CONTENTS

EDITORIAL-I
Welcome to new Administration of HEC & PMDC

EDITORIAL-II
Femtosecond Lasers Vs Phacoemulsification Technology

OPHTHALMIC SECTION
1. Efficacy of Intra-lesional Injection of 5- Fluorouracil in Preventing Progression of Recurrent Pterygium
   Inam ul Haq

2. Postoperative Outcome in Terms of Recurrence after Pterygium Excision with Bare Sclera Technique & Suture-Less amniotic Membrane Transplantation Technique.
   Zulfiquar Ali

3. Important Guidelines for Ophthalmologists Special Considerations for Ophthalmic Surgery during Covid-19 Pandemic
   Jahanzeb Durrani

4. Incidence of Torch Pathogens in Bilateral Congenital Cataracts
   Nasar Khan

5. Role of Bevacizumab in External Dacryocystorhinostomy
   Zeeshan Kamil

6. Treatment of Pterygium by Conjunctival Autograft: A Comparison of Fixation Technique
   Qirat Qurban

   Zeeshan Kamil

GENERAL SECTION
8. Practices of Nurses in Administration of Safe Medication
   Qammer Javed

9. Frequency of Helicobacter Pylori in Carcinoma of Stomach
   Farman Ullah Shah

10. Comparison of Tramadol and Ketorolac as Post-operative Analgesia in Open Cholecystectomy
    Aurang Zeb

11. Clinical Spectrum and Surgical Management of Patients with Chiari-I Malformation
    Zahid Ullah Khan


13. Histopathological Evaluation of Thyroid Lesion
    Shazia Naz

14. Assessment of Nursing Practice in Delivering Safe Medication-I
    Ryeesa Patres

15. INSTRUCTIONS TO AUTHORS
It is heartening to welcome the new administrative set up of both HEC and PMDC, an important regularity bodies of medical profession, after repeated changes especially in PMDC.

As far as HEC is concerned, the medical journals have been facing tremendous hardships due to its previous policy which resulted in demotion of 24 of out of 57 indexed journals of highly prestigious and leading institutions of the country. The appointment of Prof. Dr. Muhammad Tahir Ali Shah Ph.D., as Director R&D for accreditation of National Research Journals from July’2020, it will certainly augur a new chapter in the affairs of Medical Journalism for promoting and guiding the research activity in Pakistan. Prof. Shah is a prominent scholar with rich experience in academic horizon. We, also request him to expand the list of expert professionals from the medical field to cover most of the medical subjects in order to assure the quality of Journals.

As far as the PMDC is concerned, the medical fraternity welcomes the Honorable: Justice Ejaz Afzal Khan as President of PMDC, and Brig® Hafeez uddin Siddiqui as Registrar of PMDC. In the past, our doctors have suffered a lot especially the fresh graduates and the Medical Journals. The presence of a young and energetic Dr. Ghazia Irfan as officer in-charge of the section of Medical Journalism has given us a great sense of relief in the new administrative set-up. In fact, serious problems were faced by the Medical Journals which were under-looked for a long time. It is most unfortunate that some of the internationally indexed journals had been deregistered on the trivial pretext of non-payment of renewal fee etc etc., which was duly paid well in time. The irony of fate is that some of the journals have paid the renewal fee twice yet remained un-acknowledged. If the editors made any query their letters always remained unanswered. We sincerely hope that Dr. Ghazia, an active and a prominent professional will look into the affairs of Medical Journals which needs to be streamlined with immediate effect in a softer way.

PMDC & HEC are highly prestigious regulatory bodies of the medical profession and we will be right to reckon them as the face of our profession, fully responsible to promote the research culture in the country. Moreover, these institutions should change their attitude not as a critical administrators but as helpful guides for the journals with the sole motto “how to improve the quality of the research work”. CPSP used to hold the training workshops for authors and editors on the subject of conducting research which have been, unfortunately, withdrawn. We request CPSP to re-start those workshops for training the young researchers and editors to improve their knowledge pertaining to the dwindling state of research in the country.

Prof. Dr. M. Yasin Khan Durrani
FRCOphth (Lond)
Chief Editor, Ophthalmology Update,
E.Mail: Ophthalmologyupdate@gmail.com
267-A, St: 53, F-10/4, Islamabad
0333 5158885.

WELCOME TO NEW ADMINISTRATION OF HEC & PMDC
Femtosecond Lasers Vs Phacoemulsification Technology

Femtosecond is a recent development in the history of eye surgery, approved by FDA in 2010. It is used to create cleavage planes for wounds, arcuate keratotomies, anterior capsulotomies, presbyopic correction, nuclear fragmentation in cataract surgery via photo-disruption in transparent and translucent tissues with the aid of optical coherence tomography (OCT). Femtosecond laser also improves safety and outcomes in select medical conditions i.e., Fuchs dense corneal guttata, subluxed crystalline lens and mature cataract. In Pakistan laser is popularly used against improvement of myopic refraction in order to get rid of spectacles.

In fact, it does not carry any additional risk as compared to small incision phaco-emulsification cataract surgery and produces a greater level of precision for creation of tissue planes than manual techniques. As such it offers more precise incisional astigmatism management, lens centration (through capsulotomy) with reduced phaco energy as in nuclear fragmentation. However, some think that there is not sufficient evidence to suggest that. Use of Femtosecond offers better outcomes than incision phacoemulsification cataract though cost-effective in all cases. Currently surgeons charge patients out of their pockets for advanced technology, is not justified as a new method in their armamentarium. However, opinions differ amongst surgeons regarding the techniques, safety and complications.

Though Femtosecond offers few disadvantages but definite refractive advantages for patients undergoing cataract surgery, standardized capsulotomy, and greater precision and predictability with laser arcuate incisions. The laser capsulotomy affects ultimate lens position as the capsular bag shrinks around the IOL. However, it is extremely beneficial for treating dense cataracts.

No doubt, the ultimate goal of laser treatment is to give the patient a premium surgical experience, but we do not believe that it will completely supplant phacoemulsification technology or replaces traditional phacoemulsification. However, the femtosecond technology will ultimately replace the manually executed incision and capsulotomy steps in the cataract procedure.

Using a femtosecond laser to perform refractive or cataract surgery increases the safety and efficacy and delivers more reliable and stable postoperative refractive outcomes as compared to standard phacoemulsification, providing better visual quality. It also results in reducing trauma to the cornea and macula, although further studies are needed to improve the outcomes through perioperative care.

With manual phaco, corneal incisions are not optimised and can result in astigmatism and infection. Likewise, the capsulorhexis size is variable and not centered, leading to erratic IOL position and defective lens power. Lens fragmentation is currently used with excessive ultrasound power and may result in delayed visual recovery, loss of endothelial cells and capsular rupture.

In Summary, Several studies have confirmed the superior centration and circularity of capsulotomies created by the femtosecond laser. More efficient lens fragmentation is another clear advantage with reduced phaco time and power. There is also reduced macular thickness, patients are mostly younger adults and are happy to pay extra cost for the laser procedure, but they are also more demanding as a result.

Dr. Jahanzeb Durrani, M.S.
Prof. M. Yasin Khan Durrani, FRCOphth
Ph: 051 2222927/1255,
E.Mail> ophthalmologyupdate@gmail.com
**ABSTRACT**

**Purpose:** To study the effectiveness of 5 FU, injected into the dome of Pterygium, in preventing progression of recurrent Pterygium.

**Method:** 10 eyes of 10 patients who had recurrent Pterygium over riding cornea by 2.0 mm or less were injected 2.0 mg of 5 FU into the dome of fibro vascular tissue. They were seen for 03 weeks, if progression was not stopped a repeat injection was given.

**Results:** In 7(70%) out of 10 treated eyes after one injection, Pterygium became clinically atrophic. In 3 (30%) eyes clinical improvement was not observed, in these eyes a second injection was given after 03 weeks. In one eye third injection was given. These patients were observed for 10 months. Clinically Pterygium was quiet. No significant complication related to the use of 5 FU was observed.

**Conclusion:** This study showed that intra-lesional injection of 5 FU into the dome of fibro vascular tissue is useful in preventing progression of recurrent pterygium. This approach should be tried first before surgically treating recurrent pterygium.

**Key words:** Pterygium; Recurrent pterygium; 5 fluorouracil; antimetabolites.

**INTRODUCTION:**

Pterygium is a visually disabling disorder and if not treated properly and well in time it can result into gross visual disability, leading to blindness. In cases where visual axis is covered by the fibro vascular growth, even after surgery, corneal scar remains and vision is not restored completely. Pterygium is a triangular or wing shaped encroachment of conjunctiva encroaching upon the cornea. It may be stationary or progressive and may induce diplopia. A number of risk factors such as exposure to warm, dusty, windy and sunny environments along with exposure to UV light have been reported. Definitive treatment of pterygium is surgical excision with or without adjunctive therapy. Simple excision of primary pterygium is associated with high recurrence rate of 33-45%. Removal of recurrent pterygium is difficult due to corneal thinning, symblepharon and extension of scar tissue to recti muscles.

**Injection of 5 FU into the dome of fibro vascular proliferating tissue away from the cornea is useful in preventing progression of recurrent Pterygium as observed by researchers. This approach should be tried first before surgically treating recurrent Pterygium.**

Several techniques have been tried to reduce the fibro vascular activity aiming to reduce the rate of recurrence such as beta-irradiation, conjunctival and limbal auto-grafting, anti-mitotic drugs and amniotic membrane transplantation.

**METHOD:**

This study was undertaken from October 2017 to July 2018 at CMH, Okara. It is an agricultural town in central Punjab where weather is hot and humid and dust storms are frequent in summer. Pterygium is quite prevalent in this town.
Inclusion criteria:

i. Patients with history of pterygium excision, once and complaining of re-growth.

ii. Pterygium 2.0 mm or less encroaching on the cornea.

Patients were briefed about the surgical procedure after obtaining written consent.

Exclusion Criteria:

i. Pterygium larger than 2.0 mm.

ii. History of pterygium excised twice or more.

iii. History of conjunctival malignancies.

iv. Atypical looking fibrovascular conjunctival growth.

On the basis of inclusion criteria and ethical approval, patients were informed about their disease process and surgical options. These patients were examined on slit lamp and size of pterygium was measured. They were injected with 2.0 mg/0.2 ml of 5 FU into the dome of fibrovascular tissue away from the cornea under topical anesthesia. An experienced Ophthalmologist selected the patients and carried out the procedure. After the surgery and completion of procedure the eye was padded for 24 hours.

Tobramycin in combination with dexamethasone eye drops, three times a day for 02 weeks, lubricating eye gel twice daily for one month and combination eye ointment (antibiotic with steroid) before sleep for 01 month were used, and they were observed for 03 weeks.

Individuals which showed inactivity, i.e., like looking less vascular or atrophic changes were continued on lubricating eye gel or drops. Redness or increase in size were considered as signs of progression. Individuals showing signs of progression, a repeated injection was given after 03 weeks. Post injection regimen was followed and they were observed for another one month. Arrest of progression was defined as no further advancement of conjunctival growth and vascularity over 03 follow up visits, 2-3 weeks apart. All patients were followed for 10 months.

RESULTS:

Patients ranging between the 23 to 51 years of age, average being 35 years were included in the study. Out of 10 eyes from 10 patients, 07 patients were males and 03 were females. In 70% patients, i.e. seven out of 10 treated eyes after one injection; pterygium became clinically atrophic, and less vascular. In 30% patients, i.e. in three eyes clinical improvement was not observed. In them redness persisted and size increased. In these eyes a second injection was given after three weeks. In 10% patients, i.e. one eye out of 10, activity persisted after 2nd injection. In this patient third injection was given. In six patients (60%) there was sub-conjunctival hemorrhage, which resolved after 02 weeks. Patients had ages between 23 to 51 years, average 35 years. Out of them 07 (70%) patients were males and 03 (30%) females. These patients were observed for 10 months. Clinically pterygium was quiet in all patients. No significant complication related to the use of 5 FU was observed.

DISCUSSION:

Treatment of choice for Pterygium is
surgical excision with or without adjunctive therapy. The management of pterygium includes avoiding risk factors such as exposure to smoke/dust, use of hat/spectacle to block ultraviolet rays and relief of symptoms using topical lubricants, vasoconstrictors and steroids. Recurrence is the most common undesirable outcome of surgery. There are different surgical techniques of excision along with intra-operative and postoperative use of Mitomycin C, 5 FU and Daunorubicin to prevent recurrence, have been described along with other modalities of treatment including beta irradiation, topical Thiotepa. Multiple surgeries is a risk factor for recurrence in itself.

Recurrence of pterygium is thought to be due to fibroblastic proliferation and migration. 5 FU inhibits fibroblastic activity and therefore useful in reducing recurrence rate. 5 FU is toxic to proliferating cells and is considered safer than other anti-mitotic agents. In Pikkel J et al study maximum of four injections were given with maximum dose of 3 mg to prevent recurrence. In Yokoi M et al 19 study up to 10 injections totaling 50 mg of 5 FU were given with no complications. In cases with high chances of recurrence high doses of 5 FU appears to be safe, effective and well tolerated by the eye. In Said DG et al study (20 93.3%) patients showed regression of fibro vascular tissue and arrest of progression following a dose of 0.1–0.2 ml (2.5–5.0 mg) of 5 FU intra-lesional injection. These results are similar to our study. Maldonado et al in their study concluded ineffectiveness of 5 FU in preventing recurrence of primary pterygium, it is in contrast to our study where 5 FU was injected in recurrent pterygium and one injection was effective in 70% patients. In the study carried out by Tan et al stated 92% recurrence rate within six months of surgical excision. In our study 60% patients had pterygium excision 05-07 months back, 20% had excision 08 months back and 10% had surgery 10 months back. Multiple factors contribute in the recurrence. Chances of recurrence increase with each surgical excision.

CONCLUSION:

Injection of 5 FU into the dome of fibro vascular proliferating tissue away from the cornea is useful in preventing progression of recurrent pterygium. This approach is recommended in patients with recurrent pterygium, who have had 2 mm or less of fibro vascular growth encroaching upon the cornea.

REFERENCES:

16. CO, Baiyeroju AM, Olusanya BA, Ashaye AO, Oluleye TS. Pterygium treatment using 5-FU as adjuvant treatment compared to conjunctiva autograft. Eye. 2006;22
Postoperative Outcome in Terms of Recurrence after Pterygium Excision with Bare Sclera Technique & Suture-Less amniotic Membrane Transplantation Technique.

Zulfiqar Ali FCPS1, Danish Zafar FCPS2, Hina Shafique FCPS3, Faiza Ikram FCPS4, Fazale Hanan FCPS5, Sadiq Ullah FCPS6

ABSTRACT
Objective. Pterygium is a fibro vascular overgrowth of degenerative bulbar conjunctiva, extending from the medial canthus, growing over the limbus onto the adjacent cornea of the eye with the apex pointing towards the pupil. It occurs worldwide, and is more common in the tropical and subtropical regions mainly caused by ultra violet light and dry dusty climates with an overall prevalence of 17%1,2. Material and Methods: Sample size was calculated using the WHO software for sample size determination in health studies using the formula of hypothesis test for two population proportions (two-sided), with the following assumptions: Significance level = 5%, Statistical power = 80%, Proportion of patients having recurrence with pterygium excision followed by amniotic membrane transplantation = 19.2% (study by Liang et al).3 Proportion of patients having recurrence with pterygium excision with bare sclera technique = 50% (study by Detorakis et al).4 Therefore, 50 patients in each group were included in the study. More over consecutive (non-probability) sampling technique was used for sample collection. Results: Our study shows that in group A (Suture-less amniotic membrane transplantation) mean age was 33 years ± 3.19, whereas in group B (Bare sclera technique) mean age was 35 years ± 3.77. Recurrence among two groups was analyzed and in group A (Suture-less amniotic membrane transplantation) 10 (20%) patients had recurrence while in group Bare sclera technique 28 (56%) patients had recurrence. Conclusion: Our study concludes that suture-less amniotic membrane transplantation technique had low recurrence rate as compared to bare sclera technique after pterygium excision. Key Words: Recurrence, Bare sclera technique, Suture-less amniotic membrane transplantation technique, Pterygium excision.

INTRODUCTION
Pterygium is a fibro vascular growth of degenerative bulbar conjunctiva, extending from the medial canthus, growing over the limbus onto the adjacent cornea of the eye with the apex pointing towards the pupil. It occurs worldwide, and is more common in the tropical and subtropical regions mainly caused by ultra violet light and dry dusty climates with an overall prevalence of 17%.1,2 The prevalence in some Asian countries may be as high as 30.3 Its male to female ratio is 2:1 and has the highest prevalence in the age group of 20-40 yrs.4 It causes chronic irritation and discomfort, restricted ocular motility, disruption of the precorneal tear film, and is cosmetically unacceptable.3,4 Association between astigmatism and pterygium is documented.5

Our study concludes that suture-less amniotic membrane transplantation technique had low recurrence rate as compared to bare sclera technique after pterygium excision. The initial redness and irritation caused by pterygium can be controlled by lubricant eye drops.6 However, the most commonly accepted treatment for pterygium is surgical excision. Surgery, becomes essential when the visual axis is threatened and/or when the pterygium causes severe irritation or cosmetic blemishes.7 Recurrences after pterygium excision are frequent and aggressive.8 Recurrent pterygia have higher rates of subsequent recurrence than primary pterygia, thus taking measures to reduce the recurrence rate is very important.5 Pterygium excision with bare sclera technique, first described

-------------------------------------------------------------------------------------------
1 Associate Professor Department of Ophthalmology Ayub Medical Institution, Abbotabad 2 Assistant Professor Department of Ophthalmology Ayub Medical Institution, Abbotabad 3 Consultant in Department of Ophthalmology Ayub Medical Institution, Abbotabad 4 Associate Professor at Radiology Ayub Medical Institution Abbotabad. 5 Associate Professor Frontier Medical College, Abbotabad. 6 Associate Professor Hayatabad Medical Complex Peshawar.

Correspondence: Dr.Zulfiqar Ali, Associate Professor, Department of Ophthalmology, Ayub Medical Institution Abbotabad. Phone no # 0300-9154099 e.mail.drzulfiqarali@gmail.com.

Received: May’2020 Accepted: June’2020
by D’Obraim in 1948 was the surgical treatment of choice for a longtime. It is still very common because of its simplicity. It is considered an inferior procedure today because of its associated high recurrence rate. Several techniques have been tried to reduce the rate of recurrence after excision such as β-irradiation, conjunctival and limbal auto-grafting, anti-mitotic drugs, and amniotic membrane transplantation (AMT).

The rate of recurrence after pterygium surgery with AMT is lower than that of bare sclera method. AMT is an effective, safe and easy procedure with no complication. This study is designed to compare the two techniques with respect to the outcome of recurrence in our setup. The results will help in instituting protocols based on local evidence thus decreasing burden of expenditure for patients and health system that are encountered in terms of recurrence. The lowered frequency of recurrence in the population will encourage them to seek appropriate treatment with satisfaction instead of seeking other remedies.

MATERIAL AND METHODS:
Sample size was calculated using the WHO software for sample size determination in health studies using the formula of hypothesis test for two population proportions (two-sided), with the following assumptions: Significance level = 5%, Statistical power = 80%, Proportion of patients having recurrence with pterygium excision followed by amniotic membrane transplantation = 19.2% (study by Liang et al.) Proportion of patients having recurrence with pterygium excision with bare sclera technique = 50%

The study was carried out in Department of Ophthalmology, Ayub Teaching Institution Abbottabad through Randomized Controlled Trial for approximately one year.

