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EDITORIAL

Nipradilol - A Novel Class of Nitric Oxide Donating Therapeutic Pathway to Glaucoma

Currently, we have several therapies to lower Intra Ocular Pressure (IOP) in order prevent progression of visual loss due to Glaucoma. Despite these therapeutic options, mostly patients continue to suffer visual loss. The role of Nitric Acid (NO) and its metabolic pathways provides a new therapeutic strategy to treat Glaucoma.

Joseph Priestly discovered NO in 1770 and it was considered to be a toxic gas, producing acute effects of tachycardia, dizziness and head ache from vasodilatation and was referred as "Monday Disease" for the next two centuries. In 1977 it was identified as an important component of producing vasodilatation in managing Angina Pectoris, Pulmonary Hypertension, thrombosis and athero-sclerosis. In 1987, endogenous NO was demonstrated in endothelial cells, having important regulatory roles in many biological systems and termed it as 'Molecule of the year' by the American Association for the Advancement of Science in 1992. In 1998 3 scientists were given Noble Prize in Medicine for researching its significant role in Cardiovascular system.

Nitric Oxide is synthesized by Nitric Oxide synthase (NOS) a P-450 enzyme. It has an important physiologic effect in regulating IOP and optic nerve head blood flow by decreasing vascular resistance and relaxation of smooth muscles resulting in local vasodilatation and increased blood flow to optic nerve head. Conversely, impairment of the NO pathway reduces optic nerve blood flow resulting in ischemia of the optic nerve. Nitric Oxide has an important physiological effects in several of the tissues relevant to the maintenance of IOP. It is known to increase trabecular outflow facility in the human anterior segment and lower IOP in animal models. The mechanism by which Nitric Oxide lowers IOP is via inhibition of the actin-myosin interactions which

leads to relaxation of cells in the trabecular meshwork and schlemm canal and subsequent enhanced aqueous outflow and IOP reduction.

Further, Nitric Oxide level is known to be low in the aqueous of patients with Glaucoma. Similarly Acetylcholine mediates vaso-dilatation via the generation of Nitric Oxide. Health professionals in a study suggest that higher dietary nitrate intake may be related to lower incidence of POAG. One such compound is *nipradilol 0.25 % twice daily*, which is approved by the Japanese health authorities for Glaucoma patients, it is basically a neuro-protective drug in NTG.

Nitric Oxide donating molecule nipradilol used in Japan seems to be the novel class of alternate therapeutic target in treating Glaucoma with beneficial effect for optic nerve head blood flow.

Latanoprostene bunod (LBN) is another Nitric Oxide donating drug, its prodrug is metabolized to Latanoprost by ocular esterase enzyme. LBN lowered IOP more than an equimolar dose of latanoprost did (35% and 25% respectively). In phase 2 study LBN provided 1 to 1.5 mm Hg greater IOP reduction than did latanoprost. In phase 3 study reported recently, 420 patients with PAOG randomized to receive either LBN 0.024 every evening and 0.5% Timolol twice daily for 3 months. The mean IOP was significantly lower with LBN (18 mm -25% reduction) as compared to Timolol. Patients experienced adverse reaction with LBN from mild to moderate irritation, conjunctival hyperaemia while severe pain with Timolol in few cases. However the investigators concluded that LBN 0.024% used once daily is safe and effective with significantly greater IOP lowering effects than Timolol. If LBN

Ophthalmology Update cordially welcomes the participants of 35th Lahore Ophthalmology and wishes them a happy stay in the historic city of Lahore.

is approved by USA F&D Administration, it would represent first new drug with a novel mechanism of action since the debut of Latanoprost in 1990. Other NO- donating (lowering IOP) is Bimatoprost drug currently under trial in monkeys. However, additional research is required to further explore preliminary observations.

CONCLUSION

Glaucoma is a multi-factorial disease with a complex patho-physiology. Reduction of IOP remains the only established therapy which is incompletely understood. Nitric Oxide donating molecule nipradilol used in Japan seems to be the novel class of alternate therapeutic target in treating Glaucoma with beneficial effect for optic nerve head blood flow. Other Nitric

Oxide donating therapies would offer, in future, a unique mechanism of action amongst existing treatment options.

