>
<td>Ref.</td>
</tr>
<tr>
<td>1 month</td>
<td>4</td>
<td>12</td>
<td>46</td>
<td>0</td>
<td>0.0001*</td>
</tr>
<tr>
<td>3 months</td>
<td>18</td>
<td>36</td>
<td>6</td>
<td>2</td>
<td>0.0001*</td>
</tr>
<tr>
<td>6 months</td>
<td>44</td>
<td>16</td>
<td>2</td>
<td>-</td>
<td>0.0001*</td>
</tr>
<tr>
<td><strong>Tranta's Dots</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>44</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>Ref.</td>
</tr>
<tr>
<td>1 month</td>
<td>46</td>
<td>8</td>
<td>8</td>
<td>-</td>
<td>0.052*</td>
</tr>
<tr>
<td>3 months</td>
<td>52</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>0.011*</td>
</tr>
<tr>
<td>6 months</td>
<td>56</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>0.007*</td>
</tr>
<tr>
<td><strong>Neovascularization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>50</td>
<td>6</td>
<td>6</td>
<td>-</td>
<td>Ref.</td>
</tr>
<tr>
<td>1 month</td>
<td>50</td>
<td>10</td>
<td>1</td>
<td>-</td>
<td>0.006*</td>
</tr>
<tr>
<td>3 months</td>
<td>56</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>0.002*</td>
</tr>
<tr>
<td>6 months</td>
<td>60</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>0.003*</td>
</tr>
</tbody>
</table>

n: Number of patients; values of p: Probability value; * statistically significant; ref.: reference value.

**Conclusion:** In children for controlling signs and symptoms of vernal keratoconjunctivitis, topical cyclosporine 0.05% is effective and a safe treatment.
REFERENCES:

Prevalence of Presbyopia amongst Smokers

Maida Ahmed MBBS¹, Ramiesha Marium MBBS², Muhammad Usama Luqman Meer MBBS³

ABSTRACT:
Aim: Prevalence of presbyopia amongst smoking population
METHODOLOGY: A comparative cross-sectional study was carried out in Sir Ganga Ram Hospital Lahore. Within the context of this survey, 285 eligible participants over 30 years age were randomly selected for interview and underwent near vision testing. Of these, 152 participants were smokers and formed the case group and 152 non-smoking people were considered control participants. Functional presbyopia was defined as requiring at least +0.75 diopter in order to read the N8 optotype at a distance of 35 cm in the participant’s usual visual state. Optometric and ophthalmologic examinations were performed on all participants. Presbyopic correction coverage were calculated and the results were analyzed using SPSS program with P<0.05.
RESULTS: A total of 300 participants' records were evaluated. Of those, 150 cigarette smokers were categorized as samples and 150 normal patients as control group. 90 patients with ages between 35-37 year among smoking group needed to use glasses for near tasks, but nobody in normal group needed presbyopic glasses. There were significant differences in the age of onset and or progression of presbyopia were detected between smoking and normal patients (p<0.05).
CONCLUSION: The results of this study indicate that the onset of presbyopia amongst smoking group was earlier than normal group. Statistically significant difference in the age of onset and progression of presbyopia was found between smoking and non-smoking patients.
KEY WORDS: Presbyopia, smoker people, prevalence, SPSS, analysis

INTRODUCTION:
Presbyopia is the age-related reduced accommodation and is often associated with a progressive inability to read and write fine print [1]. The onset of presbyopia depending to the near tasks but is gradual and the patient’s accommodative amplitude becomes inadequate for her or his visual needs. There are substantial optical changes in the human lens with increasing age and during accommodation, since both the magnitude and the sign of the spherical aberration change with age[2]. Good near vision is important, even among populations who use it for tasks other than reading and writing. The human lenses exhibited a distinct viscoelastic behavior and the research evidence most strongly supports a loss of elasticity of the crystalline lens, although changes in the lens’s curvature result from continual growth and loss of power of the ciliary muscles. With progressive hardening and the loss of elasticity of the lensas its ectodermal growth it will become harder and harder for the ciliary muscle to accommodate by contraction [3]. The prevalence of presbyopia in different countries is reported by various studies. It is estimated that there were 1.04 billion people globally with presbyopia in 2005, of whom 517 million had no spectacles or inadequate spectacles [7].
Onset of presbyopia amongst smoking group was earlier than the normal. Statistically there is significant difference in the age of onset and progression of presbyopia between smoking and non-smoking patients.

Correspondence: Dr. Maida Ahmed MBBS, Medical Officer RHC Mong District Mandi Bahudin Email: Dr.maida199@gmail.com Cell: 03355592817
Received: April’2018 Accepted: June: 2018
have explored the association between smoking and age-related eye diseases ARED. The 2004 Surgeon General’s report on smoking concluded that a causal relationship between smoking and nuclear cataract exists and found evidence that was suggestive of a relationship between smoking and age-related macular degeneration (AMD) [8]. The onset of presbyopia may be a result of environmental conditions including high average temperature, significant much ultraviolet radiation, chronic deficiency of essential amino acids, and exposure to toxic factors, particularly hair dye. In the year 2000, blindness or low vision, mainly caused by age-related eye diseases (ARED, including cataract, glaucoma, age-related macular degeneration [AMD], and diabetic retinopathy [DR]), affected more than 3.3 million Americans aged 40 years or older; this number is predicted to increase more than 50% by 2020 [5].