RESULTS:
This study was conducted at Department of Ophthalmology, Ayub Teaching Institution Abbottabad in which a total of 100 patients were observed (50 patients in each group) to compare the postoperative outcome in terms of recurrence after pterygium excision with bare sclera technique and suture-less amniotic membrane transplantation technique and the results were analyzed. Age distribution among two groups was analyzed as in group A (Suture-less amniotic membrane transplantation) 19(38%) patients were in age range 20-30 years, 31(62%) patients were in age range 31-40 years. Mean age was 33 years ± 3.19. Where as in group B (Bare sclera technique) 20(40%) patients were in age range 20-30 years, 30(60%) patients were in age range 31-40 years. Mean age was 35 years ± 3.77. (Table #2)

Gender distribution among two groups was analyzed as in group A (Suture-less amniotic membrane transplantation) 28(56%) patients were male and 22(44%) patients were female. Where as in group B (Bare sclera technique) 29(58%) patients were male and 21(42%) patients were female. (Table #3) Recurrence among two groups was analyzed as in group A (Sutureless amniotic membrane transplantation) 10(20%) patients had recurrence while 40(80%) patients didn’t have recurrence. Where as in group B (Bare sclera technique) 28(56%) patients had recurrence while 22(44%) patients didn’t have any recurrence. (Table #1)

Stratification of recurrence with age, gender is given in table no.2,3

Table #1: Outcome

<table>
<thead>
<tr>
<th>Recurrence</th>
<th>Group A (n=50)</th>
<th>Group B (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10(20%)</td>
<td>28(56%)</td>
</tr>
<tr>
<td>No</td>
<td>40(80%)</td>
<td>22(44%)</td>
</tr>
<tr>
<td>Total</td>
<td>50(100%)</td>
<td>50(100%)</td>
</tr>
</tbody>
</table>

Table 2: Age Distribution (n=100)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Group A (n=50)</th>
<th>Group B (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30 years</td>
<td>19(38%)</td>
<td>20(40%)</td>
</tr>
<tr>
<td>31-40 years</td>
<td>31(62%)</td>
<td>30(60%)</td>
</tr>
<tr>
<td>Total</td>
<td>50(100%)</td>
<td>50(100%)</td>
</tr>
</tbody>
</table>

Mean and SD: 33 years ± 3.19 35 years ± 3.77

Group A: suture-less amniotic membrane transplantation
Group B: bare sclera technique

T Test was applied in which P value was 0.0051

Table 3: Gender Distribution (n=100)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Group A (n=50)</th>
<th>Group B (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>28(56%)</td>
<td>29(58%)</td>
</tr>
<tr>
<td>Female</td>
<td>22(44%)</td>
<td>21(42%)</td>
</tr>
<tr>
<td>Total</td>
<td>50(100%)</td>
<td>50(100%)</td>
</tr>
</tbody>
</table>

Group A: suture-less amniotic membrane transplantation
Group B: bare sclera technique
Chi square test was applied in which P value was 0.8399

DISCUSSION

Pterygium is a degeneration of bulbar conjunctiva, and one of the most commonly occurring ocular surface disease. It is more common in the tropical and subtropical regions mainly due to exposure to the adverse environmental factors. It is more common in males with a high prevalence in the age group of 20-40 yrs. It causes chronic irritation and discomfort, restricted ocular motility, disruption of the precorneal tear film, and is cosmetically unacceptable. It also affects the visual acuity either by directly affecting the visual axis or by producing changes in the corneal curvature. An ideal technique for the treatment of pterygium will be the one that is complication free, safe, has good cosmetic results and has low recurrence rate. In this regard numerous innovations have been introduced for the management of pterygium all with the aim of relieving patient symptoms and lowering the rates of recurrence. One of the earliest methods of treating pterygium was Bare Sclera Technique. In bare sclera excision, the pterygium is excised from the cornea, conjunctiva, and underlying Tenon’s tissue, leaving bare sclera exposed. However it is associated with high recurrence rates as high as 50%. Newer techniques involved the use of cytotoxic medications, for example, Mitomycin C and 5-Flourouracil and the use of Beta Radiation. These techniques although inhibited the fibro vascular proliferation they also produced adverse effects by disrupting the normal physiological and biochemical mechanisms occurring in the ocular surface. The techniques of conjunctival autografting and amniotic membrane transplantation were introduced to overcome these complications along with decreasing the rate of recurrence.

A study conducted by Liang et al., showed pterygium recurrence after AMT to be 19.2%, this rate can further be decreased to 10.5% if amniotic membrane transplantation is done using suture-less technique. Similar findings were observed in another study conducted by Khan et al., in which 118 patients were included in this study. Out of the 118 cases, 74 (63%) were male and 44 (37%) were female. 30 patients were operated with bare sclera technique, 34 were with conjunctival auto graft and in 54 eyes amniotic membrane was grafted. i.e. 36.6% recurrence was noted in group A, in-group B, 3 (8.8%) cases developed recurrence & four (7.40%) developed corneal recurrence in-group C. The ages of the patients ranged from 15-60 years. It was concluded that free conjunctival auto graft & amniotic membrane graft, are better and safe techniques, for prevention of recurrence after pterygium surgery as compared to bare sclera method. Absorbing excessive stem and progenitor cells may be one of the mechanisms of reducing the recurrence rate using these two techniques. Our study shows that in group A (Suture-less amniotic membrane transplantation) 19 (38%) patients were in age range 20-30years, 31 (62%) patients were in age range 31-40 years. Mean age was 33 years ± 3.9. Where as in group B (Bare sclera technique) 20 (40%) patients were in age range 20-30 years, 30 (60%) patients were in age range 31-40 years. Mean age was 35 years ± 3.77. In group A (Sutureless amniotic membrane transplantation) 28 (56%) patients were male and 22 (44%) patients were female. Where as in group B (Bare sclera technique) 29 (58%) patients were male and 21 (42%) patients were female. Recurrence among two groups was analyzed as in group A (Suture-less amniotic membrane transplantation) 10 (20%) patients had recurrence while 40 (80%) patients did not have recurrence. Where as in group B (Bare sclera technique) 28 (56%) patients had recurrence while 22 (44%) patients did not have recurrence. Our study shows that suture-less and glue-less Amniotic membrane transplantation is an effective procedure for treating pterygium that considerably lessens recurrence and has the added benefit of improved postoperative patient comfort and early recovery.

CONCLUSION

‘Our study concludes that suture-less amniotic membrane transplantation technique had low recurrence rate as compared to bare sclera technique after pterygium excision.

REFERENCES

5. Janson BJ, Sikder S. Surgical management of pterygium.


1. IRRIDODIALYSIS

A old man with type 2 diabetes mellitus attended the Eye clinic for a routine ocular examination, with a history of cataract surgery 3 years ago and retinal detachment in the eye. Clinical examination revealed a white sheet covering the upper third of the iris. Visual acuity was 6/60 in the right eye and 6/9 in the left eye.

D.D. Loculated hypopyon, Ghost cell glaucoma, Synchysis scintillans, Silicone oil hyperoleon Iridodialysis.

Curtesy:
Donato Colantuono, M.D., Eric Souied, M.D., Ph.D.
Centre Hospitalier Intercommunal de Créteil, Créteil, France
ABSTRACT

Objective: To determine the functional outcome of frontalis suspension by Fox Pentagon for congenital ptosis using polypropylene suture in patients with congenital ptosis having poor levator function by quasi experimental study.

Material and Methods: After getting IRB approval and written consent from every patient, 22 patients of any age or gender, with congenital ptosis, and having poor levator function ≤ 4mm were included in this study. It was conducted at ophthalmology department, Khyber Teaching Hospital Peshawar for a period of 12 months (Jan. 2019- Dec. 2019). Pre-operatively, complete ophthalmic examination including detailed ptosis evaluation was done by ophthalmologist. Surgical technique used was Fox pentagon and surgical material used was monofilament polypropylene 4/0. Functional success as well as complications was determined during post-op follow up period of 6 months. Data recorded and analyzed using SPSS version 23.

Results: Out of 22 patients, 13 (59.1%) were male and 9 (40.9%) were female. 4 patients (18.2%) had bilateral involvement. Mean age recorded was 14.05±9.85 years with range of 2.0 to 45.0 years. Functional outcome described in terms of MRD≥3 mm and satisfactory lid symmetry was obtained in 20 out of 22 patients (90.9%) with a significant p-value of 0.034 (≤ 0.05). Post-operative complications noted were recurrence (4.5%), exposure keratopathy (13.6%), infected wound (4.5%), granuloma (9.1%), and lagophthalmos (18.2%).

Conclusion: This study has concluded so far that the synthetic polypropylene sling can be used effectively with better functional outcome, less recurrence, and comparable risk of few post-operative complications.

Keywords: Blepharoptosis, polypropylene, recurrence, granuloma, wound infection.

Corona virus has created a dreadful panic throughout the world including Pakistan. There are more dangerous and fatal microbes throughout the world, we are not fully aware of them. Corona Virus was discovered in 1937 in poultry industry and badly affected human in 1960 after transfer. The main reason for spread of Corona virus that the Chinese people consumed the meat of wild animals as bats, rats, snakes, dogs, cats, lizards mouse and crocodiles as their favorite dishes and Corona virus got easily transmitted to human beings. In fact, it is basically an animal virus.

People with chronic conditions, including diabetes, hypertension, and obesity, have faced higher mortality from Covid-19.

According to W.H.O report the mortality rate of diarrhea, gastroenteritis and heart diseases are much more higher due to complications as approximately 2 lac people die each year. In Pakistan out of 8, one dies due to such fatal disease each year like tuberculosis another fatal killer in our country. If we analyze these figures comparing to lesser death toll by the corona virus since 15 Dec 2019, in Wuhan city of China as compared to other countries i.e., USA, Italy Iran, South Korea, Japan, including Europe and America where total death toll is much higher.

But Corona changes its genetic form it spreads in humans. Corona virus has different types i.e., 229E, OC43, NL63, HKUI, MERVOC, SARS-COV, N-COV 2019. First four viruses create common flu, and the rest are generally habituated to them. But in all these cases the mortality rate was not more than 10 %. When we compare
all previous outbreaks of viruses mentioned, the mortality rate was very low i.e., only 2%. The incubation period (from infection to appearance of symptoms) is 2 – 14 days. Symptoms of Corona virus resemble with common cold and flu e.g. fever, headache, cough and pulmonary involvement.

We should keep in mind that this disease spreads more in people having low immunity. Virus can spread by shake hand, sneezing, coughing and touching the face or nose. This virus can survive up to nine days. It is killed in 30° to 40° C, normally virus will die down on the start of hot season. We should not be panic and consult your own doctor for the confirmation of disease through antibody and PCR. According to WHO no exact vaccine is discovered for corona virus up till now. No anti-viral drug is available. He should wear masks and gloves and keep his hands dry. Don’t go near the pets like dogs, cats and other animals in the house.

Clothes and other used utensils should be washed with 65% ethanol solution, 1 % Sodium Hydrochloride or 5 % Hydrogen peroxide solutions. This virus can be killed in 1 minute by washing with these chemicals. In Pakistan corona virus has created quite discomfort and concern on a larger scale, hence there is a dire need that the basic information and treatment be provided to common man to avoid involvement.

No doubt diseases and other calamities is a test from nature but it is our duty to face all these problems resolutely. There is a sense of fear and panic and wave of uncertainty amongst people who are not aware of the disease. It is our duty to educate people about the present situation and to follow the instructions given by the health department.

According to renowned virologists at Maria Bashir Institute of Infectious Diseases & Biochemistry at University of Sydney and Hassan Valley Epidemiologist at Melbourne’s La Trobe University with other associated Australian Virologists claim that the Corona Virus is a zoonotic virus originally stemming from animals to humans. In fact, it is a bat and pangolin virus RaTG13 and researchers have debunked the un-founding speculations as no system exists in the laboratories to make certain changes in its morphology. Hence, according to genetic studies virus mutation is natural and not man-made.

Ophthalmologists can resume full surgical practice as we are offering important guidelines as recommended by the Academy of Ophthalmology “how the COVID-19 pandemic will impact on the surgical decision-making regarding pre-operative testing of patients and the use of personal protective equipment (PPE) by the surgeon and the staff during surgery. In general, the scientific basis to estimate the risk of COVID-19 or SARS-CoV-2 infection during ophthalmic procedures are scientifically under active observation for ophthalmic surgery.

Evidence of virus in the pre-ocular tear film

SARS-CoV-2 which belongs to the family of COVID-19 has been cultured from the pre-ocular tear film in cases with conjunctivitis at Wuhan, China and viral RNA has been found by RT-PCR in several cases without ocular signs. That does not mean that the patients had viral replication in the conjunctiva in the absence of clinical infection. They might have rubbed their eyes with a contaminated hand or tissue shortly before the test or contacted through aerosol—PCR is a very sensitive test.

Povidone-iodine 5% used in a surgical preparation before procedure, effectively inactivates the hidden viruses used in ophthalmic practice. Since there is no evidence of replicating virus in the intraocular fluid but absence does not entail its total elimination. The Emory Eye Center is working with its infectious diseases team in tear film sampling. Preliminary validation studies suggest that it is feasible to utilize this assay to test ocular fluids. However, there are currently a few case reports of meningo-encephalitis but no SARS-CoV2 was found in cerebrospinal fluid in seminal fluids or testicular biopsy (after postmortem)

The phaco-emulsification procedure starts with an anterior chamber filled with visco-elastic and being replaced by BSS irrigation with possibility of Aerosolization when the ultrasound is engaged, it would be BSS which is aerosolized and not the patient’s aqueous, which is extraordinarily a low incidence. In the case of pars plana vitrectomy, the entire vitreous is not replaced by visco-elastic. The virus can be neuro-invasive, hence intraocular virus is theoretically possible. And yet, despite of millions of cases of COVID-19 worldwide, there is not a single case report of uveitis or retinitis associated with the infection. Vit-
rectomy is performed with a closed surgical system, often with valved trocar cannulas. For these reasons, the best evidence available suggests it is unlikely that there would be sufficient virus present through aerosolization during pars plana vitrectomy to infect a surgeon or the operation staff.

The use of Personal Protective Equipment (PPE) is under active considerations for phaco-emulsification and vitrectomy by the surgeon and the operation staff.

For patients not suspected of COVID-19 infection, standard surgical PPE should suffice. However, a policy to test every surgical patient by RT-PCR would lower the theoretical risk of acquiring COVID-19 from an asymptomatic patient. The surgical mask should be replaced by a surgical N95 mask, and eye protection or face shield should be worn as feasible during the use of operating microscope under constraints if IgM/IgG is positive. Another option is to wait 6 weeks from whenever the patient tested positive by any means, and then use standard surgical PPE. In a true ophthalmic emergency with a patient who tests IgM negative and SARS-CoV-2 RT-PCR negative but presents with other symptoms or high-risk features, an N95 mask and face/eye protection should be used as available.

Ocular manifestations of COVID-19

Follicular conjunctivitis

A case report described the clinical ocular manifestations of a 30-year-old male with COVID-19 in China. The man presented with typical systemic symptoms and was diagnosed with bilateral acute conjunctivitis, 13 days after illness onset. After initial presentation with a sore throat and diarrhea, the patient tested positive for SARS-CoV-2 and developed pulmonary symptoms. His vital signs stabilized after beginning treatment with various medications including umifenovir, lopinavir and ritonavir on day 6 and beyond. On day 13, the patient developed redness of both eyes along with foreign body sensation and tearing. Visual acuity was not significantly affected. Slit lamp examination revealed bilateral moderate conjunctival injection, watery discharge, inferior palpebral conjunctival follicles and tender palpable pre-auricular lymph nodes. Conjunctival swabs tested positive on RT-PCR for SARS-CoV-2. The patient was prescribed ribavirin eye drops and showed a decrease in conjunctival viral load on day 17. All ocular symptoms resolved by day 19, which coincided with negative conjunctival RT-PCR test results. This case suggests that SARS-CoV-2 RNA can be present during active infection of the conjunctiva, resulting in acute follicular conjunctivitis. The viral RNA levels in this patient’s conjunctival specimens were much lower than in the respiratory samples and appeared to gradually decrease over 5-day course of conjunctivitis.

Recommendations for Urgent and Non-urgent Patient Care

Due to the COVID-19 pandemic, the American Academy of Ophthalmology now finds it essential that all ophthalmologists providing treatment other than urgent care should have to make decisions about protocols for use of personal protective equipment, antibody testing of staff, expectations as to social distancing, and scheduling templates to accommodate new clinical protocols. Make no mistake, SARS-CoV-2 is with us. The risk of virus transmission and serious illness or death is still with us. Each practice and organization will need to make its own decisions based in part on local factors. We all want to get back to work, do what we were trained to do and fulfill our mission of protecting sight and empowering lives—while keeping everyone as safe as possible.

The virus can cause conjunctivitis, being transmitted through aerosol or direct contact. Patients who have fever and respiratory symptoms including cough and shortness of breath, and have recently traveled internationally, particularly to areas with known outbreaks with COVID-19. We recommend protection from contact with mouth, nose and eyes when caring for patients infected with the virus. COVID-19 is very much susceptible to alcohol and bleach-based disinfectants that the ophthalmologists commonly use to disinfect ophthalmic instruments and the office furniture. To prevent transmission, the same practices are already being used to avoid office-based spread of other viral pathogens and are recommended before and after every examination of the patient.

According to Journal of Medical Virology scientists studied patients hospitalized for COVID-19, who had conjunctivitis and the virus particles were present in ocular secretions. The virus is believed to spread primarily via person-to-person through respiratory droplets of an infected person’s cough or sneezing. It also could
spread if people touch an object or surface with virus present from an infected person. Viral RNA has also been found in stool samples from infected patients, raising the possibility of transmission through the fecal/oral route. Therefore, protecting your mouth, nose with (e.g., an N-95 mask) and eyes with (e.g., goggles or shield) is recommended while examining the patients potentially infected with COVID-19. In addition, slit-lamp breath shields are helpful for protecting the ophthalmologist and the rooms should be thoroughly disinfected as a routine.

Is it safe for me to go to work?
Risk stratification for workers during the covid-19 pandemic

People with chronic conditions, including diabetes, hypertension, and obesity, have faced higher mortality from Covid-19. In a large case series, the case fatality rate was less than 0.5% among people under 50 years of age, 1.3% among those up to 60, and 3.6% among those up to 70. People with diabetes had a risk of death three times that of the overall cohort. These data suggest that the case fatality rate may approach 10% for people who are in their 60s and have diabetes. The Centers for Disease Control and Prevention (CDC) reports that health care workers account for at least 11% of reported SARS-CoV-2 infections. One hospital in Spain reported that 11.6% of its 6800 employees tested positive for the virus. In addition, high rates of infection have been reported among workers in journey, grocery, and maintenance occupations, in which physical distancing is difficult.

With these odds, should clinicians be advising persons at heightened risk for death from Covid-19 to consider stopping work in settings with a high risk of exposure? If a person’s occupational risk of becoming infected and risk of death from infection approaches 10%, their occupational mortality risk becomes 1 in 100 — 10 times the annual occupational mortality risk. We believe that a strategy to protect at-risk workers needs at least three components:

*A framework for counseling patients about the risks posed by continuing to work.
* Urgent policy changes to ensure financial protections for people who are kept out of work.
* A data-driven plan for the safe re-entry into the workforce.

Proposed framework for counseling patients during the pandemic.

We propose a framework to help clinicians to work in the midst of the pandemic that is based on their occupational risk of contracting SARS-CoV-2 and their risk of death if they are infected. Though data on occupational risk are limited, the Occupational Safety and Health Administration has published guidance and proposed a scheme for classifying the risk of SARS-CoV-2 infection as high, medium, or low based on potential contact with persons who may or do have the low, medium, and high-risk categories of individual risk of death from Covid-19 are based on age and the presence of high-risk chronic conditions identified by the CDC. Persons with high risk in both domains should consider stopping work, and those with high risk in one domain and medium risk in the other should discuss risk with their clinician.

Many people will be unable to stop working without additional financial support and protections. Our health care system relies on thousands of low-wage workers, including health care aides and environmental services workers to keep facilities clean and operational. Women and minorities are disproportionately represented in these jobs — nearly half of black female and Latina health care workers earn less than $15 per hour. Forgoing income even for a short period would be devastating to such workers’ ability to continue to meet basic needs, including housing, food, and health care. In USA people are being directed to self-quarantine by a medical professional is a qualifying reason to leave work and apply for unemployment insurance.

REFERENCES.

ABSTRACT
Objective: To study the incidence of TORCH pathogens in children presenting with bilateral congenital cataracts. It was a retrospective hospital based study in Ophthalmology department at Jinnah Postgraduate Medical Centre Karachi from 1st January 2019 to 30th June 2019.

Material and Methods: A total of 294 eyes of 147 children aged between 1 month to 1 year diagnosed with bilateral congenital cataracts were included in the study. TORCH profile was done from single laboratory. The aim of the study was to investigate the incidence between TORCH pathogens including toxoplasma, rubella virus, cytomegalovirus, and herpes simplex virus and bilateral congenital cataracts.