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Ophthalmology Update wishes its readers a



YAG Laser Posterior Capsulotomy in less than 4 years old Children

Mahfooz Hussain FRCS¹, Prof Naeem Khattak FRCS², Homaira Iqbal Khan M.Phil³,
Asim Ali Shah FCPS⁴, Muhammad Aftab FCPS⁵, Faisal Nawaz FCPS⁶

ABSTRACT

Objectives: The objective of the study is to determine the possibility of YAG laser posterior capsulotomy in less than 4 years old children.

Material and Methods: This prospective study was carried out from April 2014 to August 2016. A total of 16 eyes of 14 children underwent YAG laser capsulotomy. All the procedures were done by first two authors.

Results: 16 eyes of 14 children underwent YAG laser capsulotomy. 14 eyes of 12 children had successful laser while in 2 eyes of 2 children laser could not be completed because of poor co-operation. Average age of 14 children undergoing laser was 3 years and 205.07 days while average age of 12 children having successful laser was 3 years and 198.66 days. Youngest child having successful laser was 3 years and 89 days.

Conclusion: YAG laser capsulotomy was successfully performed in 14 eyes of 12 children and 12 children out of 14 were saved from undergoing general anesthesia for surgical capsulotomy.

Key words: YAG laser, capsulotomy, posterior capsular opacity, visual axis opacification

INTRODUCTION

After cataract surgery Posterior capsular opacity (PCO) is one of the major causes of visual disability all over the World.^{1,2} Blindness and visual impairment due to PCO ranked fourth among the treatable causes of blindness in the Pakistan National Survey.³ In children PCO causes amblyopia in addition to decreased vision so it is important to treat PCO in children as soon as possible.⁴ PCO can be treated by surgical methods as well as by using Neodymium YAG Laser. In children doing YAG laser is particularly difficult due to poor co-operation of child. To make this possible we developed a counseling technique to train the children for YAG laser capsulotomy. This not only saves time and money but also saves child from general anesthesia, which is necessary for surgical capsulotomy.

Before YAG laser, the treatment of PCO was surgical capsulotomy. Nowadays YAG laser is safe and most effective outpatient method of posterior capsulotomy. YAG laser is photo disruptive laser which along with heat produces acoustic shock waves. This creates opening in the posterior capsule which results in improvement in visual acuity. YAG laser posterior capsulotomy is routinely performed nowadays but in children it becomes very difficult and requires lots of patience and co operation of the child.

YAG laser capsulotomy in younger children is possible which saves them from undergoing a surgical procedure and its complications. This procedure is not only cost and time effective as compared to surgical capsulotomy which may run into complications like endophthalmitis.

MATERIAL AND METHODS

This prospective study was carried out from April 2014 to August 2016. A total of 16 eyes of 14 children underwent YAG laser capsulotomy. All the procedures were done by first two authors. All children were treated with same Light Med ND:YAG laser. All YAG laser capsulotomies were done without using contact lens to make it more comfortable and acceptable for children.

We developed and adopted a special regimen to motivate and encourage children for YAG laser capsulotomy. We make child stand on stool to put his chin on slit lamp. First time we only take child's photo and then give him toffees or tin of juice. We repeat procedure 2-3 times to make child confident that this is not going to hurt him. After gaining child's confidence, we start capsulotomy. We do it in steps with only few shots at a time and then another treat to child in the form of toffees or juices. We were able to do complete capsulotomy in 14 eyes of 12 patients. In 2 eyes of 2 patients, we could not complete procedure, even after repeated attempts. Both these patients had surgical capsulotomy with anterior vitrectomy with 20 gauge cutter through corneal approach.