Smoking harms nearly every organ of the body, causes many diseases, and worsens the general health of smokers. Tobacco annually results in approximately 443,000 deaths in the United States [6]. Many studies have explored the association between smoking and ARED. Several observational studies have determined that smoking is a strong risk factor for the development of neovascular age-related macular degeneration, cataract, and thyroid eye diseases [9]. A few studies is conducted on prevalence of presbyopia among smoking population. Therefore we designed this study with the aim of determining the prevalence of differences in age at onset and progression of presbyopia between smoking and nonsmoking patients in Pakistan.

MATERIAL AND METHOD:
A comparative cross-sectional study was carried out in Sir Ganga Ram Hospital, Lahore between October-December 2016 The aim of this study was to determine the correlation between the onset of presbyopia and smoking. Within the context of this survey, 285 eligible patients at least 30 years were randomly selected for interview and underwent near-vision testing. Eligible patients were refracted and given best distance correction. Demographic data including age, gender, and education level were obtained from all participants. There were no females among smoking group and all of 152 participants were male. Before doing ocular examination, participants answered all 10 question in the questionnaire. Testing both habitual distance visual acuity (uncorrected or with current correction) and corrected near visual acuity identifies refractive error or ocular disease and enables assessment of the patient’s ability to function during near tasks.

Patients underwent an ophthalmic examination that included Snellens’ Visual acuity, color vision, slit lamp biomicroscopy of the anterior segment as well as examination of the fundus. Near vision was tested and corrected to the nearest +0.75 diopter. Ocular refraction was measured using both streak retinoscope and Nidek autorefractometer. Retinoscopy was performed using trial lenses to an accuracy of 0.25 D in horizontal and vertical meridians. Snellen visual acuity measurements were taken using a standard projected eye chart with black letters on a white background. Subjective refraction was performed on the right and then the left eye of all eligible subjects, both without [uncorrected visual acuity] and with [presenting visual acuity] spectacles. Refraction was performed using an automatic objective (Nidek) and retinoscopy (Heine) and the result was used as a starting point for the subsequent subjective refraction. The data collected were analyzed using SPSS program with Chi and student t test with P<0.05.

RESULTS:
300 participants were included in this study. Of those, 150 cigarette smokers were categorized as cases and 150 normal patients as control group. Smoking people were aged between 30 and 65 years with the mean age of 42.97±5.503 and the mean age of nonsmokers was 49.67±7.273. Onset of presbyopia among case group was between 30 and 70 years and it was 40 to 70 years among control group. The (Table 1) shows the mean and SD of participants ages in sample and control groups.

Table:1 The mean and standard deviation of participant’s age (smoking, n=152 and non-smoking, n=152).

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoker</td>
<td>42.95</td>
<td>5.50</td>
</tr>
<tr>
<td>Non smoker</td>
<td>49.63</td>
<td>7.06</td>
</tr>
</tbody>
</table>

Among smoking group, there were 46(29.61%) office worker, 41(27.63%) with no official job and 65(42.76%) factory worker . Among normal group, there were 22(14.47%) workers, 28(18.42%) housekeepers, 10(6.58%) with no official job and 92(60.53%) were employees. Onset of presbyopia across various ages among smoking
group was different compared to normal group. Onset of presbyopia in patients aged from 30 to 35 years, was 4(1.97%) among smoking group and 2(0.66%) in normal group. 17 of smoking group aged 36-38 years were using glasses for near task while nobody reported using glasses in normal group. 90 patients with ages between 35-37 year among smoking group needed to use glasses for near tasks, but nobody in normal group needed presbyopic glasses. Among participants with 41-45 years of ages, 14(13.16%) of smoking patients and 115(75.66%) of normal group were presbyopia. 24(16.45%) of smoking patients below 45 years of age and 36(23.68%) of normal group used glasses for near tasks as shown in table.2

Table:2 Prevalence of presbyopia among various ages in smoking and normal groups (no=300).

<table>
<thead>
<tr>
<th>Age</th>
<th>Normal group (n=150)</th>
<th>Smoking group (n=150)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Percent</td>
<td>No</td>
</tr>
<tr>
<td>35-30</td>
<td>1</td>
<td>0.66</td>
<td>3</td>
</tr>
<tr>
<td>35-37</td>
<td>0</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>40-38</td>
<td>0</td>
<td>0</td>
<td>90</td>
</tr>
<tr>
<td>45-41</td>
<td>115</td>
<td>75.66</td>
<td>14</td>
</tr>
<tr>
<td>45&lt;</td>
<td>34</td>
<td>23.68</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100</td>
<td>150</td>
</tr>
</tbody>
</table>

Table3: Prevalence of onset age of addiction to smoking at different ages.