Results: Data entry and analysis was done on SPSS version 23. A total of 147 cases with 294 eyes. Among them 40(27.2%) were males and 107(72.8%) were females. Out of 147 patients, 107(72.8%) were negative for TORCH serology and 40(27.2%) were positive. Among all patients 50(34%) were males and 97(66%) were females. Among females 27(27.8%) were TORCH positive and among males 13(26%) were TORCH positive.

Conclusion: We concluded that TORCH pathogen infections are a risk factor for bilateral congenital cataracts.

Keywords: TORCH pathogens, Congenital cataracts, Children

INTRODUCTION
Cataract is a curable cause of blindness in childhood. It is defined as opacification of the lens. The incidence of cataracts is 72 per 100,000 children. Two-thirds of congenital cataracts are bilateral. Congenital cataract prevents the visual development in children. TORCH infections in utero cause congenital cataract. It consist of Toxoplasmosis, Rubella, Cytomegalovirus, Herpes Simplex and other infections such as hepatitis, human immunodeficiency virus, varicella and parvovirus. Viral infections acquired during pregnancy can affect the fetus and increase the risk of mortality in mother and fetus. Toxoplasmosis and herpes simplex virus infection rates are higher among pregnant women due to pet exposure. Lifestyle changes like raw food produces increased risk of TORCH infections in pregnancy.

The most common virus transmitted during pregnancy is cytomegalovirus which affects 0.5-1.5% children, and the most common intrauterine organism causing congenital cataracts is rubella virus. TORCH infection test is done in all infants with bilateral cataracts. TORCH screening test detects antibodies to Toxoplasmosis gondii, Rubella virus, Cytomegalovirus, Herpes simplex virus. TORCH infections can result in limb, eye, skin and neurological abnormalities and even death. Antibodies are produced in pregnant women as a result of infection and are accessible to fetus through placenta which persist after birth. [Rubella is the most common TORCH organism along with IgG antibody, most frequently present in bilateral congenital cataract. Cytomegalovirus and Herpes Simplex virus were seen less frequently.]

In this study we analyzed infectious etiology of congenital cataract in patients attending our ophthalmology department.
**MATERIALS AND METHODS:**

This study was conducted at Ophthalmology department in Jinnah Postgraduate Medical Centre Karachi, from 1st January 2019 to 30th June 2019. It includes 294 eyes of 147 children aged between 1 month to 1 year diagnosed with bilateral congenital cataracts. All affected children underwent a detailed history and ophthalmological examination. Informed consent was taken from parents or guardian of the children. Blood samples were collected and tested at a single laboratory for the presence of IgM and IgG antibodies to Toxoplasmosis gondii, Rubella virus, Cytomegalovirus and Herpes simplex virus (TORCH).

**RESULTS:**

A study was conducted at Jinnah Postgraduate Medical Center Karachi of 147 patients. Out of 147 patients, 107 (72.8%) were negative for TORCH serology and 40 (27.2%) were positive. The patients were divided into three groups according to age. The first group included patients with ages from 1 month to 4 months, second group of ages 5 months to 8 months and third group of ages 9 months to 12 months. In the first group out of 52 patients, 12 (23.1%) were positive for TORCH antibodies and 40 (76.9%) were negative. In the second group out of 52 patients, 16 (30.8%) were positive and 36 (69.2%) were negative. In the third group out of 43 patients, 12 (27.9%) were TORCH positive and 31 (72.1%) were negative for TORCH antibodies. Rubella was most frequently seen organism in all age groups. (Table-1).

In our study, 50 (34%) patients were males and 97 (66%) were females. Among females, 27 (27.8%) were TORCH positive and among males, 13 (26%) were TORCH positive.

**DISCUSSION:**

Among common etiologies of pediatric cataract, intrauterine infections are one of the most common causes.

In this study, Rubella with frequency of 28 (19%) followed by Cytomegalovirus present in 8 (5.4%), Herpes Simplex virus in 4 (2.7%) and none of them were positive for Toxoplasmosis antibodies and frequency of IgG and IgM given below.

<table>
<thead>
<tr>
<th>Organism</th>
<th>IgM Antibody Detected n (%)</th>
<th>IgG Antibody Detected n (%)</th>
<th>Ig M + Ig G Antibody Detected n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubella</td>
<td>5 (12.5)</td>
<td>21 (52.5)</td>
<td>2 (5)</td>
</tr>
<tr>
<td>Cytomegalovirus</td>
<td>1 (2.5)</td>
<td>6 (15)</td>
<td>1 (2.5)</td>
</tr>
<tr>
<td>Herpes Simplex</td>
<td>0</td>
<td>3 (7.5)</td>
<td>1 (2.5)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (15)</td>
<td>30 (75)</td>
<td>4 (10)</td>
</tr>
</tbody>
</table>

The most common TORCH organism in our study was Rubella with frequency of 28 (19%) followed by Cytomegalovirus present in 8 (5.4%), Herpes Simplex virus in 4 (2.7%) and none of them were positive for Toxoplasmosis antibodies and frequency of IgG and IgM given below.

**Table 1 (Distribution of patients by Age Group)**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>TORCH Reactive n (%)</th>
<th>TORCH Non-reactive n (%)</th>
<th>Total n</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4 Months</td>
<td>12 (23.1)</td>
<td>40 (76.9)</td>
<td>52</td>
</tr>
<tr>
<td>5-8 Months</td>
<td>16 (30.8)</td>
<td>36 (69.2)</td>
<td>52</td>
</tr>
<tr>
<td>9-12 months</td>
<td>12 (27.9)</td>
<td>31 (72.1)</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td>40 (27.2)</td>
<td>107 (72.8)</td>
<td>147</td>
</tr>
</tbody>
</table>

**Table 2 (Distribution of patients by Gender)**

<table>
<thead>
<tr>
<th>Gender</th>
<th>TORCH Reactive n (%)</th>
<th>TORCH Non-reactive n (%)</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>13 (26)</td>
<td>27 (54)</td>
<td>50 (34)</td>
</tr>
<tr>
<td>Female</td>
<td>27 (27.8)</td>
<td>73 (72.2)</td>
<td>97 (66)</td>
</tr>
<tr>
<td>Total</td>
<td>40 (27.2)</td>
<td>107 (72.8)</td>
<td>147 (100)</td>
</tr>
</tbody>
</table>

**Table 3 (Distribution of patients by TORCH organisms)**

<table>
<thead>
<tr>
<th>TORCH Organism</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubella</td>
<td>28</td>
<td>70</td>
</tr>
<tr>
<td>Cytomegalovirus</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Herpes Simplex</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Total TORCH Positive</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

**Table 4 (Distribution of patients by TORCH Antibodies)**

<table>
<thead>
<tr>
<th>Organism</th>
<th>IgM Antibody Detected n (%)</th>
<th>IgG Antibody Detected n (%)</th>
<th>Ig M + Ig G Antibody Detected n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubella</td>
<td>5 (12.5)</td>
<td>21 (52.5)</td>
<td>2 (5)</td>
</tr>
<tr>
<td>Cytomegalovirus</td>
<td>1 (2.5)</td>
<td>6 (15)</td>
<td>1 (2.5)</td>
</tr>
<tr>
<td>Herpes Simplex</td>
<td>0</td>
<td>3 (7.5)</td>
<td>1 (2.5)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (15)</td>
<td>30 (75)</td>
<td>4 (10)</td>
</tr>
</tbody>
</table>
antibody against TORCH infectious agents was positive in 75% of patients, IgM antibody in 15% while IgG+M in 10% of patients. Different studies done on this and concluded like this.

Lito et al concluded that IgG antibodies were positive for 93.3% rubella virus, 25.7% toxoplasmosis and 62.4% CMV in Portugal15. Villicic-Cavlek et al reported IgG antibodies rate of 29.1% toxoplasmosis, 94.6% rubella, 75.3% CMV, 78.7% HSV among pregnant women in Croatia16. Sen et al study showed IgM antibodies in CMV, Rubella, HSV in 19.4%,30.4%, 33.5% respectively17. In a study conducted by Sanjay 94.82% were positive for TORCH pathogens. Antibodies to Toxoplasma, Rubella, CMV and HSV were present in 36.21%, 86.21%, 89.66% and 13.79% respectively.

The rate of anti CMV IgM positivity was higher of about 32.76% than IgM anti-rubella of 12.07%18. Bin lu study shows higher sero-positivity of anti-HSV II IgG antibody in congenital cataracts8. In a study conducted by Mini Singh, IgM serology was positive for 5.8% rubella, 1.6% HSV and 8.3% toxoplasmosis gondii3. In previous Pakistani study done in children 23.52% were positive and 76.46% were negative for TORCH serology19. In Pakistan a study shows 3% positivity for IgM against Rubella and 34% positivity for IgG antibodies20.

CONCLUSION:
The results of our study show that Rubella is the most common TORCH organism along with IgG antibody most frequently present antibody in bilateral congenital cataract. Cytomegalovirus and Herpes Simplex virus were seen less frequently.

REFERENCES:
Role of Bevacizumab in External Dacryocystorhinostomy

Zeeshan Kamil FCPS, FRCS¹ . Qirat Qurban, FCPS². Khalid Mahmood FCPS³.
Khalid Eye Clinic, Karachi

ABSTRACT

Objective: The purpose of this study is to evaluate the effect of injection Bevacizumab through the external wound in reducing failure rate of dacryocystorhinostomy a quasi experimental study:

Methods: This study was carried out at Khalid Eye Clinic, Hospital, Karachi from January 2019 to August 2019. It included forty patients belonging to both genders with ages ranging from twenty five to fifty years. All the patients were randomly divided in to two groups with twenty patients in each group. Inclusion criterion was nasolacrimal duct obstruction with no prior surgical intervention. Patients of both groups underwent external dacryocystorhinostomy with suturing of both anterior and posterior flaps. Group A patients received injection Bevacizumab 5 mg in 0.02 ml through the external wound one week after the surgery. Group B patients did not receive any injection. All patients were finally reviewed four months after the surgery for silicone tube removal and assessment of nasolacrimal duct patency by injecting fluid through the lacrimal punctum. Outcome measure was successful irrigation of nasolacrimal system. All patients were informed about the study dynamics and approval was obtained from the institution’s ethical review board.

Results: This study included forty patients divided in to two groups with twenty patients in each group. Mean age was 37.4±2.3 years. In group A, nasolacrimal system was found to be patent in all twenty (100%) patients at four months, whereas nasolacrimal system was successfully irrigated in sixteen (80%) out of the twenty patients in group B.

Conclusion: Bevacizumab is an effective drug in reducing the failure rate of external dacryocystorhinostomy, but owing to the small sample size, this study could not significantly prove this. Larger scale trials are required to establish this fact.

Keywords: External dacryocystorhinostomy, Bevacizumab, nasolacrimal duct obstruction

INTRODUCTION

One of the common reasons for nasolacrimal duct obstruction, dacryocystitis, is an acute or chronic infective disease of the lacrimal sac. Conservative management adequately treats the acute phase whereas, the painless chronic phase which presents as an inner canthal swelling due to mucocele formation and reflux of mucopurulent discharge on regurgitation test necessitates Dacryocystorhinostomy (DCR). Nasolacrimal duct obstruction could also be due congenital or acquired reasons and may take place anywhere from the lacrimal puncta to the nasolacrimal duct caused my multiple reasons which make a careful detailed history crucial, such as enquiring about the symptoms, functional status, associated comorbidities, medications used and other risk factors, in making the diagnosis of obstruction of the nasolacrimal duct, as the cause of tearing, in contrast with reflex tearing due to other reasons.¹ DCR is a surgical method which helps remove the retained mucus, debris and infective material from within the lacrimal sac ensuing tear drainage and therefore eradicates (epiphora). Performing DCR involves the surgical removal of the bone adjacent to the nasolacrimal sac followed by joining of the lateral nasal mucosa with the lacrimal sac, thereby resolving the obstruction of the nasolacrimal duct and establishing a direct drainage of tears from the lacrimal canaliculi into the nasal cavity by reducing resistance. With a success rate of about 90%, Dacryocystorhinostomy (DCR), has proven itself to be a triumphant surgical procedure in curing epiphora due to nasolacrimal duct obstruction (NLDO) resulting in reduced tear outflow.²³

Bevacizumab is an effective drug in reducing the failure rate of external dacryocystorhinostomy.
Even though with a high success rate, like any surgical procedure, significant failure rate still exists in external DCR. It is mainly because of the obstructive postoperative adhesions, common canaliculi obstruction and obstruction due to granulation tissue development at the osteotomy site. [5, 6] Intra and post operative adjuncts that prevent the expansion of fibrous tissue along with reduction of scarring above the anastomosed flaps and osteotomy site should enhance the success rate. 4 VEGF is the major factor behind the regulation of angiogenesis such as wound healing, tumor growth, and inflammation. 5 Studies have been done which have shown that VEGF acts as a pro inflammatory factor to rouse the liberation of inflammatory factors, such as IL6, IL8, and TNFα. 6 Anti- VEGF agent, Bevacizumab (Avastin), is a humanized monoclonal antibody that binds and inhibits the biological activity of all VEGF subtypes and hence helps prevents formation of scar tissue which leads to the failure of external DCR. 7

These observations have lead researchers to believe that VEGF may have a pivotal role in the promotion of wound healing secondary to regulation of angiogenesis and inflammation. Bevacizumab (Avastin), was used in this study post operatively to evaluate its effect in reducing the failure rate of external dacryocstorhinostomy as compared to those who did not receive anti VEGF injections.

MATERIAL AND METHOD

This study was carried out at Khalid Eye Clinic, Karachi from January 2019 to August 2019. It included forty patients belonging to both genders with ages ranging from twenty five to fifty years. All the patients were randomly divided in to two groups with twenty patients in each group. Inclusion criterion was nasolacrimal duct obstruction with no prior surgical intervention, patients between the ages of 25 to 50 years, complaint of watering of eyes, chronic dacryocystitis and compliance with the follow up visits. Exclusion criteria comprised of history of ocular trauma or surgery, active allergy, infection, or inflammatory disease at the ocular surface, systemic disease affecting the ocular surface and history of contraindication to bevacizumab use. Patients of both groups underwent conventional external dacryocstorhinostomy with suturing of both the anterior and posterior flaps. Group A patients received injection Bevacizumab 5 mg in 0.02 ml via 27G needle through the external wound one week after the surgery. Group B patients did not receive any injection. All patients were finally reviewed at the end of the four months follow up period for silicone tube removal and assessment of nasolacrimal duct patency by injecting fluid through the lacrimal punctum. Outcome measure was successful irrigation of nasolacrimal system. All the surgeries were performed by a single oculoplastic surgeon (ZK). All patients were informed about the study dynamics and approval was obtained from the institution’s ethical review board.

RESULTS

This study included forty patients divided in to two groups with twenty in each group. Age ranges from twenty five to fifty years, mean age was 37.4±2.3 years. There were twenty three (57.5%) males and seventeen (42.5%) females. There were involvement of right nasolacrimal system in nineteen (47.5%) patients and left nasolacrimal system in twenty one (52.5%) patients. In group A nasolacrimal system was found to be patent in all twenty (100%) patients at fourth month, whereas nasolacrimal system was successfully irrigated in sixteen (80%) of patients in group B, p value =0.065 (Fisher’s Exact Test). Mean follow up period was 121±6 days. No other complications such as wound dehiscence, infection, excessive post operative mucosal bleeding, tube loss was not observed in any patients of either group.

DISCUSSION

Dacryocstorhinostomy (DCR), in spite of having a good success rate, has reported failure rate of up to 18%, due to obstruction of the ostium or due to the presence of granulation tissue, scarring and development of adhesions in the nasal cavity. [4,8] Needless watering of the eyes in post surgical procedure along with failure to irrigate the lacrimal system is generally regarded as an ineffective surgical attempt.

A study was done McPherson and Egelston among patients requiring revision of the surgical procedure and noted the occurrence of a thick scar tissue at the osteotomy site. 9 Similarly another study done by PICO on patients requiring a subsequent surgical procedure found the presence of an occluding membrane composed of structured granulation tissue ensuing in failure of the primary surgery. 10 These observations lead to the belief that restricting the propagation of fibrous tissue at the osteotomy site and the anastomosed flaps would
result in augmentation of the surgical outcome after DCR procedure.

Vascular endothelial growth factor (VEGF) has a pivotal role in the formation of vessels, promoting migration of the endothelial cells and inflammation.13 Keeping this in mind, anti-VEGF therapy can cause the degeneration and inhibition of new blood vessels, hence reducing the extent of granulation tissue formation and play an important role in the prevention of failure of DCR. Lee et al reported the first ever role of increased VEGF in the development of pterygium in 2001 thereby, explaining that by giving anti-VEGF such as, Bevacizumab, may lessen the proliferation of fibroblast and limit pterygium recurrence owing to the potential to cause contraction and regression in the vascular caliber of pterygium blood vessels.12,13

Anti-VEGFs already have a proven role in the treatment of multiple ocular problems such as proliferative diabetic retinopathy and age-related macular degeneration.14,15,16 Bevacizumab administration as a topical agent is ineffective owing to it being a full length immunoglobulin with a high molecular weight and therefore it is too large to penetrate the intact epithelium.17 Kao et al compared and documented the surgical outcomes of external DCR with intraoperative MMC (Mitomycin C) use versus DCRs without MMC application.18 MMC blocks the production of DNA, cellular RNA and protein by stopping collagen creation via fibroblasts. They observed that MMC favorably affects the ostium and enhances the success rate of the surgery. It was also found that there were no adhesions in the MMC group by PICO and Gordon et al.19,20

To the best of our knowledge, only one study by Salehi et al has been conducted to evaluate the success rate of using topical Bevacizumab in reducing the failure rate of external dacryocystorhinostomy. Topical Bevacizumab (Avastine) eye drops (5 mg/ml) were instilled every 6 hours in one group of 2 weeks post DCR surgery and the patients were evaluated for failure of DCR 2 weeks and 3 months after the surgery. It was found that the patients who received Bevacizumab eye drops did not report any surgical failure whereas in the other group which did not receive any anti VEGF eye drops, 1 patient in 2 weeks and 2 patients in 3 months follow up showed failure.21 These findings were in accordance to this study. Instead of topical Bevacizumab, injection Bevacizumab 5 mg in 0.02 ml via 27G needle was used through the external wound one week after the surgery among the patients of Group A who reported 100% success rate at fourth month follow up period, whereas 80% success rate was found among patients of Group B who did not receive anti VEGF injections. No other complications such as wound dehiscence, infection, excessive post operative mucosal bleeding, tube loss was not observed in any patients of either group.

Nasolacrimal duct obstruction after primary DCR is mainly due to decrease in the size of the healed intranasal ostium site with granulation tissue as a result of a normal wound healing response.22 To prevent closure of the stoma, local application of adjuvants such as MMC, anti VEGFs (Bevacizumab) are used for the reticence of the wound remedial course and the prevention of scar development in the ostium site. With newer techniques constantly evolving, the core surgical principle of DCR remains constant, making it a less invasive, safe procedure with long lasting success. In the wake of recent studies, the role that Bevacizumab has proven to improve the successful accomplishment rate of DCR.23

CONCLUSION

Bevacizumab is an effective drug in reducing the failure rate of external dacryocystorhinostomy, but owing to the small sample size, this study could not significantly prove this. Larger scale trials are required to establish this fact.

REFERENCES
Role of Bevacizumab in External Dacryocystorhinostomy

Treatment of Pterygium by Conjunctival Autograft: A Comparison of Fixation Technique

Ophthalmology Department  BHY Hospital, Karachi

Qirat Qurban FCPS1. Zeeshan Kamil, FCPS, FRCS2 . Shehla Dareshani FCPS3

ABSTRACT
Objective: The target of this study is to identify an appropriate technique for the fixation of conjunctival autograft in patients undergoing Pterygium excision. It was a quasi experimental study
Material and methods: This study was carried out at BHY Hospital, Karachi, from April 2019 to July 2019 and incorporated fifty patients of ages ranging from 20 to 45 years having primary pterygium. All the patients were randomly categorized into two groups with twenty five patients in each group. Patients of both groups were scheduled to undergo pterygium excision followed by conjunctival autograft. The difference between both groups was in the fixation method of the conjunctival autograft which was done via using seven suture technique in group A and using autologous serum in group B. The main outcome measures was observing for graft lost and recurrence of pterygium encroaching onto the cornea at the conclusion of the three months follow up period. Patients of both groups were counseled about the study dynamics and informed verbal consent was obtained. Approval was taken from the ethical review committee of the institution.
Results: This study included fifty patients, divided in to two groups. Mean age was 31.2±4.56 years. Graft loss was significantly high in Group B (autologous serum) with 24% as compared to Group A (sutures) with 4% (p-value = 0.049). Recurrence of pterygium was noted in two (8%) of group A patients, and three (12%) of group B patients (p-value = 0.50).
Conclusion: This study concluded that there is almost symmetrical recurrence noted in both the fixation techniques but graft loss was higher with the use of autologous serum.