RESULTS

This study was carried out in 16 eyes of 14

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Patient No	Eye No	Age	Laser outcome	Comments
Case 1	Eye 1	3yrs, 121 days	Done	
Case 2	Eye 2	3yrs, 272 days	Done	
Case 3	Eye 3	3yrs, 342 days	Done	Eldest child
Case 4	Eye 4	3yrs, 301 days	Not done	
Case 5	Eye 5	3yrs, 303 days	Done	
Case 6	Eye 6	3yrs, 89 days	Done	Youngest child
Case 7	Eye 7	3yrs, 238 days	Done	
Case 8	Eye 8	3yrs, 245 days	Done	
Case 9	Eye 9	3yrs, 119 days	Done	
Case 10	Eye 10	3yrs, 152 days	Done	
Case 11	Eye 11	3yrs, 147 days	Done	
Case 12	Eye 12	3yrs, 186 days	Not done	
Case 13 (R eye)	Eye 13	3yrs, 175 days	Done	
Case 13 (L eye)	Eye 14		Done	
Case 14 (R eye)	Eye 15	3yrs, 181 days	Done	
Case 14 (L eye)	Eye 16		Done	

children who underwent YAG laser capsulotomy with success rate of 87.5%. 12 children were male with only 2 female children.

14 eyes of 12 children had successful laser while in 2 eyes of 2 children (case 4 & 12) laser could not be completed because of poor co-operation (see table). Both these patients had surgical capsulotomy with anterior vitrectomy through corneal approach with 20 gauge cutter and infusion cannula. Average age of 14 children undergoing laser was 3 years and 205.07 days while average age of 12 children having successful laser was 3 years and 198.66 days. Youngest child having successful laser was 3 years and 89 days while the oldest child in study was 3 years and 342 days old.

DISCUSSION

Early lens aspiration with intraocular lens (IOL) is recommended for unilateral pediatric cataract and bilateral visually significant cataracts but postoperative visual axis opacification (VAO) remains a big issue. VAO due to posterior capsular opacification (PCO) is very high and VAO occurs in up to 40% of pediatric patients after cataract surgery with IOL implantation even with a primary posterior capsulotomy (PPC)⁵. In both children and adult group, opacification does obscure the visual axis. However, in children after PPC, there is no capsule so the terminology VAO is usually used in children rather than PCO. This opacification is caused by a proliferation of epithelial cells on the posterior capsule or anterior vitreous face and can hinder the optical image quality needed for normal visual development. The rate of epithelial mitotic activity is higher in children compared to adult. In our study none of patients had PPC and VAO was due to posterior capsule. Age of cataract patients, surgical technique and type and materials of IOL are most common

influencing factor for PCO. Visual rehabilitation of a child with congenital or developmental cataract requires a great degree of commitment and effort from the treating ophthalmologist, optometrist as well as the parents. This is a time consuming, expensive and at times a frustrating exercise.

Control of childhood blindness is one of the priorities identified for achieving the goals of Vision 2020. This is considered a priority because blind-years (number of years that a blind person lives after going blind) due to childhood blindness are second only to cataract and half of childhood blindness is avoidable in a way that it can either be prevented or treated. The needs of children with cataract are different from that of adults. Management of the posterior capsule and aggressive amblyopia therapy are major factors governing the outcome of pediatric cataract surgery. PCO occurs frequently and rapidly following cataract extraction in children.⁶ In our study 12 out of 14 children had unilateral cataracts. In such patients obstruction of the visual axis occurs at a critical period of visual development and the major concern is amblyopia. Strategies to maintain a clear visual axis coupled with amblyopia therapy are necessary to achieve visual rehabilitation.⁷ YAG laser capsulotomy is a simple and relatively safe procedure but its use is limited to older and more co-operative children. In younger children, primary posterior capsulotomy and anterior vitrectomy have been advocated but in this study none of patients had PPC and all patients had YAG laser capsulotomy for PCO.