<table>
<thead>
<tr>
<th>Age onset of smoke</th>
<th>No</th>
<th>Percent</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-10</td>
<td>9</td>
<td>5.92</td>
<td>0.02</td>
</tr>
<tr>
<td>15-20</td>
<td>50</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>20-25</td>
<td>58</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>&gt;30</td>
<td>35</td>
<td>23.5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Interpretation: The most prevalent age of smoking was 15-20.

DISCUSSION:
A total of 300 participants’ records were evaluated. Of those, 150 cigarette smokers were categorized as samples and 150 normal patients as control group. 90 patients with ages between 35-37 year among smoking group needed to use glasses for near tasks, but nobody in normal group needed presbyopic glasses. There were significant differences in the age of onset and or progression of presbyopia were detected between smoking and normal patients (p<0.05).

A study was conducted in Iran by Khalaj. M in 2012 according to that A total of 304 participants’ records were evaluated. Of those, 152 cigarette smokers were categorized as samples and 152 normal patients as control group. Eighty-five patients with ages between 39-40 year among smoking group needed to use glasses for near tasks, but nobody in normal group needed presbyopic glasses. There were significant differences in the age of onset and or progression of presbyopia were detected between smoking and normal patients (p<0.05).\[17\]

Another study was conducted in Ethiopia in 2016 by Andualem. H in which Prevalence of presbyopia among school teachers was 68.7%. Out of the total examined subjects, 317 (50.2%) were females. On multivariate analysis, increased age, salary, work experience, cigarette smoking, pregnancy, and refractive error were positively and significantly associated with presbyopia. On the other hand, use of sunglasses and alcohol consumption were inversely and significantly associated with presbyopia\[18\].

Another study was conducted in 2006 by Parveen. K in Andhra according to that examined in the study were 5587 subjects 30 years of age or older (mean age 47.5 ± 13.0 years). The age-, gender-, and area-adjusted prevalence of presbyopia was 55.3% (95% confidence interval [CI]: 54.0–56.6). One third (n = 1173; 30.0%) of the 3907 subjects with presbyopia were currently using spectacles. Of the 2734 subjects with presbyopia and not using spectacles, 528 (19.3%) had moderate to severe difficulty in reading small print, and 2085 (76.3%) had moderate to severe difficulty in recognizing small objects and performing near work, including 1057 (38.6%) subjects who were unable to manage any near work. On multivariate analysis, female sex (OR: 1.4, 95% CI: 1.1–1.8), rural residence (OR: 1.5, 95% CI: 1.2–1.8), alcohol consumption (OR: 0.8, 95% CI: 0.6–0.9), nuclear opacity of the lens greater than grade 2 LOCS III (OR: 4.8, 95% CI: 1.4–16.8), myopia (OR: 1.6, 95% CI: 1.3–2.1), and hyperopia (OR: 3.6, 95% CI: 2.7–5.2) were associated with presbyopia\[19\].

CONCLUSION:
The results of this study indicate that the onset of presbyopia among smoking group was earlier than normal group. Statistically significant difference in the age of onset and progression of presbyopia was found between smoking and non-smoking patients.
Prevalence of Presbyopia amongst Smokers

REFERENCES:
Assessment of Inter-pupillary Distance Amongst Age group of 15-75 years Visiting Eye OPD at Hayatabad Medical Complex, Peshawar

Saifullah M.Phil(VS),MPH, FIACLE¹-Sadiqullah, MSc. FCPS².
Mutahir shahM.Phil VS,³ Komal Inam BVS⁴, Farah Amin BVS⁵

ABSTRACT
Aim: To determine the Inter-pupillary distance (IPD) among patients age group 15 to 75 years visiting Out-patient department Ophthalmology Hayatabad Medical Complex Peshawar and to compare the difference between male and female IPD.

Materials and Methods: A Hospital based cross-sectional descriptive study in which a total of 100 subjects were recruited from an Outpatient Ophthalmology department of Hayatabad Medical Complex Peshawar, using systemic random sampling and every 3rd patient in the selected age group, who is permanent resident of Peshawar, was taken. Distance and Near IPD were measured using a Pupillometer (NPI-200 Neuroptics) a gold standard technique and with Auto-refractometer (RM.8800 Auto-refractometer, Topcon, Tokyo, Japan). Each measurement was done thrice and the average was taken.

Results: A total of 100 subjects aged 15 to 75 years, which includes 50(50%) males and 50(50%) females. The mean IPD of all 100 subjects are 62.32±3.67 (95% Confidence Interval 61.33-63.31), with mean IPD and standard deviation of 63.66±3.70 and 60.99±3.60 for males and females subjects respectively. The overall mean age was 38.93 SD ±15.92 (39 SD ±16 years for male subjects, 38SD± 15years for female subjects). The FIPD and NIPD for all the study subjects were 62.66±3.69 and 60.13±3.10 when stratified among different age groups the mean IPD and standard deviation for all the study subjects were 61.30±3.55, 62.05±3.53, 62.60± 3.60 and 63.35±4.16 for 15-30 years, 31-45 years, 46-60 years and 61-75 years respectively.