Keywords: Pterygium excision, conjunctival autograft, autologous serum

INTRODUCTION
Pterygium is a benign degenerative ocular lesion, a triangular growth comprising of fibro-vascular tissue, starting from the bulbar conjunctiva, moving across the limbus and encroaching up on the cornea. 1 Long exposure to the sun outdoors and dry climate increases the chance of developing pterygium to x1.5 times. Precise etiology is not known but definite risk factors comprise of chronic irritation due to dirt, aridness, and high temperature and UV light as well as genetic predilection. 2 The rate of primary pterygium varies from 0.7% to 31%. 3

Generally, pterygium is treated by conservative management as long as it is not succeeding onto the pupillary region and resulting in astigmatism and decreased vision. If it is progressive, surgical removal of the pterygium is the custom-
greater safety and cosmetic outcome. Like any surgical procedure, it is not entirely free from complications and has its own drawbacks such as a long duration surgery time, discomfort after surgery, inflammation, and creation of buttonhole, necrosis, giant papillary conjunctivitis, scarring, and granuloma development.

 Conjunctival autograft fixation technique is traditionally done via sutures by attaching it to the bare sclera underneath but the advent of latest fixation methods such as applying tissue adhesives, fibrin glue, autologous serum have gained recognition owing to the benefit of shorter procedure time, superior postoperative relief and lack of complications owing to the sutures. Among these, the application of autologous serum for the fixation of conjunctival autograft after pterygium removal has been found to be promising in the recent years.

This study was conducted, keeping in mind all the above-mentioned characteristics of the different fixation techniques and primarily compared the reappearance rate and in addition the effectiveness of the two aforementioned ways of conjunctival fixation onto the naked sclera subsequent to pterygium removal via 7-suture technique and use of autologous serum.

**MATERIAL AND METHODS**

This study was carried out at BHY Hospital, Karachi, from April 2019 to July 2019 and included fifty patients of ages ranging from 20 to 45 years having primary pterygium. A thorough ocular and systemic history was taken and complete eye exam was done prior to the operation. Eyes having grade G1 (normal), G2 (fine episcleral vessels), G3 (conjunctival recurrence), or G4 (corneal recurrence) were incorporated in this study whereas patients having ocular surface disorders, pseudopterygium, known allergic to blood constituents, systemic autoimmune and viruses along with long term instillation of topical drugs were not included in this study. Every recruited patient was randomly categorized into the two groups with twenty five patients in each group. Patients of both groups were scheduled to undergo pterygium removal followed by conjunctival autograft. The difference between both groups was in the fixation method of the conjunctival autograft which was done via using seven suture technique in group A and using autologous serum in group B. The main outcome measure was observing for graft lost and recurrence of pterygium at the conclusion of the three months period of follow up. Patients of both groups were counseled about the study dynamics and informed verbal consent was obtained. Ethical review committee approval was taken.

All surgeries in both the groups were done under regional anaesthesia by one oculoplastic surgeon (QQ). Crescent knife was used to dissect the pterygium from the tip followed by removal of the fibrovascular pterygial tissue from the conjunctiva. The resultant exposed scleral dimensions were measured using a caliper and a tenon-free conjunctival graft with an additional 1.0 mm was taken from the super temporal bulbar conjunctiva. The free graft was placed on the bare sclera. In group A, seven 8-0 vicryl interrupted sutures were placed to fixate the free graft with the adjacent conjunctiva and in group B, 3 to 4 drops of autologous serum was sprinkled on the bare sclera and conjunctival autograft was placed and allowed to adhere spontaneously. The time taken to perform both the techniques was measured in both the groups. At the end of the procedure, antibiotic steroid ointment was applied followed by a 24 hour pressure bandage. After the operation, antibiotic and steroid drops were prescribed. Patient’s review took place on the day following the operation and the subsequently at 1 week, 4 weeks and 3 months. Ocular examination via slit-lamp was carried out at each visit to assess the conjunctival autograft integrity and any signs of complications such as graft failure, displacement of the free graft, any ocular surface defects, granulation tissue formation or reappearance of pterygium. Statistical work was done on SPSS version 25.

**RESULTS**

This study included fifty patients, divided into two groups with twenty five patients in each group. Mean age was 31.2±4.56 years. There were 36 (72%) males and 14 (28%) females. Right eye was involved in 31 (62%) patients and left eye in 19 (38%) patients respectively. Pterygium grade 1 was found in 6 patients, Grade 2 in 23 patients and Grade 3 in 21 patients. Each of the recruited patient was assessed for a follow up period of 90 days; at the end of the which, graft loss was found in 1 (4%) patient of group A, whereas in 6 (24%) patients of group B; p-value = 0.049 (significant) by Fisher Exact test. Recurrence of Pterygium was noted in two (8%) patients of group A, and three (12%) patients of group B; p-value = 0.50 (not significant) by Fisher Exact test. Rate of graft loss
was found to be significantly higher in Group B with autologous serum use. No other complications such as infection or granuloma were reported during the follow-up period. Recurrence with pterygium grade = 0.271 (p-value). Graft loss with pterygium grade = 0.975 (p-value). Mean time taken to perform seven suture technique was 14.2±2.4 minutes, whereas autologous serum technique took a mean time of 10.3±1.9 minutes.

**DISCUSSION**

Elevated chances of reappearance and graft associated complications pose a challenge when it comes to the successful excision of a pterygium. The recurrent pterygium is usually irregular, violent and has a harsh inflammatory response which usually occurs during the initial six months after excision. A variety of surgical techniques have been brought to light for successful pterygium excision but conjunctival autograft has confirmed to be the gold standard with a decreased reappearance rate. In recent times, fixation techniques for the conjunctival autograft have been the matter of debate. In order to find out the suitable, most efficient technique in our setting, this study was carried out to compare two fixation techniques by using sutures and autologous serum and observe their surgical outcome and rate of recurrence along with any graft-related complications.

In this study, fifty patients were randomly categorized among two groups of twenty-five patients in each group. All the patients underwent pterygium removal followed by conjunctival autograft. Group A patients underwent fixation using 7 sutures technique and Group B patients underwent fixation of conjunctival graft using autologous serum. By the conclusion of the 90 days follow-up period, considerable disparity was not observed among the two groups in terms of recurrence but graft loss was found to be notably greater in patients who underwent fixation of conjunctival autograft using autologous serum in Group B. This was similar to a study done by Alok et al previously which compared three different fixation techniques using sutures, autologous serum and fibrin glue; all three techniques were found to have more or less similar recurrence rates. Studies have been done by Bahar et al, Cagatay et al and Hall et al comparing two different techniques especially fibrin glue and conjunctival autografting assisted via sutures but the rate of recurrence subsequent to these techniques has been controversial with some studies reporting an insignificant difference whereas other studies by Pan et al and Karalezli et al state that fibrin glue has a lesser risk of reappearance of pterygium as compared to the suture technique. A comparison of pterygium recurrence with conjunctival autograft attachment using suture and autologous serum but not graft loss was performed by Chaudhary et al, who observed no considerable discrepancy between the two techniques. This was in accordance with this study. A study by Cha et al observed that in the early postoperative duration, owing to the minimal irritation and swelling following autologous serum fixation technique, there is a less risk of recurrence but this study did not support this observation due to the insignificant recurrence rate difference in both the suture fixation and autologous serum groups.

This study also noticed that the mean time taken to perform the seven suture technique was 14.2±2.4 minutes, whereas autologous serum fixation technique took a mean time of 10.3±1.9 minutes. This was also observed in another study by Alok et al which noted that it took more time to suture the conjunctival graft as compared to using autologous serum for fixation of the conjunctival graft along with greater postoperative patient discomfort in suture-assisted conjunctival autograft as compared to the autologous serum. Postoperative grafts related discomfort or complications were not observed in this study. This study also documented a greater prevalence of pterygium in the male gender (72%) as compared to the females (28%), which in our setting reflects the fact the males are normally the earners for the family and more exposed to the outside environment. In order to confirm these observations, further comparable studies are required.

**CONCLUSION**

This study concluded that even though the use of autologous serum is a time-saving technique for fixing conjunctival autograft but the rate of graft loss and recurrence of pterygium is a major drawback of this technique as compared to the suturing of conjunctival autograft following pterygium excision. Further large-scale studies are needed for the enhancement of this study’s findings.

**REFERENCES:**

Impact of Lock Down Due to Covid-19 on the Visual Status of Children

Zeeshan Kamil, FCPS, FRCS¹, Qirat Qurban FCPS², Misbah Durrani FCPS³

ABSTRACT

Objective: The aim of this study is to shed some light on an undesirable adverse effect of the COVID-19 lockdown on visual status of children using electronic screens. It was an observational study

Methodology: This study was carried out in the Ophthalmology department of BHY Hospital, Karachi during the period of 1st June 2020 to 30th June 2020. A total of eighty children and young adolescents between the ages of six to sixteen years were included in this study having a refractive status of greater than 1.00 and lesser than 6.00 diopter spherical equivalent of both hypermetropia and myopia. All the participants underwent a comprehensive ophthalmic evaluation including refraction and slit lamp examination of the anterior and posterior segments. Inclusion criteria comprised of the persistent use of greater than 6 hours of electronic screens for online classes, self study or increased recreational use owing to lockdown and home confinement. Main outcome measure was to observe for any alteration in the refractive status compared to the previous prescription of not more than six months old. All the children and their guardians were briefed about the study dynamics and study approval was taken from hospital’s ethical review committee.

Result: This one month observational study incorporated eighty children and young adolescents of ages between six to sixteen years old with a mean age of 11.2±3.43 years. Among the eighty children were thirty seven girls (46.25%) and forty three (53.75%) boys. Twenty three (28.75%) out of the eighty children had hypermetropic refractive error whereas fifty seven (71.25%) had myopic refractive error. Overall mean increase in refractive status was 1.67±0.76 diopter. The refractive increase among hypermetropic children was 1.2±0.66 diopter whereas in myopic children, the refractive error was 1.9±0.8 diopter. Almost every child presenting to the OPD complained of itching, ocular surface discomfort along with heaviness of the eyes by the end of the day.

Conclusion: Compliance with the strict lockdown protocol has a beneficial effect on the prevention of spread of COVID-19, but on the other hand it leads to a harmful effect on the visual status of children confined to their homes with restricted outdoor activities leading to excessive use of electronic screens either for study purposes or recreational use.

Keywords: COVID-19, Corona virus, refractive error, hypermetropia, myopia

INTRODUCTION

The use of electronic devices is an essential component of a person’s daily life and therefore a constant cause of concern due to an increased reliance. Together with the present COVID-19 pandemic, the utilization of mobile phones, computer screens and tablets has accelerated owing to the extended lockdown period, self isolation, home confinement and lack of outdoor activities. Children of the school going age group are offered distance online learning programs by their respective schools in order to maintain their academic progression in the current crisis. The requirement to complete their homework and take classes online for long hours looking at the screen with no option of going outside and perform extracurricular activities has led to an increase in the average screen time use.

Compliance with strict lockdown protocol has a beneficial effect on the prevention of spread of COVID-19, but on the other hand it leads to a harmful effect on the visual status of children confined to their homes with restricted outdoor activities leading to excessive use of electronic screens either for study purposes or recreational use.

Strict compliance with the current extended lockdown is a necessity in this universal crisis in order to curtail the spread of virus but this is inadvertently affecting the wellbeing of the...
children owing to the socioeconomic, physical and psychological impact as a consequence. The family’s financial constraints and educational loss among today’s youth may accrue over time with dire outcomes which may be difficult to fathom. In order to counter the educational loss, several school’s have come up with distance learning online teaching platforms for the educational development of children within the confinement of their homes making it possible for them to study, conduct classes and do their homework. Apart from this, the persistent lockdown has also resulted in the children using electronic screens for longer hours without breaks for recreational purposes or as an emotional pacifier by the families to keep the children occupied. This has had a negative effect on the ocular health such as constant strain and infrequent blinking from looking at the screen for extended hours and a change in their refractive error. 2

This study was carried out, keeping the afore-mentioned in mind, to observe the unwanted adverse effect of the extended COVID-19 lockdown on the visual status of children as a consequence of using electronic screens.

**MATERIAL AND METHOD**

This study was carried out in the Ophthalmology department of BHY Hospital, Karachi during the period of 1st June 2020 to 30th June 2020. A total of eighty children and young adolescents between the ages of six to sixteen years were included in this study having a refractive status of greater than 1.00 and lesser than 6.00 diopter spherical equivalent of both hypermetropia and myopia. All the children underwent a comprehensive ophthalmic evaluation including refraction and slit lamp examination of the anterior and posterior segments. Inclusion criteria comprised of the persistent use of greater than 6 hours of electronic screens per day such as computers, mobile phones, tablets and hand held gadgets for online classes, self study or increased recreational use owing to lockdown and home confinement. Watching television was not included since it was not comparable to the near distance. Children having any visual issue apart from refractive error, an absence of information relating to screen use, any additional eye disease, or refractive status of lesser than 1.00 and greater than 6.00 spherical equivalent of both hypermetropia and myopia were excluded from the study. All the children and their guardians were briefed about the study dynamics and verbal consent obtained. Study approval was taken from hospital’s ethical review committee. The recruited children and their guardians were questioned about the age of the child, concurrent eye disease, any systemic condition, medication use, surgical history, education grade, socioeconomic status, previous refraction of the child along with the child’s previous and present screen exposure duration. Main outcome measure was to observe for any alteration in the refractive status compared to the previous prescription of not more than six months old.

**RESULT**

This one month observational study incorporated eighty children and young adolescents of ages between six to sixteen years old with a mean age of 11.2±3.43 years. Among the eighty children were thirty seven girls (46.25%) and forty three (53.75%) boys. Twenty three (28.75%) out of the eighty children had hypermetropic refractive error whereas fifty seven (71.25%) had myopic refractive error. Mean refractive error in myopes was 2.6±0.26 diopter and 2.8±0.24 diopter in hypermetropes. Overall mean increase in refractive status was 1.67±0.76 diopter. The refractive increase among hypermetropic children was 1.1±0.66 diopter whereas in myopic children, the refractive error was 1.9±0.8 diopter. Mean change in refractive error for myopic children was significantly more than that of hypermetropic children (t-test p-value < 0.001). Almost every child presenting to the OPD complained of itching, redness along with heaviness of the eyes by the end of the day.

**DISCUSSION**

Owing to the COVID-19 pandemic, a huge portion of the world’s population is presently confined to their homes under the implemented lockdown to restrict the virus transmission. 3 This extended lockdown has an immeasurable impact on the youth’s mental and physical well being. The response towards the present lockdown and the imminence of a second lockdown is varied among the school going children with some feeling safe and enjoying their time at home whereas others facing traumatic challenges within the confinement of their homes. The consequent deprivation of physical interaction and outdoor activities may impair the child’s cognitive maturity and prompt long term health issues. Closure of
academic institutions has led to the application of online distance learning programs. In this modern age owing to the technological advancement, the children are already spending more and more time on electronic devices universally which trains the children and introduces them to a plethora of fields related to technology and helps them master the expertise needed for future success; however, the excessive electronic device use and over immersion in the digital world along with lack of supplementary physical activities due to the lockdown may result in social stunting and health problems. 4 The employment of computers, mobile phone and tablets on a daily basis either for educational, social networking, professional or recreational purposes on a long term basis is leading to an impending impairment of the visual system. Persistent viewing of the electronic screens without any breaks, inadequate lighting, glare, unawareness of visual refraction status, inappropriate distance and electronic device setup together with increased adaptability is resulting in a striking increase in complains of dry eyes, ocular discomfort, blurred vision, headaches and ocular strain among children. 5

This one month observational study was carried out among children and young adolescents having hypermetropia and myopia prior to the COVID-19 lockdown and subsequent to the persistent use of greater than 6 hours of electronic screens per day for either study or recreational purposes. The recommendation regarding the use of electronic screen in children has recently been revised by the American Academy of Pediatrics stating that for children of 6 years and older, placement of constant restrictions on the time spent for viewing and the type of electronic device used should be enforced so that the screen time does not affect the child’s sleep, exercise or other behavior. 4

In 2016, a report was published by the Vision Council which surveyed the digital eye strain among electronic screen users and found that the use of multiple devices at the same time was associated with greater symptoms as compared to single device use. It also showed that females were more affected with symptoms of ocular strain, dryness and discomfort after using electronic screens as compared to males which may be due to the gender differences in dry eye prevalence. 6,7 Another study by Hale and Guan found that the unwarranted use of electronic screens for longer durations is linked to crossing of the eyes or progression of acute onset esotropia among children necessitating surgical correction and limiting the electronic screen time results in a reduction of the crossing of the eyes. 8 The restricted ability of self awareness among children while playing games or doing school work on electronic screens during the present lockdown period for many hours straight with full concentration and limited breaks may cause problems with accommodation leading to spasm and change in their refraction as a consequence of focusing on one target distance constantly along with ocular surface discomfort. 9

A meta-analysis by Sherwin et al investigated the relationship between the time utilized outdoors and myopia among children and adolescents of up to 20 years old and found that increasing the time utilized outdoors decreased the risk of development and progression of myopia. 10 This was in accordance with the finding of our study which observed that subsequent to the lockdown and lack of outdoor activities together with excessive use of electronic screens led to an increase in the refractive error. Another meta-analysis by Lanca and Saw analyzed 15 studies showing the link between the electronic screen time use and risk of developing and progression of myopia and found mixed results with 7 studies showing an association between hours of electronic screen use and incident of myopia whereas 5 studies showing no relationship between screen time and incidence of myopia. 11

This study found that the overall mean increase in the refractive status was 1.67±0.76 diopter with a refractive increase among hypermetropic children of 1.12±0.66 diopter and 1.9±0.8 diopter spherical equivalent increase among myopic children after a constant >6 hours use per day of electronic screens during the lockdown period which was in accordance with the aforementioned studies. Several authors have studied the accommodative change while viewing computer screens such as Wick and Morse, who showed that among young age group the accommodative power was 0.33 D higher while reading from an electronic screen as compared to printed paper, 12 Penisten et al, who observed comparable results in electronic screen and printed material 13 and Collier and Rosenfield also found a constant accommodative increase of 0.93 D after 30 mins of laptop screen use. 14 Apart from the accommodative and refraction changes, a study by Sheppard and Wolffsohn reported the
development of external ocular symptoms related to the dry eye with increased electronic screen use such as irritation, ocular discomfort burning of eyes, dryness, ocular strain, headache, heaviness and increased sensitivity to bright lights. 15 Almost all the children recruited in the present study complained of itching, redness, ocular surface discomfort along with heaviness of the eyes by the end of the day.

CONCLUSION
In these challenging times, compliance with the strict lockdown protocol is imperative for the prevention of spread of COVID-19, but on the other hand it has led to a drastic increase in the use of electronic screens either for study purposes, recreational use or as an emotional pacifier by the families to keep the children occupied causing an adverse effect on the visual status of children confined to their homes.

REFERENCES
Practices of Nurses in Administration of Safe Medication

Qammer Javed BSN student 1, Muhammad Hussain B.Sc(N) M.Sc (I),
Muhammad Afzal M.Sc (N), M.Sc.,(Haem).,MBA2,
Dr. Syed Amir Gilani MBBS,.DMRD.,M.D., MPH.,Ph.D (MDU & Pub. Health)3
Lahore School of Nursing, University of Lahore

ABSTRACT
Background: Medication administration provides an important area to examine the practices of nurses regarding safe medication administration. This assessment will provide the future improvement in the knowledge and practices of nurses.
Method: This assessment done through direct observation. Checklist of safe medication administration was made to observe the practices of nurses. This checklist has 16 questionnaires were filled through direct observation.
Results: After direct observation, data was collected and shown through graphs and tables. These tables show the quality and quantity of the task. Result shows that some of the polices and rules are violated during administration of medication by the nurses.
Conclusion: This study was done to improve the practices of nurses regarding safe administration. According to study nurses have knowledge about administration but their practices were poor. There is overwhelming need to provide and enhance the quality of care to the patient.
Key words: Nurses, Safe medication administration, Practices.