PCO-induced decreased visual acuity occurs in up to 50% of human adults following phacoemulsification surgery,⁸ with a higher risk in younger patients,⁹ particularly in traumatic pediatric cataracts.¹⁰ The

incidence of PCO has been somewhat lowered, but not eradicated, by improvements in IOL design, such as the square edge. PCO can be treated effectively with YAG laser capsulotomy. However, the cost is substantial, and there can be significant morbidity due to postoperative complications including damage to the IOL, cystoid macular edema, retinal detachment, IOL sub-luxation, exacerbation of localized endophthalmitis, and retinal detachment.¹¹

There are different techniques of treating pediatric PCO in children.¹² PCO can be managed during surgery or postoperatively, depending upon surgical skills and facilities available. During surgery PCO in younger children can be managed by approaches like pars -plicated posterior capsulorhexis,¹³ posterior capsulectomy,¹⁴ sutureless vitrectomy, sealed-capsule irrigation, and bag-in-the-lens IOL but all these approaches are per operative. Postoperatively, PCO can be managed by surgical capsulotomy¹⁵ and YAG laser. In younger children YAG laser has been reported under general anesthesia but in our study we managed to do YAG laser in normal clinical office settings. In YAG laser under GA¹⁶, anesthesia was induced in the supine position and the patient was then transferred to the sitting position with chin in the slit-lamp laser delivery system. But in our study, we managed to do YAG laser in children in most of patients less than 4 years of age.

CONCLUSION

YAG laser capsulotomy in younger children is possible and it saves child from undergoing a surgical procedure and its complications. This procedure is not only cost and time effective as compared to surgical capsulotomy but also there are surgical complications like endophthalmitis.

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Jahanzeb Durrani

Non-Surgical Management of Congenital Blockade of Nasolacrimal Duct

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ABSTRACT

Objective: To determine the success rate of Non-surgical Management of Congenital Nasolacrimal Duct Obstruction (CNLDO) with Crigler Massage in children below the age of one year.

Study Design: Hospital based cross sectional observational study.

Place and duration of study: The study was carried out in the Department of Ophthalmology at HBS General Hospital attached to Hazrat Bari Sarkar Medical & Dental College, Islamabad from 15th Nov' 2015 till 15th May 2016.

Methodology: One hundred children with watering of eyes, due to congenital blockage of the distal part of the nasolacrimal duct at the Valve of Hasner, unilateral or bilateral with, no sex predisposition were included in the study. Initially, Crigler Massage was advised to all the parents for a period of 1-3 months with practical demonstration and the results were documented every fortnight.

Results. There were 52 children up to the age of 6 months and 48 children between 6-12 months. 53% were male and 47% were female children. Amongst them 67% had unilateral complain and 33% were bilaterally affected. At the end of 1-3 months 90% of the children with congenital NLD blockade achieved patency, and only 10% of the cases were subjected to Bowman's probing under short anesthesia.

Conclusion: CNLDO mostly resolves spontaneously through conservative approach through Crigler Massage as an initial management, having highest success rate if done consistently. Probing and other surgical procedures should not be considered prematurely before the age of 12 months.

Key Words: Naso lacrimal duct (NLD), Naso lacrimal duct obstruction(NLDO), Epiphora, Dacryo-stenosis, Valve of Hasner, Probing, Dacryo-cysto-rhinostomy (DCR)

INTRODUCTION

During embryonic development, canalization of the nasolacrimal is usually complete at birth. The duct measures 12mm in length and opens into the nose through an ostium under the inferior meatus.^{1,7} presence of membranous obstruction at the lower end of the nasolacrimal duct (Valve of Hasner) occurs roughly in 50% of the newborn (dacryo-stenosis).² but only 2-6% exhibit the clinical symptoms^{3,4} at 2-4 weeks of age with watering, sticky eyes and rarely swelling over the medial canthal area from pus can be express. Of these, approximately one third have bilateral involvement with no genetic or sex predisposition which causes concern amongst the parents. Numerous management options are available and can be

divided into conservative (non-surgical) and surgical. Conservative option include use of antibiotics and lacrimal sac massage may be needed to suppress the mucoid or purulent discharge.^{5,6} In doubtful unilateral cases, the Fluorescein Disappearance Eye Test (FDT) is helpful which can be performed as an outpatient procedure.