Conclusions: It was concluded that IPD varies among different age groups, also statistically significant difference exist between male and female IPDs (P=0.014).

Keywords: Inter-pupillary distance (IPD), Pupillometer, Anthropometry, Far and Near Interpupillary distance'
sions IPD is greater in males then females.

Methodology
This Hospital based Cross-Sectional study was conducted to determine the Inter-pupillary distance among patients age group 15 to 75 years visiting out-patient department Ophthalmology, Hayatabad Medical Complex Peshawar and to compare the difference between male and female Inter-pupillary distance. The far inter-pupillary distance (FIPD) was taken as the distance between the centers of pupil when the subject fixate at distance. and Near Inter-pupillary distance (NIPD) were distance between the centers of pupil when the subject fixate at near preferably at 40 cm. The total duration of the study was 6 months. A sample of 75 was calculated using Open Epi, using a mean and standard deviation of 61.1 and ±3.5 for males and 63.6 and ± 3.9 for female from the study conducted by Fesharaki et al among Iranian populations. Adding 25 patients for non-respondents, so a total of 100 individuals were taken.

Using Probability Systematic Random sampling technique and every 3rd Patient who is permanent resident of Peshawar in the selected age group were included in the study. Subjects with media opacity, history of ocular trauma or surgery, history of severe head injury, congenital craniofacial mal-development, poor cooperation and problems in auto-refractometer and Pupillometer were excluded from the study.

All the subjects underwent detail eye examinations including visual acuity measurement, IPD measurement for distance and near using Pupillometer and Auto-refractometer. Distance IPD was measured for both eyes using the Auto-refractometer, while the subject was to be seated comfortably, and his/her forehead and chin were positioned correctly in the instrument. The distance IPD will also be measured using Digital PD meter set for distance. The subject was seated such that his/her eyes were at the same level as the examiner and the Pupillometer was gently placed over the subject eyes, with the examiner were looking through the Pupilmeter eyepiece and the patient focusing on the fixation target at the same time, the examiner was align the cross hair of the instrument with the subject’s corneal reflex. The distance IPD was recorded as the average of the three readings from the instrument in millimeter. The Pupillometer was then set for near and the procedure was repeated as for distance and the near IPD was recorded as the average of the three readings from the instrument in millimeters. Data was entered to SPSS version 16. Data was analyzed by using statistical tools namely descriptive statistics and independent student t Test was employed to test gender differences in IPD. All probabilities quoted were on two-sided and were considered statistically significant when less than 0.05.

Before collection of data Ethical approval was taken from the head of department of Ophthalmology unit Hayatabad Medical complex Peshawar. Subjects of the study were informed in simple language about the purpose of the study before collecting data.

results
The study comprised 100 subject aged 15 to 75 years in which 50(50%) were males and 50(50%) were female subjects. The mean IPD of all 100 subjects are 62.32±3.67 (95% Confidence Interval 61.33-63.31), with mean IP and standard deviation of 63.66±3.70 and 60.99±3.60 for males and females subjects respectively. The overall mean age was 38.93 SD ±15.92 (39 SD ±16 years for male subjects, 38SD± 15years for female subjects).The observed IPD range from 42mm to 72mm, when stratified in to 42-47mm(1%),48-52mm(1.5%),53-57mm(15%),58-62mm(43%),63-67mm(37%) and 68-72mm(2.5%), so 95% of IPD lies between the range of 53 to 67mm. The mean FIPD and NIPD for all the study subjects were 62.66±3.69 and 60.13±3.10.when stratified among different age groups the mean IPD and standard deviation for all the study subjects were 61.30±3.55, 60.05±3.53, 62.60± 3.60and 63.35±4.16 for 15-30years, 31-45years, 46-60years and 61-75years respectively.

Table 1: Gender wise distribution of FIPD among different age groups

<table>
<thead>
<tr>
<th>Age group</th>
<th>Male Mean FIPD SD</th>
<th>Female Mean IPD SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-30 years</td>
<td>63.15±3.30</td>
<td>59.45±3.6</td>
</tr>
<tr>
<td>31-45 years</td>
<td>63.46±3.30</td>
<td>60.65±3.5</td>
</tr>
<tr>
<td>46-60 years</td>
<td>63.85±3.95</td>
<td>61.35±3.2</td>
</tr>
<tr>
<td>61-75 years</td>
<td>64.14±4.23</td>
<td>62.53±4.05</td>
</tr>
</tbody>
</table>