INTRODUCTION
Objective: To assess the practices of nurses regarding safe medication administration which is an important part of the quality and safety to the patient. This is a multi-factorial system which involves the nursing staff and pharmacy staff providing the safe medication to the patient and help them to enhance their safety and care. Several observational studies held in rural, urban and teaching hospitals based on computerized documentation (Elganzourietal, 2019).
Safe medication administration is the important part of the quality and safety of the patient. This is a multi-factorial system which involves the nursing staff and pharmacy staff provide the safe medication to the patient and help them to improve their safety and care. Several observational studies held in rural, urban and teaching hospitals (Elganzourietal, 2019).
The practices of nurses regarding safe medication, they should have good knowledge of administration as the practices could be poorer. There is overwhelming need to enhance the quality of care of the patient.

Nurses take 10 to 15 minutes in medication administration to only one patient. This process includes the preparation, recovery, distribution and documentation. Therefore study shows that medication administration process has distribution involve multiple factors. This study aimed to observe medication process of staff nurses to use their knowledge to enhance patient care. Addi-
tionally, different expertise surveys the areas of improvement regarding medication administration and also identifies the different steps of the medication (Surji, K., 2018). The role of the nurse as a professional is identified as being the leader of the team to detect the inaccuracies and disruption of medication. (Araújo & Lima, 2019).

Local observational studies have shown that such techniques improve the practices of the nurses’ medication system. Example include increased checking of patients’ proof of identity or any adverse drug reactions. Responses, faulty medication collection, incorrect administration and dereliction to sign treatment charts. (Davies et al., 2015).

Some nurses are not performing their practices in a good way there is need to enhance their practices to improve patient care.

**What are the practices of nurses about administration of medication administration?**

**How much nurses have awareness about administration of safe medication to the patients? How the nurses perform their practices for IV medication administration?**

Only one variable practice was selected for study. The studies reviewed the best techniques and tools of medication, combining the various methods to assess the nurses’ medication administration practices. (Licen&Plazar, 2015). Increased patient ratio, low resources and staff shortage may interrupt the care of the patient. When nurses have shortage of time and increased workload they are at risk of inadvertent wrong practices. They believe that they are at risk of neglecting their care of patient but their busy schedule make them to lapse in practices (Burger & Degnan, 2019).

Study shows that there is another aspect of interruption between the administration schedule and the visiting time. Medication protocol, visiting hours and sleeping also affect the routine of medication schedule. Right timing for medication administration should be maintained to prevent the negligence of the patient safety and it should be worked out closely to make the medication schedule very effective, especially for giving antibiotics which could be life threatening.

Right documentation is the main rules of medication administration. Documentation helps the best practices of the nurses. It makes the awareness about the given time of the medication. Documentation gives the proof of the medication was given in time. Case files also seen during the observation to check the practices of the documentation which may reveal poor documentation at time. (Mula, C., 2019).

Most of the nurses did not follow the right techniques for medication administration and many nurses did not follow the documentation. Identification and analysis of safe medication preparation and administration practices improve the safety of the treatment. (Karttunen, et., al, 2019).

Nurses may be more aware of the risks associated with IV medication and therefore try to escape disruptions during this high-risk task as much as possible (Schutijser & Wagner, 2019). Education and guidance should be maintained while going to administer medication. Patients’ involvement also helps the improvement of the practices. (Bucknall, T., 2019).

**METHODOLOGY**

A direct observational descriptive cross sectional study was conducted. Time period of study was February 2020 to May 2020. Study setting was done in public hospital Lahore. The period of 4 months of observational period revealed the direct observation of nurses’ practices about medication administration process. A form utilized during the observational time period and consisted of questions to be answered during each medication administration. The study participants were nurses from different departments for observation. Hence, the study sample was 120 nurses. Data collected by using convenient sampling technique and direct observation.

**Inclusion Criteria**

Nurses who directly involved with patient care.

**Exclusion Criteria**

Nursing managers and supervisors.
Nursing assistants and helpers

Sample size will be 120 hospital staff nurses of General Hospital Lahore. If the total population is 180, so according to formula:

\[ n = \frac{N}{1 + \frac{N}{1}} \times \frac{n}{100} \times \frac{180}{180} \times (0.05)^2 \]
An adopted questionnaire was used for data collection (Eliyas et al., 2018). Medication administration audit form was filled through direct observation and it had 16 questions. Data collected by the researcher through direct observation and was analyzed by using Statistical Packages of Social Sciences (SPSS) version 25. Descriptive statistics expressed through frequencies and percentage. Chi-square test used to find association between knowledge and practices of nurses regarding medication administration.

RESULTS:

To get the results of the data collection sheet, Microsoft Access was used to show the responses through graphs and tables.

<table>
<thead>
<tr>
<th>Table #01: Demographic variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Age (years)</td>
</tr>
<tr>
<td>21-30</td>
</tr>
<tr>
<td>31-40</td>
</tr>
<tr>
<td>41-50</td>
</tr>
<tr>
<td>51-60</td>
</tr>
<tr>
<td>Education Level</td>
</tr>
<tr>
<td>General Nursing</td>
</tr>
<tr>
<td>BSN(Post RN)</td>
</tr>
<tr>
<td>MSN</td>
</tr>
<tr>
<td>Experience</td>
</tr>
<tr>
<td>21-30</td>
</tr>
<tr>
<td>31-40</td>
</tr>
<tr>
<td>41-50</td>
</tr>
<tr>
<td>51-60</td>
</tr>
<tr>
<td>Duty Shift</td>
</tr>
<tr>
<td>Morning</td>
</tr>
<tr>
<td>Evening</td>
</tr>
<tr>
<td>Night</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Table #02: Checklist to observe the practices of the nurses regarding safe medication administration

<table>
<thead>
<tr>
<th>SN</th>
<th>Items</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>If there are contact precautions, did staff follow the sign?</td>
<td>83</td>
<td>37</td>
</tr>
<tr>
<td>02</td>
<td>Did the staff use proper hand hygiene before the med pass?</td>
<td>40</td>
<td>80</td>
</tr>
<tr>
<td>03</td>
<td>Did the staff prepare the drugs for only one patient at a time?</td>
<td>49</td>
<td>71</td>
</tr>
<tr>
<td>04</td>
<td>Did the staff open the e MAR &amp; compare the MAR with the medication prior to administration? Where was it done?</td>
<td>44</td>
<td>76</td>
</tr>
<tr>
<td>05</td>
<td>The medication was labeled throughout process, prep to administration? (PO, NG, IV)</td>
<td>85</td>
<td>35</td>
</tr>
<tr>
<td>06</td>
<td>The nurse correctly transported the medication?</td>
<td>87</td>
<td>33</td>
</tr>
<tr>
<td>07</td>
<td>Two (2) patient identifiers used prior to administration? (patient name, MR#, birth date)</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>08</td>
<td>Medication is opened from the unit dose container at the bedside.</td>
<td>61</td>
<td>59</td>
</tr>
<tr>
<td>09</td>
<td>Did the staff explain to the patient what drugs he/she is being given and their use?</td>
<td>76</td>
<td>44</td>
</tr>
<tr>
<td>10</td>
<td>Did the staff swab port prior to accessing IV line?</td>
<td>86</td>
<td>34</td>
</tr>
<tr>
<td>11</td>
<td>Did the staff follow the 5 rights of medication administration?</td>
<td>51</td>
<td>69</td>
</tr>
<tr>
<td>12</td>
<td>Did the staff document the medication given on MAR after administration?</td>
<td>85</td>
<td>35</td>
</tr>
<tr>
<td>13</td>
<td>Did the staff use a worksheet to refer to medication for patient and schedule?</td>
<td>71</td>
<td>49</td>
</tr>
<tr>
<td>14</td>
<td>Was a double check performed for continuous infusion?</td>
<td>64</td>
<td>56</td>
</tr>
<tr>
<td>15</td>
<td>Was there a distraction or interruption during medication preparation or administration?</td>
<td>74</td>
<td>46</td>
</tr>
<tr>
<td>16</td>
<td>Did the staff provide or answer question(s) to the patient/parent when required?</td>
<td>72</td>
<td>48</td>
</tr>
</tbody>
</table>

Table #02 showed 83 nurses out of 120 followed the sign and 40 used proper hand hygiene before medication was given, 44 nurses opened the MAR prior to medication administration, 85 nurses read the label the medication before administration, 87 nurses transported correct medication, 50 nurses follow the two patient identifier before medication.
Practices of Nurses in Administration of Safe Medication

administration, 61 nurses opened the medication at bedside, 76 nurses explain the patient about medication given, 86 nurses use swab port while accessing IV line, 51 nurses followed the 5 rights of medication administration, 85 nurses follow the documentation after medication administration, 71 nurses used worksheet to refer to medication for patient and schedule, 64 nurses performed double check for continued infusions, 74 nurses were facing interruption or distraction during medication administration, 72 nurses provides information or answer and question to the patient and family when required.

DISCUSSION

Medication administration is the main part of the health care system. It is a basic study of observation to identify the precautions to provide the right administration and our study concerns this objective. The study included the general nursing staff nurses, post RN and MSN staff nurses with their age and different years’ experience in patient care. In our study we have observed that 40(33.3%) staff nurses follow the proper hand hygiene before medication and 80(66.7%) were not following the proper hygiene. Although they know the importance of it yet they did not follow the proper procedure. In another study conducted at Bahir Dar City Administration Health Institutions, there were 33(36.26%) nurses follow the procedure of hand washing before medication. But only 10% of them observe proper hand washing practices while 27% moderately and majority (62.5%) of them were poor in practice (Jamal, S. 2018).

Medication administration process depends on five important things. Without these rights medications process cannot be completed. These include the right patient, right medication, right dose, right time and right route. In our study we have noticed through direct observation that most of the nurses were not following the proper medication procedure and of them follow the correct procedure, not fully which shows their lack of responsibility. According to my observation 51(42.5%) nurses follow the right way but 69(57.5%) nurses were poor in general. In another study the practices of all precautions were not practiced through direct observation 65/72(90%) and their practice of “Five Rights” was not achieved even they didn’t follow the minimum steps of the five rights in medication administration (Surji, K. 2018).

In health care system double check is the main part. In our study through direct observation 64(53.3%) nurses were performing double check during medication administration and 56(46.7%) were not following the double check on high risk cases. They have knowledge about double check but did not follow the rules. This shows their weak system of performing medication.

In another study reported that practice of double check was not being followed before medication administration. Some nurses’ states that they were not performing double check because medication packages they bought from the pharmacy were already checked. Around 35% nurses were not following the double check before medication administration (Karttunen, 2019).

According to our study nurses have knowledge about the patient identification but they were not practicing as well before medication as observed in 41% (50), which may cause the lapse in medication resulting in the death of patient. There is a dire need to improve the practices to promote the status of the health and also the trust of the patients. Several studies shows that mostly nurses utilizes the patient identification before administering the medication 65% (39/60) patients were correctly identifiers while 17% (10/60) were not. In 18% (11/60) of the observations, the patient identification process was not observed (Young & Adkins-Bley, 2015).

In another direct observation of nurses during medication administration 56 observed medication administration events with many interruptions. According to study it has been observed that nurses are the main source of interruption (40%), followed by patients (13%) and then medical officers (11%) Mostly these interruptions and distractions occurred while medication preparation (73.3%), rather than administration (26.7%). (Johnson & Everett, B. 2017).

According to our study of direct observation, social distraction of nurses asking questions and also the patient’s attendants are the main
cause of medication delay which may cause interruption. During medication preparation nurses social interruptions with the patients. Almost 61.7% (74) were distracted while preparing medication. There is need to overcome these interruptions to enhance the safety of medication administration of the patient.

CONCLUSION

Although, this observational study provides the possible areas of improvement of safe medication administration. Medication administration is the most important part of the medical health department. Although lots of areas show that medication administration practices are very poor and we have to find out the cause of these problems. In our study we have tried to discover the problems to focus on labeling, patient identification, proper documentation, double check and observation of 5 rules of medication administration. During observation, it has been observed that nurses have knowledge about the rules of administration of medication but their practices are poor. So, there is overwhelming need to assess and improve the practices of nurses to provide safe medication administration to the patient.

REFERENCES


2. X-linked Retinoschisis
Goldmann-Favre syndrome, Eales disease, Wagner syndrome, Familial exudative vitreoretinopathy
ABSTRACT

Objective: To determine the frequency of helicobacter pylori in carcinoma stomach in patients presented to Gastroentrology department, Hayatabad Medical Complex, Peshawar. Gastric cancer is the third commonest cause of cancer death worldwide, with almost three quarters of a million deaths annually. Despite a declining incidence in many countries in the developed world, there is an increase in global mortality from the disease because of population growth and increasing longevity in developing countries. More than 930 thousand new cases of gastric cancer are detected annually, and at least 700 thousand people die due to this disease. Adenocarcinoma is the most prevalent gastric malignancy and includes 95% cases of gastric cancers.

Methodology: This study was conducted on 45 patients at the Department of Gastroenterology, Hayatabad Medical Complex, Peshawar.

Results. As per Descriptive Statistics of the subject study which can been seen at Table No. 1 where mean and SD for age is recorded as 60 Years ± 7.45. Frequency and percentages of Helicobactor Pylori were recorded as 33 (74%) in patients having diagnosed with carcinoma of stomach.

Conclusion: Our study concluded prevalence of helicobacter pylori in gastric carcinoma patients.

INTRODUCTION

Gastric cancer is the third commonest cause of cancer death worldwide, with almost three quarters of a million deaths annually. Despite a declining incidence in many countries in the developed world, there is an increase in global mortality from the disease because of population growth and increasing longevity in developing countries. More than 930 thousand new cases of gastric are detected annually, and at least 700 thousand people die due to this disease. Adenocarcinoma is the most prevalent gastric malignancy and includes 95% cases of gastric cancers.

The incidence of gastric cancer varies in different parts of the world and among various ethnic groups. Stomach cancer incidence is known to increase with age with the peak incidence occurring at 60-80 years. Cases in patients younger than 30 years are very rare. Despite advances in diagnosis and treatment, the 5-year survival rate of stomach cancer is only 20 per cent. The etiology of gastric cancer is multifactorial and includes both dietary and non-dietary factors. The major diet-related risk factors implicated in stomach cancer development include high content of nitrates and high salt intake. Accumulating evidence has implicated the role of Helicobacter pylori (H. pylori) infection in the pathogenesis of more than 80% cases of gastric cancer. Although more than 50% of the world population is infected with this bacterium up to 3% develop gastric carcinoma. Helicobacter pylori is a Gram-negative, microaerophilic bacterium that colonizes human gastric mucosa. Gastric ulcer, duodenal ulcer, chronic atrophic gastritis, mucosa-associated lymphoid tissue lymphoma, and stomach adenocarcinoma are associated with H. pylori as the etiological agent.

The prevalence of helicobacter pylori in gastric carcinoma in patients is very common

Mechanism of H. pylori-associated gastric carcinogenesis has not been well defined. H. pylori infection commonly lasts for decades,
provoking a series of histological changes including destruction of intercellular junctions, apoptosis and proliferation of epithelial cells result in malignant transformation. The genotypes of H. pylori strains, host genetic polymorphisms, environmental factors like high salt diet, smoking habit and certain gastric commensal organisms have been determined to be associated with occurrence of gastric carcinoma.6

H. pylori, a Gram-negative bacterium, has been characterized as a class I carcinogen of gastric cancer by the World Health Organization since 1994. The oncogenic effects of H. pylori infection have been demonstrated through two major mechanisms: the direct epigenetic effects of H. pylori on gastric epithelial cells and the indirect inflammatory response of H. pylori on the gastric mucosa.8 Certain H. pylori strains with the virulence factor (such as cytotoxin-associated gene A, CagA) are more likely to increase gastric cancer risk.9

In a study carried out in Iran, 117 people were evaluated. Among 32 patients with the proximal gastric carcinoma, 21 people were with the positive Helicobacter pylori (65.6%). Among 30 patients with the distal gastric carcinoma, 26 people were with positive Helicobacter pylori (86.7%). 55 people were without the cancer, which among them, 40 people were with the positive Helicobacter pylori (72.7%); and 15 people were with the negative Helicobacter pylori (37.7%) (p<0.01).3

The present study is very helpful in establishing local statistics regarding the frequency of Helicobacter pylori caused gastric carcinoma. It will help us to create awareness regarding this disease and preventing this disease at an earlier stage. This will help to decrease both burden and cost of the disease.

MATERIALS AND METHODS

The study was conducted at the Department of Gastroenterology, Hayatabad Medical Complex, Peshawar from 25 Feb, 2017 to 26 Aug, 2017. It was a descriptive cross sectional, with non probability consecutive sampling. Sample size was 45 using incidence of 3% of Helicobacter Pylori caused gastric carcinoma cases on the basis of previous studies, taking confidence interval as 95% and margin of error as 5% using WHO sample size calculator. In our studies the cases were included from all over the province including Afghanistan.

Inclusion criteria: Patients of both genders. Age 40 to 70 years as this is the common age for gastric carcinoma. All those patients who are having carcinoma stomach confirmed on histopathology. Exclusion criteria: Patients who have already received Helicobacter Pylori eradication treatment. Patients with co-morbidities and chronic systemic illness. Patients having advance carcinoma stomach with complications. Patient with cancers other than gastric carcinoma. History of upper gastrointestinal hemorrhage. The above mentioned conditions act as confounders and if included would have introduced in the study results.

All patients presenting to department of gastroenterology with gastrointestinal complaints with suspected carcinoma stomach undergoes endoscopy and biopsies are taken both for histopathology and for detection of Helicobacter pylori. If histopathology report showed a patient be having gastric carcinoma and the patient also fulfills the selection criteria, he or she was included in the study. Invitation to the study was verbal. Information like name, age, sex, address, symptoms etc. was noted. On the basis of tissue staining report, the patients were declared as positive or negative for Helicobacter pylori infection. All the information was entered and analyzed in statistical software SPSS (version 21). Frequency and percentage was calculated for categorical variables like gender, frequency of Helicobacter pylori infection in carcinoma stomach. Mean ± SD was calculated for continuous variables like age. Descriptive statistics was performed to summarize demographic and clinical variables and to evaluate distributional characteristics of continuous variables. Chi square test was applied after stratification of frequency of Helicobacter pylori infection in carcinoma stomach against age and gender.

RESULTS

This study was conducted on 45 patients at the Department of Gastroenterology, Hayatabad Medical Complex, Peshawar. As per descriptive statistics of the subject study when mean and SD for age is recorded as 60 Years ± 7.45. As per gender distribution, male patients were recorded as 30 (67%) and female patients were recorded as 15 (33%) (Table No. 2). As per age distribution, 10 (22%) were in age group of 40-50 years, 12 (27%) in
age group of 51-60 years and 23 (51%) patients were recorded in 61-70 years’ age group. Frequency and Percentages of Helicobacter Pylori were recorded as 33 (74%) in patients having diagnosed with carcinoma stomach. Stratification of Helicobacter pylori with respect to gender and age is recorded at Table No. 1 and Table No. 2 respectively.

TABLE 1: Stratification of helicobacter pylori with gender (N=45)

<table>
<thead>
<tr>
<th>Gender</th>
<th>H. Pylori</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Male</td>
<td>22</td>
<td>8</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>4</td>
</tr>
</tbody>
</table>

TABLE 2: Stratification of H pylori with age (N=45)

<table>
<thead>
<tr>
<th>Age groups</th>
<th>H. pylori</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>40-50 years</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>51-60 years</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>61-70 years</td>
<td>19</td>
<td>4</td>
</tr>
</tbody>
</table>

DISCUSSION
This is descriptive cross sectional study to find frequency of helicobacter pylori in patients having gastric carcinoma. Gastric carcinoma is among the most frequently occurring malignancies worldwide, and it was the leading cause of malignancy related deaths in United States in 1930. Currently, its mortality has fallen in United States. Though the reasons for this decline are not fully known, however, data indicates that several environmental factors may be involved in the pathogenesis of gastric carcinoma.

Since the Helicobacter pylori been discovered in 1983, the diagnosis and management of diseases of stomach and duodenum have greatly changed. Of upper gastrointestinal disease have changed greatly. Subjects having positive serologic test for Helicobacter Pylori have been found to have greater risk for gastric malignancies. A higher risk of the development of gastric cancer has been reported in subjects with positive serologic tests for H. pylori.