CNLDO mostly resolves spontaneously through conservative approach through Crigler Massage as an initial management, having highest success rate if done consistently. Probing and other surgical procedures should not be considered prematurely before the age of 12 months.

In view of the non-serious attitude of the parents, they do not like to prolong the misery of the child through conventional messaging of the NLD and persistently using eye drops, perhaps they fear at the back of their mind that prolonged treatment may ultimately deteriorate the visual acuity of the child, hence they force the ophthalmologist to make a hasty decision for invasive surgical intervention.

This is an original study, not yet reported in

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literature, is basically aimed to save the children from possible complications of anaesthesia and invasive procedures. The basis of this study is to make the parents understand the simplicity and ease of the conventional procedure to carry out with patience. It is only 10% of cases, where the obstruction The symptoms usually resolve within six months in 75% of eyes in unilateral involvement but less successful with bilateral obstruction hence more invasive intervention is required but never before the age of one year.

It has generally been observed that the parents with the poor knowledge of the massaging benefits, take a non-serious view of the condition. They pressurize the ophthalmologist to carry on the probing procedure as a preferred treatment without considering the possible dangers of anesthesia and complications of major surgical intervention like DCR. No such study has ever been reported in literature on the inherent benefits of Crigler Massage^{7,8} if carried out seriously in order to save the infants from the complications of surgical maneuver and general anaesthesia.

In fact, children with persistent obstruction or failure of Crigler Massage beyond the age of one year, should only be advised probing. If symptoms persist after probing then the procedure can be repeated thrice or a Crawford stent is used to keep the passage patent, which fails in the long run. Being skeptic, we have never considered the use of stent in our cases. In this study we have strongly recommended the parents to consider the inherent benefits of Crigler Massage more seriously in order to avoid the possible of non-conservative management.

METHODOLOGY

Probing and irrigation of NLD is a procedure used to assess the anatomy and functional status of the lacrimal drainage system. When done correctly, it is a safe procedure that provides extremely useful diagnostic information, as well as assists in surgical planning if pathology is encountered. The study was conducted from 15th Nov'2015 to 15th May 2016 in Hazrat Bari Sarkar General Hospital, Islamabad to determine the efficacy of management of CNLDO in infants below the age of one year, presented with watering of eye unilaterally or bilaterally due to persistent membranous obstruction at the lower end of the nasolacrimal duct (Valve of Hasner) which occurs up to 50% of the neonates (dacryo-stenosis).

Inclusion Criteria: One hundred children below one years' age with epiphora were included in the study with no sex, genetic predisposition.

Exclusion Criteria: Children with conjunctivitis,

ophthalmia neonatorum, glaucoma, congenital anomalies due to punctal or canaliculur atresia, entropion and trichiasis were *excluded* from the study.

There were 52 children up to the age of 6 months and 48 up to the age of 12 months. 53% were male and 47 (47%) were female children. Sixty seven percentage had unilateral complain while 33% suffered bilaterally. Only one eye was affected in 67% and 33% in both eyes.

In doubtful unilateral cases, the Fluorescein Disappearance Eye Test (FDT)⁹ was carried out as an outpatient procedure. A drop of fluorescein was instilled into the eye or introduced on a moistened fluorescein strip. Retained dye in a high tear strip was considered diagnostic of the obstruction, as compared with the normal second eye, in which the dye disappeared from the eye after 5 minutes. Such patients were subjected to Crigler Massage followed by pressure irrigation (PI) on cases whose obstruction was not cleared with massage and / or topical treatment.

In Crigler Massag, the parents were advised to do ten downwards stroking four times daily in order to raise hydrostatic pressure thus created which will rupture the Valve of Hasner and open the nasolacrimal duct passage. Anatomically, the Valve of Hasner is just like a peel of the onion and gives way easily under the firm and repeated 10-stroke finger massage over the lacrimal sac. We let them go with the advice to use the antibiotic eye drops like gentamycin 0.3%. Usually the symptoms resolved within six months after repeated massage, but less successful in bilateral NLDO. Such cases were subjected to Bowmans' probing under general anesthesia but surgical interference was rarely considered before the age of 6 months.