Table 2 Comparison of IPD among different Populations

<table>
<thead>
<tr>
<th>Population</th>
<th>Gender</th>
<th>Age</th>
<th>IPD mean &amp; SD</th>
<th>Method Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian</td>
<td>Male</td>
<td>16.5-18 years</td>
<td>59.10 ± 2.70</td>
<td>Calculation</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>15-16.5 years</td>
<td>56.50 ± 2.10</td>
<td></td>
</tr>
<tr>
<td>Ijaws (Nigeria)</td>
<td>Male</td>
<td>18-65 years</td>
<td>69.60 ± 3.75</td>
<td>PD Rule</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>15-16.5 years</td>
<td>6.64 ± 2.79</td>
<td></td>
</tr>
<tr>
<td>Indian</td>
<td>Male</td>
<td>3 months-20 years</td>
<td>57.32 ± 4.87</td>
<td>Pupillometer</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>20 years</td>
<td>57.98 ± 4.78</td>
<td></td>
</tr>
</tbody>
</table>
Assessment of Inter-pupillary Distance Amongst Age group of 15-75 years Visiting Eye OPD at Hayatabad Medical Complex, Peshawar

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>16-24 years</td>
<td>66.00 ± 3.40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>64.00 ± 3.40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>±</td>
</tr>
<tr>
<td></td>
<td>Calculation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japanese</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghanaian</td>
<td></td>
<td></td>
<td>10 - 20 years</td>
<td>66.11 ± 3.44</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12 - 20 years</td>
<td>64.74 ± 3.192</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>±</td>
</tr>
<tr>
<td>Pakistan</td>
<td></td>
<td></td>
<td>05-60 years</td>
<td>62.15±2.85</td>
</tr>
<tr>
<td>(Karachi)</td>
<td></td>
<td></td>
<td></td>
<td>61.60±2.32</td>
</tr>
<tr>
<td>Pakistan</td>
<td></td>
<td></td>
<td>15-75 years</td>
<td>63.66±3.70</td>
</tr>
<tr>
<td>(Peshawar)</td>
<td></td>
<td></td>
<td></td>
<td>60.99±3.60</td>
</tr>
<tr>
<td></td>
<td>Calculation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

The anthropometric dimensions of the individual majority are idea to be exaggerated by geographical, racial, ethnic, gender and age factors. It is therefore essential that, a normative anthropometric data of ocular and peri-ocular measurements based on the above factors might be essential in identifying Ocular pathologies as well and precisely determining the degree of deviation from the normal.10

It is evident from the literature that IPD is dependent on factors such age, gender, race and ethnicity. Mean and median IPD measurement for normal adult humans are estimated to be 63mm and the findings of the present study for the adult Peshawar population were 62.32±3.67 which are almost approaching the above mention value. Considering the extremes, the bulk of adults have an IPD ranging from 50mm to 72mm while the finding of the present study were ranging from 48mm to 72mm which again almost similar to the results of the present study.11 In children age less than 5years, IPD may be as small as 40mm or even it may be 30mm in neonates. As evident from literature IPD differ among races. However IPD quoted in the most recent studies as ranging from 50mm to 75mm, which again similar to the upper range of the present study while the lower range were significantly different. The possible reason for this difference is that most of the studies conducted among adult age group and very few data are available on the children IPD as these are the most challenging cases and is a subject of much greater variation. The global observation for IPD is 63.5mm; then again no citation was certain by origin to support this observation. The difference of 1.18mm from this international standard is the evidence, that IPD is a subject of variation.12 The observed increase in mean IPD with increasing age were of 0.75mm, 0.55mm and 0.75mm in the second to third decade, third to fourth, fourth to fifth which were less than study conducted by Fesharaki et al among Iranian population which imply IPD increase approximately 4.8mm during the second decade, 1.7mm during the third decade and 0.6mm during the fourth and fifth decade of life. The possible reason for this observed increased among the Iranian population is that the IPD were measured with Auto-refractometer, which overestimate the IPD.13

A research paper conducted by Hofstetter14 among adults in the USA and he observed mean IPD, 90% of subjects keep between 60mm and 70mm and 99.8% recline between 55mm and 75mm; these findings are relatively same with the findings of the present study, which revealed that 95% of the subjects having IPD ranging from 53mm to 67mm and about 98% of were in the range of 53mm to 72mm. Regarding the IPD changing with age, Alsin15 revealed that the mean IPD increased by a 60% from 40mm among neonates to about 65mm among adults, however evidences from literatures shows that these large changes occurs in the infancy continuous up to 17 years of life and even up to the age of 30.4years, in spite of this in the present study children were excluded while among adults age groups the observed increase in IPD with increasing age were almost consistent to the finding of literatures.16

With regard to gender difference, in the present study the mean IPD in males are 2.65mm greater than females which are almost consistent with the finding of literature; a gender difference reported by Shafiee et al, males IPD are 2.45mm larger than females among Indian population.17 Similarly a difference of 2.5mm were reported by Fesharaki et al among adults in Iranian population.18 On the other hand Gupta et al,19 reported that gender did not have an effect on IPD measurement among Indian populations. Comparing to females, most of the skeletal dimensions among males are greater, therefore the large IPD parameter if in males are most likely due to the larger dimensions of craniofacial skeleton.