It has been found that, at least in early lesion, eradication of H. pylori leads to regression of the tumour in 62 to 92% cases. Studies have shown that the eradication of bacterium, at least from early lesions, results in tumor regression in 62 to 92% of cases. Our study shows that H. pylori was present in 33 patients (74%) and was more in older and male patients.

Our results concur with the histological studies from Europe and Saudi Arabia which reported the bacterial prevalence of 59% and 79.8% respectively. Regarding association with the type of gastric carcinoma a retrospective study from United States has reported whereas in a similar retrospective study from United States, the frequency of H. pylori in intestinal type was 89.2% compared with 31.8% in diffuse type gastric. Muhammad Arif has reported that H. pylori was found in 35 cases (70%) of gastric carcinoma of stomach, in 42 (84%) cases of chronic gastritis, and in 12 cases (24%) of normal gastric mucosa.

Trajkov et al., have also found that 70% of gastric carcinoma were positive for H. pylori, this study has confirmed that the incidence of H.pylori is higher and particularly in intestinal type of gastric carcinoma patients. Nicholas et al also found that H.pylori which is thought to be a cause of chronic gastritis may be associated with gastric carcinoma as well. Another study found that as compared to population where H.pylori infection is zero the population where there is 100% infection have approximately 6-fold higher risk of gastric cancer.

It was found in a large case control study that usually the infection of helicobacter pylori precedes the diagnosis of gastric cancer. In this study 76 percent of the controls were infected with H pylori. Out of 5908 subjects, so far, only 2.3% were found to have got gastric carcinoma. In a study in 32 patients with proximal stomach cancer 21 (65.6%) had H.Pylori positive and 11 (34.4%) were negative for H Pylori (p<0.01). And out of 30 patients with distal gastric cancer 26 (86.7%) had H Pylori positive and only 4 (13.3%) were negative for H pylori (p<0.01); 55 people who were without cancer consisted 40 (72.7%) people having positive H pylori and 15 people (37.7%) negative for H Pylori(p<0.01). In our study Helicobacter pylori infection was more in older patients having gastric carcinoma, but there was no statistical difference in helicobactor pylori frequency in age groups. There is presence of Helicobacter pylori in patients having gastric carcinoma. It is recommended that further work should be done on larger scale to
know the burden of disease.

CONCLUSION
Our study concluded and confirmed prevalence of helicobacter pylori in gastric carcinoma in patients.

REFERENCES

3. Fungal Endophthalmitis
A young man with complain of pain and reduced vision in one eye since one week with a history of suffering from hepatitis C and receiving intravenous medication. The visual acuity was 20/400 in that eye. Examination showed vitreous haze with yellow-white lesions on the retina and optic nerve. Surgery was performed and a white mass measuring was seen adherent to the optic nerve. The most likely diagnosis was fungal endophthalmitis.

D.D. Retinoblastoma, Amelanotic uveal melanoma, Astrocytic hamartoma, Fungal Endophthalmitis, Malignant optic nerve prolapsed.
Comparison of Tramadol and Ketorolac as Post-operative Analgesia in Open Cholecystectomy

Aurang Zeb FCPS¹, Rahman Ullah Jan MCPS², Ahmed Zeb FCPS³, Zahid Ullah Khan FCPS ⁴, Mohammad Shafiq FCPS⁵

ABSTRACT

Objectives: To compare the response of Tramadol and Ketorolac and to compare the side effects of the said drugs. Better post-operative pain control is always a difficult task for health care providers. The more potent analgesic drugs like opioids have more side effects like nausea, vomiting, pruritus and respiratory depression. Ketorolac is an NSAIDs that has shown promising results in controlling moderate to severe pain with lesser side effects. Open cholecystectomy is a common abdominal procedure and good intra and post-operative pain control will result in better recovery and patient relief.

Methodology: It was a prospectively conducted double blind randomized control trials in which 101 cases were enrolled. It was six months duration study from July 2019 to January 2020. All patients were randomly distributed among two groups. In group A, inj. Tramadol 100 mg while in group B, inj. Ketorolac 30 mg was given. Pain intensity was assessed by numerical rating scale. Epiinfo Version 7.2 and Microsoft Excel 2007 Workbook were used for data set analysis.

Results: In 101 patients 22 were males (21.8 %) and 79 were females (78.2 %) with male: female ratio1:3.6. The mean age group was 38 years ranging from 24 to 58 years. In Group A, Tramadol was given to 51 patients while in Group B, inj. Ketorolac was given to 50 patients. In Group A, 47 patients (92 %) were pain free at six hours while four and eleven (11) patients were given additional analgesia at 6th and 8th hour respectively. In group B, 44 patients (88 %) responded well to analgesic effect in first three hours. At 6th hour, 18 patients (36 %) were having moderate degree of pain and additional analgesia was given.12 more patients (24 %) needed additional analgesia at 8th hour. Eight (16 %) and two (4 %) patients complained of nausea and vomiting in Group A and B at first hour respectively. No respiratory depression was observed in any group.

Conclusions: Ketorolac may be used as an alternative to opioids including tramadol as it gives equivalent pain control for intermediate duration surgical procedures.

Abbreviations: Tramadol, ketorolac, post-operative pain, cholecystectomy, opioid

INTRODUCTION

Pain is one of the most unwanted and disastrous effect of physical or emotional injury. It is an unpleasant sensory or emotional experience associated with actual or potential tissue damage. Pain may be acute or chronic. Pain has deleterious effects on physiology of body leading to late recovery, prolonged hospital stay and high mortality.

Control of pain response is mandatory to avoid its undesirable effects. Proper management helps in early mobilization, recovery and discharge from hospital. Pain management program should be started before the surgical procedure and be continued after the discharge of the patient.

Ketorolac may be used as a safe alternative to opioids including tramadol as it gives equivalent pain control for intermediate durations of surgical procedures.

There are different pain assessment tools for evaluation of pain. These include Wong-Baker FACES rating scale, visual analog scale (VAS), numerical rating scale and McGill Pain Questionnaire (MPQ). For example, in numerical scale, 0 indicates no pain and 10 shows worst possible pain.

These are different modalities of pain.
Comparison of Tramadol and Ketorolac as Post-operative Analgesia in Open Cholecystectomy

control. Initially non-steroidal anti-inflammatory drugs (NSAIDS) are administered for mild to moderate pain. Mild narcotics, narcotics in high doses, combination of NSAIDS and narcotics, augmentation with anticonvulsants, antidepressants, regional and epidural blocks, peripheral nerve blocks and local infiltration with steroids and local anesthetics, acupuncture to control pain. Psychological therapy includes hot and cold fomentation and spiritual therapy.

Ketorolac is one of the potent NSAIDS used for moderate to severe acute pain. A placebo-controlled study involving 95 ASA physical status 1 or 2 children (ages 5-15 yr). It is usually administered as 30 mg and 0.5 mg/kg intravenously in TDS or QID dose in adults and children respectively. Adverse cardiovascular incidents like myocardial infarction and stroke (CVA) may follow NSAIDS use especially in those who are already having some cardiovascular risk factors. It is also contraindicated in labor and delivery and in renal failure. It shouldn’t be used for more than five days nor should be used for minor or chronic pain. Tramadol is a synthetic centrally acting opioid analgesic used for moderate to severe pain. Tramadol causes nausea, respiratory depression, dysphoria and constipation. Dependence is unlikely.

Cholecystectomy is common surgical procedure, mostly done due to stone in gall bladder. The patients complain of moderate to severe abdominal pain which appears in right hypochondria or epigastrium associated with nausea and vomiting. Due to the high incidence of nausea and vomiting and respiratory depression associated with opioids, alternative drugs are needed which are free of such undesirable effects but are equally potent.

**Inclusion criteria.** All patients undergoing elective cholecystectomy aged 18-60 years ASA 1 or 2

Exclusion criteria, Acute cholecystitis. Patients having active peptic ulcer disease. Pregnant ladies, Renal failure , Heart Failure, Aspirin sensitive asthma, Patients having obesity Patients having history of drug/opioid/ ethanol abuse Hypersensitivity to ketorolac or tramadol

**METHODOLOGY**

It was a prospectively conducted double blind randomized control trial through simple consecutive non-probability sample technique. 101 cases were enrolled in the study. In the Department of anesthesiology and Department of surgery, Naseer Teaching Hospital, Peshawar. Six months from July 15, 2019 to January 14, 2020.

A preformed structured performa was used to record the patient’s data. All patients were preoperatively assessed. Written informed consent was taken. Induction of anesthesia was done with Propofol 2.5 mg/kg with inj. Nalbufin 0.1 mg/kg as analgesic. Muscles relaxant Atracurium 0.5 mg/kg and 0.1 mg/kg was used as loading and maintenance dose respectively. Anesthesia was maintained with Isoflurane at MAC 1.2-1.6. All patients were randomly distributed among two groups. In group A, inj. Tramadol 100 mg in 100 ml normal saline while in group B, inj. Ketorolac 30mg in 100 ml normal saline was given. Drug was infused over 30 minutes. They were assessed at half hour, one hour, three hours, Six hours and eight hours intervals for pain response and side effects and need for further analgesia. Pain intensity was assessed by numerical rating scale. Epiinfo Version 7.2 and Microsoft excel 2007 Workbook (xlsx) were used for data set analysis.

**RESULTS;**

In 101 patients 22 were males (21.8 %) and 79 were females (78.2 %) with male: female ratio 1:3.6. The mean age group was 38 years ranging from 24 to 58 years. In Group A, Tramadol was given to 51 patients while in Group B, inj. Ketorolac was given to 50 patients.In Group A, 47 patients (92 %) were pain free at six hours while four and eleven (11) patients were given additional analgesia at 6th and 8th hour respectively. In group B, 44 patients (88 %) responded well to analgesic effect in first three hours. At 6th hour, 18 patients (36 %) were having moderate degree of pain and additional analgesia was given.12 more patients (24 %) needed additional analgesia at 8th hour. Eight (16 %) and two (4 %) patients complained of nausea and vomiting in Group A and B at first hour respectively. No respiratory depression was observed in any group. The p-values, risk ratio and confidence interval at half hour, one hour and three hours were non-significant showing that there is no difference in outcome for group A and B. The p-values for group A compared to group B were both less than 0.0000 with confidence interval of 1.34-2.34 and 1.56-4.06 at six and eight hours interval respectively which showed that group A has 1.3-4.06 times higher chances of pain reduction at six and eight hours.
Comparison of Tramadol and Ketorolac as Post-operative Analgesia in Open Cholecystectomy

Figure 1: Gender Distribution Cholecystectomy Patients

Figure 2: Response rate to group A and B in Post op Cholecystectomy patients

Table 1: Pain reduction in group A and B and their p-values at different time intervals
DISCUSSION

This study showed that more female (78%) undergo cholecystectomies. This is because gallstones and cholecystitis are more common in females compared to males. The mean age group was 38 years in this study. This is comparable to the study conducted by other researchers. This study showed that both group A and Group B drugs were equally effective in controlling pain at first three hours while additional analgesia was needed at 6th hour in group B (ketorolac). In a study conducted by M. J. Rodríguez et al. all showed that tramadol is superior to other NSAIDs including ketorolac while in other two studies, ketorolac 30 mg and diclofenac 75 mg demonstrated better pain control compared to tramadol 50 mg in dental procedures. No respiratory depression associated with tramadol was noted in this study. This is comparable with a double blind RCT study conducted by Alon E et al., which showed that Tramadol 50 mg and Buprenorphine 0.3 mg had no respiratory depression.

However, there were higher rates of side effects like nausea and vomiting in tramadol group. In another large study by Crossmann M et al. all showed that post-operative intramuscular administration of tramadol had higher rates of nausea and vomiting i.e. 17.8 and 7% respectively. The study also showed that there were no significant respiratory depression associated with tramadol. Other side effects were dizziness, dry mouth, tiredness and sweating. Another double blind RCT showed that tramadol, morphine and pethidine had resulted in equivalent pain score when these drugs were used as patient controlled analgesia after abdominal hysterectomies. In a study by Abdelwahab Hashem et al. showed that ketorolac is more safe and effective than pethidine in pain control in lithotripsy.

CONCLUSION

Ketorolac may be used as a safe alternative to opioids including tramadol as it gives equivalent pain control for intermediate durations of surgical procedures.

REFERENCES:
INTRODUCTION

Chiari malformations (CMs) are pathological herniation of hindbrain through the foramen magnum into the cervical spinal canal. These constitute a group of different clinical and pathological entities with varying etiology, pathophysiology and clinical features. Traditionally, these constitute four different clinico-pathological and radiological entities i.e. I, II, III, and IV with type Zero and type 1.5 as subclassification. Chiari I malformation is a common group among CMs. In this group of patients there is downward descent of the cerebellar tonsils below the foramen magnum for more than 5 mm. Sometimes, it is also associated with an elongated fourth ventricle. It is mostly a congenital disorder of mesodermal or sometimes a neuroectodermal origin but there are also acquired forms. Pathogenesis of CMs has been studied in detail by many researchers. They have described different theories but there is no solid consensus on any of these explanatory theories. Based on Cine MRI and ultrasound findings, Oldfield and his coworkers described a theory. According to their theory, anomalies associated with CIM induce a piston like motion.

Posterior fossa decompression with atlas post arch removal and augmentation duroplasty be the first and better surgical option for symptomatic CIM patients. There are several parameters but here is a consensus that surgical treatment is reserved only for symptomatic patients with CIM and early surgically intervention is usually associated with better outcome.
This motion affect cerebellar tonsils and produce systolic waves due to CSF flow. Thus in turn, these waves act on the spinal cord and induces CSF leakage through the interstitial and the perivascular spaces leading to syringomyelia.\textsuperscript{2} Nishikawa et al. studied the posterior fossa morphology of CIM patients. They reported that the occipital bone is not fully developed and there is compression of cerebellum and brainstem. According to them, these anomalies resulted in caudal herniation through the foramen magnum.\textsuperscript{3} Many other researchers have described different anomalies that contribute to the development of CIM. The clinical features of CIM is divided into three categories according to brainstem compression, spinal cord dysfunction and cerebellar compression. These include neck pain, headache, dysphagia, facial numbness, drop attack, upper limbs paresthesia, spasticity of legs, urinary incontinence, arms/hands weakness, ataxia and nystagmus.\textsuperscript{4}

There are several surgical procedures for treatment of CIM. The main objective and purpose of all these surgical techniques is to restore normal CSF flow at the foramen magnum level and to reestablish equilibrium between the intracranial and intraspinal-subarachnoidal spaces. There is a common consensus that surgical treatment is indicated only for symptomatic CIM patients but there is no consensus that which procedure is the best. Surgical procedure is not indicated prophylactically in asymptomatic CIM patients.\textsuperscript{5} Nagib has stated that clinical signs/symptoms is most important prognostic factor and he emphasized that surgical decompression should be done only when clinical signs/symptoms are present.\textsuperscript{6} In a review article, Nash et al. have described that surgical treatment is indicated only in patients with radiographic findings of hindbrain herniation and when clinical signs/symptoms are present.\textsuperscript{7} However, early surgical intervention is advocated when symptomatology is present. M. Zérah suggested PF decompression with atlas laminectomy without intra-dural maneuvers for symptomatic CIM patients.\textsuperscript{8} Lazarref and Valencia-Mayoral have also suggested PF decompression and atlas posterior arch removal is sufficient for CIM patients.\textsuperscript{9} Krieger and his co-workers conducted a study on 31 CIM patients. In their study, they did PF decompression with atlas laminectomy and augmentation duroplasty in all patients.\textsuperscript{10,11}

Ninety nine (99) CIM patients were studied by Valentini et al.\textsuperscript{12} Hankinson and his co-workers compared posterior fossa decompression without duroplasty to posterior fossa decompression with an augmentation duroplasty.\textsuperscript{13} Oró and Mueller have described in their study that there is no consensus on one specific surgical procedure that is considered to be with most favorable outcome in CIM patients.\textsuperscript{14} Similarly, Fernández et al. in their study have concluded that there is no consensus among the researchers and specialists regarding the etiology, surgical approach and follow up for CIM patients.\textsuperscript{15}

The main objective and rationale of our current study is to describe the better surgical treatment for CIM patients. On the basis of our self-experience and other previous literatures, we hypothesize that PF decompression with atlas posterior arch removal and augmentation duroplasty is a better surgical procedure for symptomatic CIM patients.

**MATERIALS AND METHODS**

It was a prospectively conducted randomized control trials and a hospital based study that was conducted in Department of Neurosurgery, Naseer Teaching Hospital, Peshawar. It was of three years duration from March, 2017 to March, 2020. A simple consecutive non-probability sample technique was undertaken. We studied eighty four (84) patients. Both genders and all age groups were included. All the patients were selected randomly with clinical and radiological findings (MRI craniovertebral junction) of CIM.

All the patients were selected randomly after getting permission from ethical committees of Naseer Teaching Hospital, Hayatabad Medical Complex, Lady Reading Hospital and Khyber Teaching Hospital, Peshawar. Informed consents were taken from all patients or attendants of patients. A predesigned Performa was used for collection of patient’s data, including patient name, age, gender, admission no, address, main clinical signs/symptoms and radiological findings. All the patients were diagnosed on the basis of clinical history, physical examination, MRI cranio-vertebral junction and sometimes 3Ds CT scan when need aroused. All the patients were operated under general anesthesia (GA) by a fellow Neurosurgeon of CPSP (College of Physicians and Surgeons of Pakistan) with a minimum experience of three years. Patients were operated in prone position. All the patients were divided in two groups A and B, randomly. In group B, only PF decompression with atlas laminectomy was done while group...
Clinical Spectrum and Surgical Management of Patients with Chiari-I Malformation

A, augmentation duroplasty was also done in addition to PF decompression and removal of atlas posterior arch. All the patients were kept in ward for 2-3 days and then discharged home on oral antibiotics and NSAIDS. They were called for follow up and stitches removal by 2nd week. All those patients who did not required repeated surgery for complete relief were categorized as favourable results and those who needed redo surgery were categorized as unfavourable results.

Statistical program SPSS version 22 was used for data analysis. Descriptive statistics like mean / standard deviation were calculated for quantitative variables like age and duration of clinical signs/symptoms. For categorical variations like gender, frequency / percentage were used. All the results are presented in tables and graphs/charts.

RESULT

We studied eighty four (84) patients. Among these patients, 57 patients (67.9 %) were females and 27 (32.1 %) were males. Mean age group was 14.5 years ranging from 8-37 years. 64 patients (76.2%) presented with occipital headache as the main symptom. In 3 patients (3.6 %) trigeminal neuralgia/facial numbness was main symptom along with same side hand weakness. 13 patients (15.5 %) complained of unilateral or bilateral arms pain and fingers numbness. In 4 patients (4.7 %) gait was main problem. Among these, in some patients there were also some other symptoms like visual deterioration, fingers ulcers, fingers weakness and hand atrophy etc. Among these patients, in half (50 %) patients simple PF decompression with atlas post arch removal done (Group B) while in 50 % patients, augmentation duroplasty was also done in addition (group A). In group B, 11 patients (26.2 %) required repeated surgery for complete relief while in group A, all patients except two (4.7 %) did well on routine follow ups (p-value=0.01) with Risk ratio of 1.29 (1.06-1.56) for Group A compared to B. In augmentation duroplasty patients, CSF leak was main post-operative problem (21.42 %, n=9) but all CSF leaks stopped on follow up with regular tight dressing. There was wound infection in 3 (3.6 %) patients from both groups. So on the basis of these observations, we emphasise that for symptomatic CIM patients, PF decompression with augmentation duroplasty is a superior option.