In some cases, acute dacryocystitis may manifest as acutely inflamed lacrimal sac with cellulites overlying the skin. Systemic antibiotic were started promptly which resolved the condition in few days. After the resolution elective probing was carried out to prevent the recurrence of symptoms, If symptoms persisted then the procedure was repeated up to 3 times. Apart from this many other intubation techniques has been described such as Balloon catheter which is introduced in the blocked duct in a manner similar to probing. The role of this modality remains undefined as simple probing has a high success rate.

Probing was carried out in 10% of the cases under G.A. after carrying out general and local investigations and histopathology of the conjunctival secretions. The infected cases were deferred in order to avoid trauma to the inflamed and friable lacrimal sac and only to be undertaken when the conjunctival sac was

completely aseptic. Three probes of different calibers were negotiated successfully in the NLD and emerged out from the inferior ostium in the nose. We syringed the nasal passages carefully with. In the presence of tainted blood the probe was withdrawn and re-introduced carefully in order to avoid any trauma to the passage. After the procedure the patients were usually discharged after 4 hours with the instructions to carry on the Crigler Massage at least 3-4 times under the cover of antibiotics eye drops being used 4 hourly for 4 weeks. The child was repeatedly observed after one day, one week, 3 weeks and 6 weeks, to observe any recurrence of symptoms. If the parents still complained of epiphora, the procedure was further repeated once or twice after a month. Finally, in cases of complete failure the child was registered for. Dacryo-cysto-rhinostomy (DCR surgery in due course of time.

RESULTS

There were 52 children up to the age of 6 months and 48 children up to the age of 12 Months. Fifty Three percent were male and 47 (47%) were female children. Sixty seven percent had unilateral complain and 33% were bilaterally affected. The exclusion criteria was followed in all children presenting with acute conjunctivitis ophthalmia neonatorum, glaucoma, congenital anomalies (punctual or canalicular atresia or agenesis) entropion and trichiasis.

In doubtful cases or those with unilateral tearing/ watering eyes a Fluorescein Dye Disappearance Test (FDT) was performed to confirm the diagnosis of nasolacrimal duct obstruction. We managed the children with congenital blockage of the NLD with conservative method i.e., Crigler Massage. Also we advised topical antibiotics to the child for one to two weeks. We reviewed the children at the end of one month to 3 months, ninety percent (90%) had the resolution of the symptoms at the end of 3 month. Only four children required probing.

These results showed that if Crigler Massage done properly with firm pressure, not so vigorously, it proved to be very effective method of treating congenital NLDO, and preventing failure of the surgical procedure, creation of false passage and bleeding though rarely.

Table: 1 Age of the infants complaining of constant epiphora.

	n	%
Age > 1 month – 6 Months	52	52%
< 6 Months – 12 month	48	48%
	100	

Table: 2 Percentage of gender distribution

Gender	n	%
Male	53	53%
Female	47	47%
	100	100%

Table:3 Percentage of unilateral or bilateral involvement

	n	%
Unilateral	67	67%
Bilateral	33	3%
	100	100%

Table: 4 Incidence of right or left eye

Eye	n	%
Right eye	46	46%
Left eye	54	54%
	100	100%

Table 5: Treatment at the end of three month

With Crigler Massage	n 96	Success rate 96%
Probing	4	4%
	100	100%

P Value >0.5, which is significant

DISCUSSION

During embryonic development, the canalization of nasolacrimal apparatus is usually complete by birth.⁹ However, membranous obstruction at the lower end of the duct occurs in up to 70% of the neonates (dacryostenosis) at the level Valve of Hasner. However, it is only 2-5% of newborns, exhibit the clinical phenomena of nasolacrimal duct obstruction.¹⁰ Studies have reported spontaneous resolution of the obstruction with conservative (non surgical management).

Clinically infants present with epiphora, which develops within six weeks of birth or may be earlier and the parents report of pussy discharge, recurrent conjunctivitis, crusting of the eyelids, and a swelling over the medial canthal area from which they can express the pus. In our study, 52% of the children reported positive symptoms between the age of 1-6 months and 48 % between the age of 6-12 months¹¹ In our study, the time of onset of symptoms were invariable within 1 month after birth.