A study conducted by Saba Alkhairyet al, the estimated mean IPD for adult 61.87±, which were less than the findings of the present study. The possible reason for this could be that in there sample, children predomi-
nated. However the gender wise values for males and females were 62.15 and 61.6 which were less than the findings of the present study. The possible reason for this could be that in Dow University Karachi in specific and overall population of Karachi in general have different ethnic groups and races. Although the sample size was sufficient, but the results can’t be generalized because the sampling technique implied was nonprobability. The results of present study can be generalized to Peshawar population because all the subjects were included using systematic random sampling technique.20

CONCLUSION

It was concluded that IPD is affected by age and gender variations. There is statistically significant difference between male and female IPDs (P=0.014). Like most of the skeletal dimensions IPD is greater in males than females.

REFERENCES:


History of Ophthalmology

Prof. M. Yasin Khan Durrani

1- A nomenclature from Dinosaur Ophthalmosaurus, an “Eye Lizard” (A Class of Reptilia)

Ophthalmosaurus (meaning “eye lizard” in Greek) is an ichthyosaur of the almost entire Late Jurassic period (162-150.8 million years ago), named for its extremely large eyes, relative to its body size in the animal kingdom. It was first discovered and named in 1874 by Harry Seeley, comically large in comparison to the rest of its features. It has a ring of overlapping bones called a sclerotic ring in the eye socket. These bones protected and supported the eyeball and indicated that the eyes were very large. Hence, the name **Ophthalmology**, probably been derived from dinosaur Ophthalmosaurus.’ The sources of the inspiration of the name Ophthalmology are the large eyes of Ophthalmosaurus.

Ophthalmosaurus’ chief claim to fame is its large eyes about 9 inches or 220–230 mm in diameter. The dinosaur was approximately 16 feet long and weighed around 2 tons i.e., 6,000 pounds, about the length of a Beluga (white whale) but twice of its weight. It is currently unclear why these marine reptiles went extinct, but more than likely it was due to increased competition from other Pliosaurs and Plesiosaurs of the same family. It may also have gone extinct due to the predatory pressure from primitive sharks such as Hybodus. The size of the eyes and the sclerotic rings suggests that Ophthalmosaurus hunted at a depth where there is not much light or that it may have hunted at night when a prey was more active. Ophthalmosaurus lived in oceans worldwide as a marine adapted reptile. The dinosaur could dive to greater depths to dive to 600 meters and return to the surface within 20 minutes. It is now an extinct marine reptile.

There are many different ways to choose a dinosaur name that describes something unusual about its body, the eyes, head, or feet. Some are named after the location where they are found, others are named after the location where they are found, others are named after their behavior or size, and some are even named to honor a person.

2. Etymology of Ophthalmology:
Another version, the word **ophthalmology** comes from the Greek roots **ophthalmos**, i.e., “eye” and -logia, i.e., “study of” Period of early Ophthalmology:
The pre-Hippocratics (Greek Physicians) largely based their anatomical conceptions of the eye on speculation, rather than empiricism (based on observation). They recognized the sclera and transparent cornea running fleshly as the outer coating of the eye, with an inner layer with pupil, and a fluid at the center. It was believed, by Alcamaeon and others, that this fluid was the medium of vision and flowed from the eye to the brain by a tube. Aristotle advanced such ideas with empiricism. He dissected the eyes of animals, and discovering three layers. He put forth the existence of three tubes leading from each eye met within the skull. The Greek physician Galen remedied some mistakes including the curvature of the cornea and lens, the nature of the optic nerve, and the existence of a posterior chamber.

Rufus: Rufus of Ephesus recognized a more modern eye, with conjunctiva, extending as a fourth epithelial layer over the eye. Rufus was the first to recognize a two-chambered eye, with one chamber from cornea to lens (filled with water), the other from lens to retina (filled with an egg white-like substance).

Vesalius discovered ciliary body, the sclera, retina, choroid, and cornea were seen to meet at the same point. The two chambers were seen to hold the same fluid, as well as the lens being attached to the choroid. Galen continued the notion of a central canal, but he dissected the optic nerve and saw that it was solid. He mistakenly counted seven optical muscles. He also knew of the tear ducts.


Malpighi used hand lenses, van Leeuwenhoek used microscope in the 17th and 18th centuries Ruyesch and Petit them for fixing the eye for study. This allowed for detailed study of the eye.

van Leeuwenhoek noted the existence of rods and cones in 1722, but Gottfried Reinhold Treviranus in 1834 properly discovered them.

Georg Joseph Beer (1763–1821) an Austrian ophthalmologist introduced a flap operation for treatment of cataracts (Beer’s operation).

The Islamic Golden Age: Abbasid Caliphate, succeeded the Prophet Muhammad (Pbuh), as it was the beginning of a new era of intellectual rebirth in the Abbasid domain virtually in every field of Astronomy, Alchemy, Mathematics, Medicine, especially the Optics. The Caliphate’s scientists were in the forefront of scientific advancement. The Abbasid historical period lasting to the Mongol conquest of Baghdad in 1258 and the Caliphate Empire was considered as the Islamic Golden Age. The Abbassids were influenced by the Qur’anic injunctions and Hadith” stressing the value of knowledge. During this period the Muslim world became an intellectual center for science, philosophy, medicine and education as the Abbassids championed the cause of knowledge and established the House of Wisdom in Baghdad: where both Muslim and non-Muslim scholars sought to translate and gather all the world’s knowledge of Islamic astronomy, mathematics, medicine and the technology in the Islamic world into Arabic.