DISCUSSION

Regarding the management of CIM patients, there is no common consensus in spite of modern radiological advancement and better knowledge. But it is a general and common consensus that asymptomatic patients with CIM should not be considered for surgical intervention. A large scale survey was performed by pediatric neurosurgeons of the American Association of Neurological Surgeons and they all agreed on; that surgery should not be carried out on asymptomatic patients with CIM.25 It was concluded that surgery is indicated only in the presence of synringomyelia, brainstem dysfunction, cranial nerve dysfunction, kyphosis and other associated signs/symptoms of CIM25.
Strahle et al. examined diagnosed CIM patients and called them for regular long follow up without any surgical intervention. They concluded that the natural history in the majority of these patients was benign and in their there was no change in the amount of tonsillar herniation or in the pattern of CSF circulation.35

Numerous research studies and literatures supported and emphasized on early surgical intervention when symptoms are present26,28,29,36,37. But there are various school of thoughts regarding the proper surgical approach. There are different surgical approaches which are adopted for the treatment of CIM patients.28,32,36,38,39,40,41,42. Furthermore none of these surgical procedures works perfectly for all patients. Suboccipital PF decompression and atlas posterior arch removal is considered the main surgical approach by many neurosurgeons and atlas posterior arch removal is considered the proper surgical approach. There are different surgical approaches which are adopted for the treatment of CIM patients.26,32,36,38,39,40,41,42. Furthermore none of these surgical procedures works perfectly for all patients. Suboccipital PF decompression and atlas posterior arch removal is considered the main surgical approach by many neurosurgeons and researchers in majority of symptomatic CIM patients.27,28,30,32,41 On the other hand, majority of neurosurgeons considered suboccipital craniectomy with atlas laminectomy and an augmentative duroplasty as a standard surgical procedure in symptomatic CIM patients.39,40,41,44,45 By this procedure, in various literatures; up to 97% improvement in preoperative symptomatology of the patients have been reported.27,28,30,32,43 Sindou et al. performed a case series study. They perform far lateral foramen magnum opening and extensive suboccipital craniectomy in one group of patients and standard suboccipital craniectomy in other group. They concluded that an extensive suboccipital craniectomy and the far lateral opening of the foramen magnumis not better than the standard size suboccipital craniectomy. In addition, the extended craniectomy has more chances of predisposing to vascular injury, postoperative CSF leakage, prolonged operative time and vague suboccipital headache.40,41 However, there are anecdotal reports for performing no duraplasty in cases of children with CM-I. Durham and Fjeld-Olenec performed meta-analysis study and compared the results of posterior fossa decompression with and without duraplasty.

They concluded that the two techniques have similar results in regard to the postoperative clinical improvement of symptomatology and the decrease in the size of associated syrinx. They also found that duroplasty is associated with a lower risk of reoperation but there are more risk for postoperative CSF leakage.46 R. S Tubbs and his colleagues performed a meta-analysis study and compared two groups of CIM patients. In one group they have adopted arachnoidal adhesion lysis in addition to standard PF decompression and duroplasty while in 2nd group of patients they performed only PF decompression and augmentation duroplasty. They compared the post operative clinical and radiological outcomes in both groups on regular follow ups. They emphasizes that both groups have similar outcomes while arachnoid adhesions lysis carries more complication rate. They also stated that in cases of reoperation, arachnoid dissection is advantageous for opening adhesions and restoring CSF circulation. They concluded that for the first time, simple PF decompression with augmention duroplasty is better surgical procedure in CIM patients. Similarly, cerebellar tonsils resection/shrinkage is another controversial point. Alden et al. and Valentini et al. have reported in their studies that post operatively, the clinical outcome was similar in cerebellar tonsils resection patients and those without it.31,39 H. J Hoffman and coworkers have applied CSF obstruction CSF at the obex level for syringomyelia in CIM patients of pediatrics group. They have demonstrated that its application improves the surgical outcome of CIM patients.38

There are several complications of surgical intervention, both intra-operative and postoperative. Proper coagulation is mandatory during surgery to prevent any peri-operative blood loss and postoperative hematoma formation. The postoperative CSF leak is the most common complication when dura is opened in these patients. Wound infection, postoperative hydrocephalus, brain stem compression and gait problem are other occasionally facing complications. Mottolese et al. have reported complication rate of 18-20.5% in their case study and R. S Tubbs et al.44 reported a cumulative complication rate of 2.3% in their case series study.49,47

There is no consensus among the neurosurgeons and researchers about the etiology, surgical treatment and follow up of CIM patients. To increase the quality of life of these patients, multidisciplinary teams should be organized including all the professionals.

CONCLUSION:
In our current study, we discussed the clinical spectrum and the most commonly employed surgical procedure. On the basis of the findings of this study and clinical experience, it is suggested that the posterior fossa decompression with atlas post arch removal and augmentation duroplasty
be the first and better surgical option for symptomatic CIM patients. The advantages and disadvantages of different surgical procedures are also explained. There are several parameters which are considered for the prognosis of surgical outcome but here is a consensus that surgical treatment is reserved only for symptomatic patients with CIM. It is also stated that early surgically intervention is usually associated with better outcome. There is a large number of previously published clinical series but further clinical research with large scale studies is necessary for determine the most acceptable surgical intervention guidelines for these patients of CIM.

REFERENCES


Remdesivir for the Treatment of Covid-19 — Preliminary Report


Note: Dr. Misbah Durrani Assistant Professor Radiology, Rawalpindi Medical University & BB Hospital, Rawalpindi Dr. Inam ul Haq, Associate Professor, Associate Professor Al-Shifa Trust Eye Hospital, Rawalpindi and Dr. Arif Khan Associate Professor Ophthalmology, PIMS, Islamabad. In view of the fact that there are scores of cases and fatalities reported in Rawalpindi and Islamabad (Pakistan) they have joined the above team in research work.

ABSTRACT
Background. Although several therapeutic agents have been evaluated for the treatment of (Covid-19), none have yet been efficacious. We are producing preliminary report.

Methods. We conducted a double-blind, randomized, placebo-controlled trial of intravenous remdesivir in adults hospitalized with Covid-19 with evidence of lower respiratory tract involvement. Patients were randomly assigned to receive either remdesivir (200 mg loading dose on day 1, followed by 100 mg daily for up to 9 additional days) or placebo for up to 10 days. The primary outcome was the time to recovery, or hospitalization for infection-control purposes only.

Results A total of 1063 patients underwent randomization. The data and safety monitoring board recommended early results on the basis of findings from an analysis that showed shortened time to recovery in the remdesivir group. Preliminary results from the 1059 patients (538 assigned to remdesivir and 521 to placebo) with data available after randomization indicated that those who received remdesivir had a median recovery time of 11 days (95% confidence interval 9 to 12), as compared with 15 days (95% CI, 13 to 19) in those who received placebo (rate ratio for recovery, 1.32; 95% CI, 1.12 to 1.55; P<0.001). The Kaplan-Meier estimates of mortality by 14 days were 7.1% with remdesivir and 11.9% with placebo (hazard ratio for death, 0.70; 95% CI, 0.47 to 1.04). Serious adverse events were reported for 114 of the 541 patients in the remdesivir group who underwent randomization (21.1%) and 141 of the 522 patients in the placebo group who underwent randomization (27.0%).

Conclusions Remdesivir was superior to placebo in shortening the time to recovery in adults hospitalized with Covid-19 and evidence of lower respiratory tract infection.

INTRODUCTION:
Coronavirus, severe acute respiratory syndrome was first identified in December 2019. Several therapeutic agents have been evaluated, but none of them have yet been shown to be efficacious. Remdesivir (GS-5734), an inhibitor of the viral RNA-dependent, RNA polymerase with inhibitory activity against SARS-CoV and the Middle East respiratory syndrome (MERS-CoV), was identified early as a promising therapeutic candidate for Covid-19 because of its ability to inhibit SARS-CoV-2 in vitro. To evaluate the clinical efficacy and safety, randomized, double-blind, placebo-controlled trials, we describe the preliminary results evaluated with remdesivir as compared with placebo.

METHODS
There were 60 trial sites and 13 sub-sites in the United States (45 sites), Denmark, United Kingdom, Greece, Germany, Korea, Mexico, Spain, Japan and Singapore. Remdesivir was administered intravenously as a 200-mg loading dose on day 1, followed by a 100-mg maintenance dose daily for 10 days until hospital discharge or death. A matching placebo was administered according to the same schedule and in the same volume as the active drug. A normal saline placebo was used. Patients were assessed daily during their hospitalization, from day 1 through day 29.

The primary outcome measure was the time to recovery, defined as the first day, not requiring supplemental oxygen but requiring ongoing medical care, hospitalized, requiring any supplemental oxygen, requiring noninvasive ventilation or use of high-flow oxygen devices, receiving invasive mechanical ventilation.

The primary outcome was initially defined as the difference in clinical status, among patients treated with remdesivir as compared with placebo indicating that Covid-19 may have a more protracted course than previously appreciated. The follow-up was still ongoing This initial primary
outcome was proposed by trial statisticians. 72 patients had been enrolled.

RESULTS

Of the 1107 patients who were assessed for eligibility, 1063 underwent randomization; 541 were assigned to the remdesivir group and 522 to the placebo group. Of those assigned to receive remdesivir, 531 patients (98.2%) received the treatment as assigned. Forty-nine patients had remdesivir treatment discontinued before day 10 because of an adverse event or a serious adverse event other than death (36 patients) or because the patient withdrew consent. Of those assigned to receive placebo, 518 patients (99.2%) received placebo as assigned. Fifty-three patients discontinued placebo before day 10 because of an adverse event or a serious adverse event other than death (36 patients), because the patient withdrew consent or because the patient was found to be ineligible for trial enrollment.

A total of 391 patients in the remdesivir group and 340 in the placebo group had completed the trial through day 29, recovered, or died. Eight patients who received remdesivir and 9 who received placebo terminated their participation in the trial before day 29. There were 132 patients in the remdesivir group and 169 in the placebo group who had not recovered and had not completed the day 29 follow-up visit. The analysis population included 1059 patients for whom we have at least some post baseline data available (538 in the remdesivir group and 521 in the placebo group). Four of the 1063 patients were not included in the primary analysis because no post baseline data were available.

The mean age of patients was 58.9 years, and 64.3% were male. On the basis of the evolving epidemiology of Covid-19 during the trial, 79.8% of patients were enrolled at sites in North America, 15.3% in Europe, and 4.9% in Asia. Overall, 53.2% of the patients were white, 20.6% were black, 12.6% were Asian, and 13.6% were designated as other or not reported; 249 (23.4%) were Hispanic or Latino. Most patients had either one (27.0%) or two or more (52.1%) of the pre-specified coexisting conditions at enrollment, most commonly hypertension (49.6%), obesity (37.0%), and type 2 diabetes mellitus (29.7%). The median number of days between symptom onset and randomization was nine and 943 (88.7%) patients had severe disease at enrollment. Patients in the remdesivir group had a shorter time to recovery than patients in the placebo group (median, 11 days, as compared with 15 days; rate ratio for recovery, 1.32; 95% confidence interval [CI], 1.12 to 1.55; P<0.001; 1059 patients. Patients who underwent randomization during the first 10 days after the onset of symptoms had a rate ratio for recovery of 1.28 (95% CI, 1.05 to 1.57; 664 patients), whereas patients who underwent randomization more than 10 days after the onset of symptoms had a rate ratio for recovery of 1.38 (95% CI, 1.05 to 1.81; 380 patients).

Serious adverse events occurred in 114 patients (21.1%) in the remdesivir group and 141 patients (27.0%) in the placebo group; 4 events (2 in each group) were judged by site investigators to be related to remdesivir or placebo. There were 28 serious respiratory failure adverse events in the remdesivir group (5.2% of patients) and 42 in the placebo group (8.0% of patients). Acute respiratory failure, hypotension, viral pneumonia, and acute kidney injury were slightly more common among patients in the placebo group. No deaths were considered to be related to treatment assignment, as judged by the investigators.

The most common adverse events in the remdesivir group were anemia or decreased hemoglobin (43 events [7.9%], as compared with 47 [9.0%] in the placebo group); acute kidney injury, decreased estimated glomerular filtration rate or creatinine clearance, or increased blood creatinine (40 events [7.4%], as compared with 38 [7.3%]); pyrexia (27 events [5.0%], as compared with 17 [3.3%]); hyperglycemia or increased blood glucose level (22 events [4.1%], as compared with 17 [3.3%]); and increased aminotransferase levels including alanine aminotransferase, aspartate aminotransferase, or both (22 events [4.1%], as compared with 31 [5.9%]). Otherwise, the incidence of adverse events was not found to be significantly different between the remdesivir group and the placebo group.

DISCUSSION

Preliminary results of this trial suggest that a 10-day course of remdesivir was superior to placebo in the treatment of hospitalized patients with Covid-19. This benefit was seen in the number of days to recovery, even though the trial was ongoing, the data and safety monitoring board made the recommendation to manifest the results to the trial team members from the NIAID, and subse-
The findings in our trial should be compared with those observed in a randomized trial from China in which 237 patients were enrolled (158 assigned to remdesivir and 79 to placebo). However, the trial failed to complete full enrollment (owing to the end of the outbreak) and were unable to demonstrate any statistically significant clinical benefits of remdesivir. Little was known about the natural clinical course of Covid-19 when the trial was designed in February 2020. Emerging data suggested that Covid-19 had a more protracted course than was previously known, which aroused concern that a difference in outcome after day 15 would have been missed. The original primary outcome became the key of secondary end point. Numerous challenges were encountered during this trial. Training, site visits, and monitoring visits often were performed remotely.

The Food and Drug Administration has made remdesivir available under an emergency-use authorization for the treatment of adults and children with severe Covid-19 disease. Our preliminary report is intended to help inform clinicians considering the use of remdesivir. We are awaiting final visits, data entry, monitoring, and data lock for the last of the 1063 patients enrolled, after which an update of the results will be provided. To ensure the accuracy of the reported findings, we evaluated the primary outcome, key secondary outcomes, and mortality results on current data. The results were similar to those reported in the results section of this article. The full statistical analysis of the entire trial population must occur, in order to fully understand the efficacy of remdesivir.

These preliminary findings support the use of remdesivir for patients who are hospitalized with Covid-19 and require supplemental oxygen therapy. However, given high mortality despite the use of remdesivir, it is clear that treatment with an antiviral drug alone is not likely to be sufficient. Future strategies should evaluate antiviral agents in combination with other therapeutic approaches or combinations of antiviral agents to continue to improve patient outcomes.

The trial has also been funded in part by the governments of Japan, Mexico, Denmark. We also thank the National Institute of Allergy and Infectious Diseases, National Institutes of Health and the Infectious Disease Clinical Research Program.

**REFERENCES**


11. Royal College of Physicians. National Early Warning Score (NEWS) 2. 2017


Histopathological Evaluation of Thyroid Lesion

Shazia Naz, FCPs, Roeda Shams, FCPs, Ahmad Zeb, FCPs, Haroon Khan, MPhil, Aurang Zeb, FCPs, Rahman Ullah Jan, MCPS

ABSTRACT:
Background: Most of the thyroid diseases are amenable to medical and surgical treatment. It is reported that only in USA approximately 1-10% of adults have solitary nodule. Solitary nodules are more common in female and the benign lesions are more common than the malignant ones. Carcinomas of the thyroid are not very common accounting for less than 1% of the solitary nodules. A wide variety of lesions arise from thyroid gland and the exact and timely diagnosis play an important role in the management and treatment of patients. The aim of our present study was to find out the histopathological features and frequency of benign and malignant lesions of thyroid gland.

Material and Methods: From September 2018 to August 2019 total 100 patients were included in the study. Samples were collected from the surgical department of Naseer Teaching Hospital Peshawar. Both male and female were included who had thyroidectomy. Data for the study was obtained from the departmental records. Total of one hundred patients with age range 20 years to 70 years with mean age of 49 years were registered in this study. Out of these 100 patients, 14% were males and 86% females.

Results: In our study 100 post thyroidectomy patients were the subject. The age ranged from 20-70 years, 14 were males and 86 females. Out of these 58 cases were non neoplastic and 42 were neoplastic lesions. Most common lesions in non neoplastic was goiter followed by thyroiditis and mostly affecting females. In neoplastic lesions out of 42 cases 27 were benign lesions mainly adenoma and 15 cases were diagnosed as malignant lesions under microscope.

Conclusion: In our present study we tried to establish the fact that thyroid lesions are more common in females. Thyroid gland is affected by both neoplastic and non neoplastic diseases but the benign lesions outnumber the malignant lesions and the most common non neoplastic lesion is thyroid goiter. Most of the lesions are non neoplastic and goiter was the most common non neoplastic lesion. The most common neoplastic lesion was thyroid adenoma and the number of malignancies affecting thyroid gland was less than the benign lesions.

Key words: Goiter, adenoma, carcinoma, hematoxylin.

INTRODUCTION
Thyroid gland is situated in the anterior aspect of neck consist of two lateral lobes connected by isthmus. Thyroid produces hormones such as thyroxine (T4), triiodothyronine (T3) and calcitonin. Most common disorders of the thyroid gland are endocrinological diseases and the prevalence depends on various factors. It is mostly common in mountainous areas but also occur in areas remote from sea.[1] Thyroid gland has been the subject of great interest because of its developmental, inflammatory, neoplastic and hyperplastic disorders. [2] Histopathology play an important role in the accurate diagnosis of various thyroid diseases and its treatment. Accurate and correct diagnosis of neoplastic and non neoplastic lesions play an important role in the treatment and management of the patients. Clinical criteria provide clues to the nature of thyroid nodule and concern with the possibility of malignant disease. Fortunately the thyroid nodules are benign in nature in vast majority of the cases, but nodules in younger and male patients are usually neoplastic than in those who are old. Similarly solitary nodules are mostly neoplastic than are the multiple nodules. History of radiation to the area of head and neck is another factor associated with malignancy of thyroid. Correct and timely diagnosis of these conditions is very helpful in the management of patients and life saving.

Thyroid gland is affected by both neoplastic and non neoplastic diseases but the benign lesions outnumber the malignant lesions.

Morphological evaluation of the thyroid nodules after resection and its histopathological study is of great value in the diagnosis. [3] The pur-
pose of our study is to find out the frequency of benign and malignant lesions in a given population using light microscopy. Majority of the thyroid nodules are prove to be localized and benign, and benign neoplasms outnumbe the malignant one by a ratio of about 10:1.\footnote{4} Thyroid tumors are only 1% of the overall human malignancies. Under 1% of the solitary nodules are malignant but they are the most common malignancies of the endocrine system.\footnote{5}

**METHODOLOGY**

The present study was conducted for period of one year (between September 2018 to August 2019) at the Department of Pathology Gandhara Medical College Peshawar. The study population was about 100 patients with thyroid pathology undergone for thyroidectomy. All specimens and referred material submitted to the Department of Pathology from Naseer Teaching Hospital for histopathological study. Data for the study was collected from the departmental records. All patients were diagnosed with thyroid pathology after clinical evaluation. Both male and female ranging from 20 to 70 years of age was included. All were surgically treated. The tissues of the test population, submitted for histopathological evaluation were fixed in 10% buffered formalin for 16-24 hours. Gross examination of the tissue was done. Pathological areas were taken and processed, after which the processed tissue was embedded into paraffin wax block. Sections of 3-5um thickness were cut and taken onto slides and stained by the routine H&E stain. All cases were studied under microscope for histopathological evaluation of the lesions.

**RESULTS**

In this study 100 cases of thyroidectomy were received during the period of September 2018 to Aug 2019. Out of these 58 (58%) were non neoplastic and 42 (42%) were neoplastic lesions. The study included patients with age ranged from 20 to 70 years with mean age of 45. Maximum cases were seen in the age of 20 to 40 years. Most of the benign and malignant lesions are common in these age groups, so the load of the disease was common in this age group. Our mean age is much similar to the past studies done by Golder et al and Solomon et al.\footnote{6,7} In our study only 14 (14%) were male and the rest 86 (86%) were female patients. The male to female ratio is 14:86 or 14/86.

In the present study out of 58 (58%) non neoplastic cases, the most common thyroid lesion was hyperplastic thyroid nodule (50%). The most common hyperplastic thyroid lesion was goiter. The age affected ranged from 30-50 years mostly females. About 8 (8%) were having inflammatory lesions mostly thyroiditis. The maximum number of these lesions was seen in 20-60 years of age. Similar observation was done by Darwish et al.\footnote{8} and Serine et al.\footnote{9}. In our study out of 42 (42%) neoplastic cases, 27 (27%) were benign neoplastic lesions. Most common benign lesion was adenoma. Most of the cases fell in age group of 20 to 50 years. Out of total 42 neoplastic cases only in 15 (15%) specimens malignancy was diagnosed. Most of the malignant cases were diagnosed in the age range from 20 to 45 years. This is slightly lower than previous studies done on the subject by Darwish et al\footnote{8} and Khadilkar et al.\footnote{10} respectively. There is no clear explanation for this low incidence of thyroid malignancy in our study.