Harun al-Rashid (786–809) and his successors fostered an age of great intellectual achievement. Scientists living under Islamic rule played a role in transmitting Islamic sciences to the Christian in the West.
Mustansiriya University in Baghdad.

Ibn al-Haytham (Alhazen), the father of Optics (1021), developed an early scientific method in his Book of Optics the intromission theory of light (that is, that light rays entered the eyes rather than being emitted by them) was particularly important. Alhazen played a significant role in the history of scientific method, particularly in his approach to experimentation, and has been referred to as the true scientist and the father of Optics. Medicine in medieval Islam was an area of science that advanced particularly during the Abbasids' reign. During the 9th century, Baghdad contained over 800 doctors, and great discoveries in the understanding of anatomy and diseases of the eye were made.

John Freke was the first ophthalmic surgeon in U.K at St Bartholomew’s Hospital in 1727.

Baron Michael Johann Baptist de Wenzel (1724–90), a German was appointed as oculist to King George III of England in 1772. His skill at removing cataracts legitimized the field.

Moorfields Eye Hospital. The first dedicated ophthalmic hospital was opened in 1805 in London.

Sir Stewart Duke Elder established the Institute of Ophthalmology (now part of the University College London) as the largest eye hospital in the world and a nexus for ophthalmic research. Prof. Yasin Durrani, (the author of this article) had the honor of being his student in 1971. While Prof. Mahmood Ali, in charge of JPMC Ophthalmic Unit was his first Pakistani student in fifties.

Ernst Abbe (1840–1905). A prominent opticians of the late 19th and early 20th centuries, a co-owner of the Zeiss Jena factories in Germany where he developed numerous optical instruments.

Hermann von Helmholtz (1821-1894) invented the ophthalmoscope in 1851. They both made theoretical calculations on image formation in optical systems and had also studied the optics of the eye.

History of Ophthalmology in Pakistan.
Mayo Hospital, Lahore. The hospital building was completed in 1870 and it began operating in 1871. The hospital was named after the then Viceroy of British India, “Richard Bourke, 6th Earl of Mayo” also locally known as Lord Mayo. The architecture of the hospital is Italian, designed by Pudon and engineered by Rai Bahadur Kanahya Lal, one of the leading architects of that time. However the architectural influence resembles medieval hospitals built during the Middle Ages.
INSTRUCTIONS TO AUTHORS

(According to PMDC rules/instructions, recently designed criteria/SOP of Higher Education Commission, Islamabad and concurrent policy of Ophthalmology Update, it should be strictly followed).

Aims & Scope of the Journal: The aims of the journal is to propagate the advancement of the original research work in the field of medical sciences and to encourage the young researchers/authors to embark on the latest developments in their respective fields under the strict supervision/guidance of a senior faculty/Head of the Department (preferably a full professor) in the particular subject. The journal covers the whole medical and allied professions especially Ophthalmology. All materials submitted for publication should be directly sent to Ophthalmology Update by the principal author himself and not through any representative or any pharmaceutical organization. Please make sure that your article is originally researched and not a repetition of the documented facts already published or present in the text books. Otherwise you will be disappointed if the articles is rejected. Ethical Aspects. If articles, tables, illustrations or photographs, which have already been published are included in the articles, a letter of permission for republication (or its excerpts) should be obtained from the author(s) as well as the editor of the journal where it was previously published. All illustrations or photographs should be sent in duplicate. Fake authorship or plagiarized research article will not be published. Articles from the genuine authorship will only be accepted. Short communications, excerpts, papers presented at a scientific meeting and not published anywhere else will not be considered as a breach of this rule. All the articles will be reviewed by external reviewers from the University/Institutions/R&D organization, other than the HEI institutions.

Abstract of the original article should be in the structured form with the sub-headings i.e., objective, design, place and duration of the study, introduction, patients and methods, result, discussion/recommendation and conclusion.

Introduction should include the purpose and rationale of the study. The contribution of quality research articles from other universities/institutions and R&D organization pertaining to scientific and related disciplines will be accepted after due approval of the reviewers. Articles related to social sciences will not be entertained. In order to give wider readership, original research articles pertaining to most current and important topics/subjects will only be re-published after due permission from the editor of the respected journal and the principal author after being checked through Turnitin. Articles/research papers, already published or accepted elsewhere for publication should not be submitted for re-publication. Authors are strongly advised to submit only two research articles/papers in a year. All papers/articles are normally subjected to be examined by “Turnitin” to find any plagiarism. The similarity index of each article must be within HEC defined range of i.e.,<+19%.