**Distribution of the disease according to Gender:**

**Distribution of the Neoplastic and NonNeoplastic thyroid disease:**
Distribution of the Neoplastic disease according to age:

<table>
<thead>
<tr>
<th>Lesion</th>
<th>Benign lesions</th>
<th>Malignant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenoma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>20 – 50 years</td>
<td>20 – 45 years</td>
</tr>
<tr>
<td>Percentage</td>
<td>27 %</td>
<td>15%</td>
</tr>
</tbody>
</table>

Distribution of the Non Neoplastic disease according to age:

<table>
<thead>
<tr>
<th>Lesion</th>
<th>Hyperplastic Lesion</th>
<th>Inflammatory Lesion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goiter</td>
<td>Thyroiditis</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>30 – 50 years</td>
<td>20 – 60 years</td>
</tr>
<tr>
<td>Percentage</td>
<td>50 %</td>
<td>08%</td>
</tr>
</tbody>
</table>

**DISCUSSION:**

This study was conducted on local population of Peshawar. To our knowledge such study in our population has not been conducted so far. In our present study we tried to establish the fact that thyroid lesions are more common in females. In our study most of these lesions were non-neoplastic and goiter was the most common non neoplastic lesion. This rate is higher in endemic goitrous regions. The most common neoplastic lesion was thyroid adenoma and the number of malignancies affecting thyroid gland was less than the benign lesions. A study done by American Association of clinical endocrinologists by Gharib H et al in 2006 showed that the most common benign lesions included colloid nodule, macrofollicular adenoma and lymphocytic thyroiditis, among others [11]. Most of the thyroid diseases are amenable to medical and surgical treatment. Thyroidectomy has an important value both in the diagnosis and therapy of the patients however approximately 7% of nodules yield unsatisfactory cytologic results on repeated biopsies that’s why surgery is strongly recommended for solid nodules and close observation or surgery for partially cystic lesions, as they may harbor neoplastic potential. [12,13] Our mean age is much similar to the past studies done by Golder et al and solomon et al. [6,7] Most of the malignant cases were diagnosed in the age range from 20 to 45 years. This is slightly lower than previous studies done on the subject by Darwish et al [8] and Khadilkar et al [10] respectively.

It is reported that only in USA approximate 1-10% of adults have solitary nodule. Overall the incidence of thyroid malignancy is low about 1% of all cancers and 3.3-17% of all the thyroid diseases[14]. The most prevalent malignant lesions by far are represented by PTC, followed by follicular thyroid cancer, MTC, anaplastic carcinoma and high grade metastas neoplasms. [15] Carcinomas of the thyroid are not very common accounting for less than 1% of the solitary nodules representing about 15,000 new cancer cases in North America each year [16,17]. The prevalence of thyroid cancer in patients with multinodular goiter is the same as in patients with a solitary nodule and is independent of number of nodules. However the likelihood of malignancy per nodule decreases as the number of nodules increases [18]. In our study almost all samples were taken from post thyroidectomy patients. However Previous studies have shown the ability of thyroid ultrasound to differentiate between benign and malignant lesions to avoid the unnecessary use of invasive procedures [19,20]. It will be a good field for further research to find out the ratio of malignant and non malignant lesions of thyroid on the basis of ultrasound. In this present study of almost one hundred patients, simple microscopic study revealed that solitary nodules are more common in female. Our results were almost similar to a previous study done by Rago T et al in 1998 and the benign lesions outnumber the malignant ones by a ratio of 10:1.

**CONCLUSION:**

Our study concluded that thyroid diseases mostly effecting women. Thyroid gland is affected by both neoplastic and non neoplastic diseases but the benign lesions outnumber the malignant lesions.

**REFERENCES:**

Histopathological Evaluation of Thyroid Lesion


4. HYDATED CYST
A young woman presented a history of blurred vision since 4-weeks, nontender proptosis with paresis of the left abducens nerve. A T2-weighted gadolinium-enhanced magnetic resonance image of the brain showed a well-defined, ovoid, cystic, and retrolubar lesion in the orbital cavity. The optic nerve was displaced nasally and the lateral rectus muscle was compressed. The patient underwent left lateral orbitotomy, and the cyst was completely removed but ruptured during surgery. A diagnosis of a hydatid cyst caused by the *Echinococcus granulosus* tapeworm was made. The patient received a 3-month course of albendazole, and at follow-up 3 months later, she had full recovery of visual acuity.

Curtesy:
Stelios F. Assimakopoulos, M.D., Ph.D.
Markos Marangos, M.D., Ph.D. University of Patras, Patras, Greece
Assessment of Nursing Practice in Delivering Safe Medication-I

Ryeesa Patres BSN 1, Muhammad Hussain BSN.,M.Sc (I)2, Muhammad Afzal BSN.,M.Sc.,(Haem), M.Sc.,(N) . MBA3 , Dr. Syed Amir Gilani PhD-Ultrasound4
Lahore School of Nursing, University of Lahore

ABSTRACT
Aims and Objectives: Administering medicine is one of the most serious duties of nurses profession as the unintentional faults may be dangerous. Numerous diseases like Hepatitis-B, Hepatitis-C, and HIV/AIDS and blood borne disorders could spread through parental route. People giving and receiving healthcare facilities are at a bigger risk of iatrogenic infections through injectable drugs as they are delivered by insecure injectable practices. Our aim is to detect this widespread practice, to get information and awareness amongst nurses about safe injection practice.

Material and Methods: An observational study amongst nurses was undertaken to evaluate their knowledge and awareness was conducted. A semi structured observational checklist was distributed, data was analyzed by using social sciences software (SPSS) version 25.

Results: Label was read prior to preparation of injection in 100% nurses. Recapping of needle was done in only 9.35% of total injections. Multi-dose vials were kept in centralized medication area and were discarded as per schedule. Healthcare providers followed proper technique while administering drugs by intramuscular, subcutaneous, intra-dermal and intravenous route.

Conclusion: The study result showed that the knowledge among nurses about safe injection practice is nearly up to mark. More emphasis should be put into the basic nursing education procedures in clinical practice to improve their knowledge and to eliminate any risk of error.

Keywords: Safe injection practice, checklists, nurse.

INTRODUCTION:
Injections are most commonly used in medical profession since 1848, Health workers used it as an extra medication to the patient. (Oladimeji et al., 2012). It was primarily introduced by Yaws and Kala-Azar in 1920s, and was used extensively after Second World War. WHO approximated that yearly 16 billion injections were administered in developing countries within a year means of 1.5 injections per person per year (Pepin et al., 2014).

Nurses were advised for dangers of needle stick injuries, hazardous applications such as recapping of needles, deploying used needles, from one person to another inadvertently. We are interested to a system to recap used needles would be simply noticed. Dangers and threats related to healthcare are needle stick injuries, spread of contagious infection, ecological contamination or filth, experience to radioactivity and public annoyance. Eighty percent (80%) of healthcare waste is a common waste or hazardous waste, 20% can be risky although 1% of risk waste is disposable. (Muralidir et al., 2015). Inappropriate discarding of syringes and NSI happenings replicate the process as there is an extensive gap amongst healthcare workers and the nurse’s awareness regarding nursing instructions, working skills, education on injection.(Martin et al., 2013).

The knowledge among nurses about safe injection practice is nearly up to mark in our hospitals. However, more emphasis should be laid into the basic nursing education and in the introduction to various procedures in clinical practice to improve the nurses’ medication knowledge and to reduce the risk of errors.

Patients in the hospital are at high risk of becoming infected if safety measures are not taken. A safe injection never lead to any harmful effect. This study was conducted to evaluate the awareness and practices between nurses of the Lahore General Hospital. In fact, inefficiency of the current practices of the injection safety is a significant responsibility of the hospital. On the average, there is a need to do a close observation of the injection safety.

1. What is the alertness level of nurses regarding injection safety?
2. What are the applied nursing flaws associated to injection safety at Lahore General Hospital?

To observe the widespread injection practices and to get information regarding awareness and practices amongst nurses regarding safe injection is the main objective. A safe injection is a technique that does not become the cause of injury to the receiver and does not expose the provider to any unnecessary questioning. Injection safety is defined as the phenomena in which the nurses have to know about the safe practices of injection administration and also aware about the adverse effects from unsafe practices.

Unsafe injection practices enhance the universal problem of blood-borne diseases. In 1983, human immune-deficiency virus was detected in the blood. In 1989, the hepatitis C virus and antibodies were found. Incidents of spread of blood borne diseases from injections are typically related to the perilous usage of multi-dosage vials or preparation of medicines actually polluted with blood or body fluids (Gaidhane et al., 2016).

Hospital infections noted gross morbidity and mortality entailing important additional expenses in healthcare all over the world. Carrying out correct precautions can lead to safe patient recovery and decreased infections up to 50% (Kundrapu et al., 2014). Drug withdrawal practice from vials and ampoules were followed if 100% of entire injections given with hygiene injection individually, practice of wearing hand gloves, use of injection equipment e.g., sterile equipments and at the end proper discarding of the used syringes can reduce the probabilities of infection (Foda et al., 2017).

Errors in drug choice and drug usage results in adverse actions in hospitals. Separately drug must be used at the right time, in the right dose and right order during the hospital stay. Color tags used for definite drugs decrease drug administration mistakes and the typical syringe label leads to the patient safety (Merry et al., 2017).

METHODOLOGY:

It was a direct observational (checklist) and cross-sectional study that was used for this research. This study was conducted in Lahore General Hospital, Lahore. Nurses were the target population for this research related to injection safety.

**Inclusion Criteria** All nursing staff working in the different department of Lahore General Hospital.

**Exclusion Criteria** All paramedical staff, Nursing assistants, team leaders and nursing students were excluded from this research.

A convenient random sampling technique was used for this study. The sample size was 120 employed from the hospital, as the total population is 180 and the study sample will be the 120 nurses.

\[
\text{n} = \frac{N}{1 + (N)(E)^2} \\
= \frac{180}{1 + (180)(0.05)^2} \\
= \frac{180}{1 + 0.0025} \\
= 120
\]

**Research Instruments.** This research consists of demographic variables, immunization and needle stick incidence, Nurses awareness regarding injection safety and a checklist containing 18 items to assess the practices of nurses regarding injection safety. Data analyses was done by the statistical packages for social sciences software (SPSS) version 25. Approval was taken from hospital authority of the department from where the data was collected.

**RESULTS:**

### Table #01: Demographic variables

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-30</td>
<td>61</td>
<td>49.6</td>
</tr>
<tr>
<td>30-40</td>
<td>58</td>
<td>47.2</td>
</tr>
<tr>
<td>40-65</td>
<td>1</td>
<td>.8</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>84</td>
<td>68.3</td>
</tr>
<tr>
<td>Married</td>
<td>36</td>
<td>29.3</td>
</tr>
<tr>
<td>Divorced</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>77</td>
<td>62.6</td>
</tr>
<tr>
<td>BSN (Post RN)</td>
<td>30</td>
<td>24.4</td>
</tr>
<tr>
<td>BSN (Generic)</td>
<td>13</td>
<td>10.6</td>
</tr>
<tr>
<td>Work Experience (In Years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5</td>
<td>77</td>
<td>62.2</td>
</tr>
<tr>
<td>5-10</td>
<td>41</td>
<td>33.3</td>
</tr>
<tr>
<td>&gt;10</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 01 showed that the majority of the age ranged from 20-30 and the frequency was 61 out of 120. 84 participants were single and 36 were married, 77 nurses are diploma holder, 30 with the BSN (post RN) and 13 with Generic BSN. 77 nurses had less than 5 years’ experience, 41 nurses had 5-10 years’ experience and only 2 nurses had more than 10 years’ experience out of 120.
Table # 02: Nurses awareness regarding injection safety

<table>
<thead>
<tr>
<th>SN</th>
<th>Items</th>
<th>Done Correct</th>
<th>Done Incorrect</th>
<th>Not Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Avoid recapping of needles after use.</td>
<td>109</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>02</td>
<td>Hand washing proceeding injection.</td>
<td>106</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>03</td>
<td>Use of gloves proceeding injection.</td>
<td>105</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>04</td>
<td>Appropriate disposal after use.</td>
<td>107</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>05</td>
<td>Avoid bending of needles after use.</td>
<td>107</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>06</td>
<td>Avoid reuse of used syringes or needle.</td>
<td>109</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>07</td>
<td>Appropriate use of safety boxes.</td>
<td>98</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>08</td>
<td>Use of dry cotton for cleaning area.</td>
<td>109</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>09</td>
<td>Adequacy of safety box supply.</td>
<td>115</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Regularity of safety box supply.</td>
<td>113</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Collection of needles in safety box.</td>
<td>114</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 02 showed that 109 nurses doing correct practice of avoid recapping of needles after use, 106 nurses performed hand washing before proceeding injection, 105 nurses used gloves before proceeding injection, 107 done appropriate disposal after use, 107 have the practice to avoid bending of needles after use, 109 avoid the reuse of needles, 98 nurses were aware of the appropriate use of safety boxes, 109 used dry cotton for cleansing area and 114 used safety boxes for the collection of needles.

Table # 03: Checklist to observe the practices of the nurses

<table>
<thead>
<tr>
<th>SN</th>
<th>Items</th>
<th>Done Correct</th>
<th>Done Incorrect</th>
<th>Not Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Wash hands before injection.</td>
<td>111</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>02</td>
<td>Wash hands after injection.</td>
<td>109</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>03</td>
<td>Wear gloves before injection.</td>
<td>100</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>04</td>
<td>Read the label over medication vial or ampoule.</td>
<td>101</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>05</td>
<td>Injections are prepared using aseptic technique.</td>
<td>102</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>06</td>
<td>The rubber septum on a medication vial is a disinfected with alcohol prior to piercing.</td>
<td>102</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>07</td>
<td>Aspirating drug from ampoule.</td>
<td>106</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>08</td>
<td>Needles and syringes are used for only one patient.</td>
<td>105</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>09</td>
<td>Two hands recapping.</td>
<td>105</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>Disinfection of area done by alcohol swab by using inward to outward direction.</td>
<td>104</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>11</td>
<td>Medication vials are entered with a new needle.</td>
<td>107</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>Multi-dose vials to be used for more than one patient.</td>
<td>105</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>Multi-dose vials are dated by HCP when they are first opened and discarded within the time period.</td>
<td>105</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>14</td>
<td>Immediate discarding of sharps in a sharp box.</td>
<td>107</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>Appropriate disposal / destruction of sharps.</td>
<td>113</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>Used needle outside safety box.</td>
<td>106</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 03. showed 111 nurses out of 120 washed hands before injection and 109 washed hands after injection, 100 nurses used gloves before injection, 101 nurses read the label over medication vial before injection, 102 nurses prepared injections with aseptic techniques, 102 nurses disinfected the rubber septum on the vial with the alcohol prior to piercing, 105 nurses used one syringe only for one patient medication, 105 nurses used two hands recapping of the syringes, 104 nurses used alcohol swab with proper technique (inward to outward direction) to disinfect the area, 107 nurses immediately discarded the them in the box.
DISCUSSION:

WHO defines health-care waste as the entire waste from a health that contains possibly infectious and non-infectious waste material. This study evaluated the widespread injection practice and awareness among nurses about safe injection practices in a tertiary care hospital. According to this observational study, maximum nurses read the label over vial or ampoule before administration of injections. Reading of label before proceeding injection is a virtuous exercise as it evades incorrect drug/dose/route of administration in patients. By reading the label the nurses become assured regarding the accurate administration of drug prescribed. (Hanrahan, Reutter., 2014).

The high level of consciousness about the mode of spread of HIV infection in the world is very much accountable. Alike studies in Cambodia and China similarly found that most of the injection providers were alert that HIV, HBV, and HCV spread through dangerous injection practices. It is not amazing that the information of injection safety was meaningfully related with the age and years of practice of health provider. The nurses having not enough knowledge of injection safety, probable not to have joined workshop and training seminars associated for the youngsters. (Kotwal et al., 2014).

This study discovered that the information of injection safety was average among the nurses. It is therefore suggested that systematic training workshops on injection safety should be organized by the hospital management to advance the knowledge of injection safety. Also, the hospital should progress the capability protocol for their employees in line with the national policy on injection safety and education on the accomplishment to avoid unintentional needle stick injury. This will significantly lessen the risks to developing blood borne infections and other threats related with needle stick injuries. (Dziekan et al., 2015).

CONCLUSION:

The study showed that knowledge of injection safety among nurses is average but with a substantial gap on their in-depth knowledge of hazardous injection practice. Their attitudes are usually good but they still have poor attitude towards needle stick injuries from syringes. While the learning base on NSIs remains to grow, research shows that such injuries are imperative and reason to fatal infections among nurses. Such exertions are best through program, behavioral and device-related issues for the re-occurrence of NSIs.

Recommendations: Distribution of information, instructions will be a steps in the safe injection practices are recommended. Re-orientation training of health personnel at periodic intervals should be undertaken. Strict monitoring of waste management according to the strategies be enforced. A topic of injection safety should be comprised in nursing syllabus with seminars at different times should be organized.

REFERENCE:

INSTRUCTIONS TO AUTHORS

To publish an article, we need to complete few steps as indicated by PMDC & HEC as follows. These instructions should be followed before submitting the article, otherwise your article will not be processed. It is extremely important to submit the article. The journal is published on quarterly basis on 1st of Jan, April, July and Oct. Kindly send your articles well in time at least 2 month prior to publication date. All queries pertaining to the publication of your article may please be made direct to the Chief Editor (phone: 0333 5158885) between 8-9 p.m. only on working days. Office is closed on Sundays. Following are the instructions.

1. First of all, permission from the Head of the Department of the Hospital/ or Ethical Committee, permitting you to conduct the study in approved institution and under the supervision of a guide from your hospital.
2. To transfer the rights to the journal Ophthalmology update.
3. The article on CD along with 3 photo-copies for peer review at 267-A, St: 53, F-10/4, Islamabad
4. The processing and publication charges are Rs. 15,000/- for each article, (without any discount) and must be pre-paid along with the article. The amount caters charges of TCS, fee for reviewers, cost of printing, publication, staff salaries, telephone, internet, essential bills, electricity and postal charges etc. The amount can be remitted through Bank draft preferably on line bank transfer to A/C: No 145-20620-714-126749 through Summit Bank (for summit bank Code: 145, for other banks:010405), Markaz F-10, Islamabad in the name of Ophthalmology Update. It must be paid along with the submission of the article. In case the articles is rejected by the reviewers, 50% of the paid charges will be refunded. Please make sure that your article is originally researched and not the repetition of documented facts in the text books. Otherwise you will be disappointed if the articles is rejected. The journals are mailed through ordinary post as a standard practice all over the world on NO PROFIT LOSS basis.
5. (important) Kindly let us have your correct postal address (otherwise journal is likely to be lost at the office address), telephone or cell number with E. Mail address as well as your photograph. Please do not forget to mention the full names, their qualifications, designation, place of posting of all the co-authors along with the details of corresponding author to facilitate future correspondence.
6. Articles will be returned to the Principal author due to rejection by the reviewers, plagiarism or repetition of subjects without any evidence of original research, language deficiencies, grammatical errors and typing mistakes. Please get your manuscript re-checked by the senior most co-author or a senior member of your department for any changes or correction and improvement of the manuscript before mailing to us. It is our worst experiences that medical authors generally have very poor expression of English language, therefore it is obligatory to get it rechecked by a senior colleague.
7. Please send the similarity index of the article. Its printing status will be determined after editing/review through TURNITIN and reviewers which may take 2-3 months. The principal Author and co-authors should declare the contributory role of preparing this 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 & references should be not less than 20.

This SOP has been designed by the HEC & PMDC which should be strictly followed. Most Important Note: All queries pertaining to the publication of your article may please be made direct to the Chief Editor (phone: 0333 5158885) between 8-9 p.m. only on working days. Office is closed on Sundays.

The Managing Editor, Ophthalmology Update
267-A, Street: 53, Sector F-10.4, Islamabad 44000
E. Mail>ophthalmologyupdate@gmail.com
website: www.Ophthalmologyupdate.com
Cell: 0333-5158885
بسم الله الٰلِّٰهِ مَلِكِ السَّلَامُ
مَعَ اسْبِنَةٍ شَيْءٍ فِي الأَرْضِ وَلَا فِي السَّمَاوَاتِ
وَهُوَ الْسَّمِيعُ العَلِيمُ

这就如同一本美丽的诗篇，其中包含了丰富的文化内涵，表达了对至高神的敬仰和虔诚。