The processing and publication charges are Rs. 15,000/- for each article, which must be pre-paid along with the article, therefore, contributors are strongly advised. After publication of the article, only one complimentary copy of the journal will be supplied freely to the principal author. Additional copies or co-authors can purchase the journal at the rate of Rs. 500/- each or on the exiting price. In case the article covers more than 4 pages, extra cost will be levied for printing and publication as indicated by the management from time to time. This amount caters the fee of two reviewers, cost of printing, TCS, postal and labor charges. The amount can be remitted through Bank draft, preferably on line/bank transfer to A/C: No 145-20620-714-126749 through Sind Bank (Code: 145, for other banks: code is 010405), Markaz F-10, Islamabad, Pakistan in the name of Ophthalmology Update and be forwarded at 267-A, St: 53, F-10/4, Islamabad.

In case the articles are rejected by the reviewers, 50% of the processing charges will be refunded. The material submitted for publication should be in the form of original research, review article, short communication, a case report, recent advances, new techniques, review on clinical/medical education, a letter to the editor, medical quiz, highlights, updates, news and views related to the fields of medical sciences. Author should keep one copy of the manuscript for reference and send 3 photo-copies or a CD of the article in MS word form to the managing editor of Ophthalmology Update. Photocopies of the article are not accepted.

Before submitting the article, instructions should be completely followed along with the processing fee which keeps on changing accordingly to the printing and publication cost. Since the journal is a quarterly publication, being published with utmost regularity on the 1st of the ensuing month of Jan, April, July and October. It is, therefore, important to ensure that the article/manuscript is submitted well in time, at least a month before the publication date/last date, allowing the editorial board to get the article reviewed well in time at least a month before the publication date/last date, allowing the editorial board to get the article reviewed well
INSTRUCTIONS TO THE AUTHORS

in time. It has been noted with regret, that some authors pester the management to get the articles published within the shortest possible time which is technically not possible. Editorials are written by invitation through E-Mail>ophthalmologyupdate@gmail.com only.

Principal author should provide his photograph along with qualification, designation, place of posting of all the authors including correspondent, their fax with his E-Mail address and cell number including his postal /corresponding address. All authors should declare the contributing role in preparing the article in terms of:
1. proposed topic, basic study design, methodology, and manuscript writing
2. Date collection, statistical analysis and interpretation of result.
3. Literature review, referencing and quality insurer.

It is extremely important to get permission from the Head of the Department of the Hospital/ or Ethical Committee, permitting the authors to conduct the study in an approved institution and under the supervision of a guide from the same institution. A word for the new researchers/authors, it has been noticed that they just mail their articles soon after completing the manuscript. It is strongly advised that they should read the article repeatedly and get it checked up by his supervisor for any scientific/grammatical/computer mistakes. Improperly and unchecked articles will be returned to the author.

All drugs and chemicals used should be identified precisely with generic names, doses and route of administration, the method and the apparatus used should be described in detail in order to establish co-relation with the results and method.

The article based on dissertation be submitted as part of the requirement for fellowship, can be sent for publication after it has been approved by relevant authority for the grant of fellowship. Dissertation based article should be re-written in accordance with the instructions mentioned here. Only two tables/graphs are allowed to be incorporated in the articles if absolutely necessary.

Every paper will be edited by two staff editors and finally will be reviewed by one or two senior professors /consultants /internal or external reviewers from other countries in the relevant subject.

The Results should be presented in a logical sequence of the text, tables or illustrations. Only important observations should be emphasized or summarized.

As far as the discussion is concerned the authors comments on the result, supported with contemporary references (in short), including arguments and analysis of identical work done by others should be mentioned briefly. A brief acknowledgement can be made at the end. Authors are strongly advised to avoid unnecessary repetitions of the subject material through tables, figures and graphs. Only two tables/graphs are allowed to be incorporated in the articles if absolutely necessary.

Conclusions should be provided under separate heading, highlighting new aspects arising from the study. It should be in accordance with the study.

Material printed in Ophthalmology Update is the copyright of the publisher; no part of this publication may be reproduced without the permission of the editor/publisher and should not be published elsewhere or submitted for publication except the abstract. Material should not be stored in any retrieved system or transmitted by any other means i.e., electronic, mechanical, photo-copying, recording or otherwise without prior permission from the managing editor. The Editorial board makes every effort to ensure the accuracy and authenticity of the material printed in the journal. However conclusions and the statements expressed are the views of the authors and do not necessarily reflect the opinions of the Editorial Board. Publishing of advertising material does not imply any endorsement by Ophthalmology Update. It is a controlled circulation journal, entirely for the medical and allied professions. It does not guarantee directly or indirectly the quality and efficacy of any product or service described in the advertisement or other material, which is extremely commercial. All ideas forwarded completely reflect the individual views of the authors. A proper undertaking pertaining to the transfer of copy rights to Ophthalmology update should be signed by all the authors or at least by the corresponding author and be forwarded to the managing editor along with the article.

Address for correspondence:
The Managing Editor, Ophthalmology Update
267-A, Street: 53, Sector F-10.4, Islamabad 44000
E. Mail>ophthalmologyupdate@gmail.com
website: www.Ophthalmologyupdate.com