The work of Takahashi et al^{14, 15} suggests that the nasolacrimal ducts are encountered with a normal burden of tears within the first few days of life and a

controversy has existed regarding the proper treatment of congenital nasolacrimal obstruction through non-surgical or surgical management. Peterson et al.,¹³ studied the natural course of congenital nasolacrimal obstruction in 50 infants and found that 44 infants had spontaneous resolution of their problem with conservative management.^{14,15} They recommended that conservative treatment be carried out for six to eight months in the absence of congenital mucocele or any other pathology of nasal mucosa. In our study we undertook only those cases which presented the obstruction at the lower end of the NLD. Cases with nasal pathology were excluded.

In 1923, Crigler described a technique of putting digital pressure over the nasolacrimal sac which ruptured the membranous obstruction at the Valve of Hasner. He reported 100% success with this technique during a period of seven year, but he did not indicate the size of his clinical series. In our studies we found ninety six percent (96%) had the resolution of the symptoms at the end of 1-3 month, only four children required probing.¹⁶

Nelson et al., reported a cure rate of 94.6% in 203 cases of congenital nasolacrimal duct obstruction by one year of age using a similar technique of Crigler Massage of the nasolacrimal system which exactly correlated with our study.

Paul et al., reported a success rate of 87% in 55 patients within a period of 16 months with conservative therapy consisting of massage and topical antibiotic eye drops. Many ophthalmologists insist that nasolacrimal duct obstruction should be managed conservatively whenever possible as the majority will spontaneously open by 3-8 months of age.^{15, 16}

Miller AM, et al¹⁶ in 1700 cases introduced the concept of probing and irrigation, which was an exciting new method to evaluate the abnormality of lacrimal drainage system. Kashner demonstrated that the irrigation is more effective with pressure than without it. Ekinciler et al. performed pressure irrigation (PI) on cases whose obstruction was not cleared with massage and / or topical treatment. They reported that among the remaining 48 patients that did not benefit from massage, relief was obtained in 30 cases by PI.^{17,18} They also stated that PI should be attempted before probing in all patients. It is interesting that very few investigators have advocated the use of PI. We did not encourage PI in the outpatient department except in cases where Bowmans' probing was used with increasing caliber. Most of the cases responded well with the first engagement and we used the normal irrigation of the duct with saline to ensure the patency

of the duct.

In our patients Crigler Massage – a nonsurgical management with antibiotic drops resolved the symptoms in 75% of eyes within six months¹⁹, but less successful with bilateral NLDO. Children with persistent obstruction beyond one year of age were referred for probing, rarely considered¹⁷ before the age of 6 months²⁰. Only 4 cases persisted symptoms after probing and irrigation, hence the procedure was repeated. We did not encounter any complication of probing in any case like failure of the procedure, creation of false passage and bleeding or infection. Our study lays more stress on the need of nonsurgical and conservative management through repeated Crigler Massage with persistence at least up to the age of 12 months, using antibiotic drops and regular consultation with the ophthalmologist and avoiding non-serious attitude with a more serious outlook. Our study has proved the benefits of serious uptake of the problem, rendering resolutions of 90% blockade of the NLD.

CONCLUSION

We have concluded that congenital NLDO is a common problem in almost 5% of infants which resolved spontaneously with Crigler Massage with a high success rate. Probing or surgical procedures should not be considered prematurely before 6 months of age.

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میں فقط ایک ہی تصویر کہاں تک دیکھوں
احمد ندیم قاسمی



Aziz Shaher

Prevalence of Diabetic Retinopathy in Type: 2 Diabetic Patients using Insulin vs those using oral Hypoglycemic Agent

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ABSTRACT :

Aim : to compare the prevalence and characteristics of diabetic retinopathy (DR) among type 2 diabetic Yemeni patients of more than 10 years duration of diabetes mellitus (DM) using oral hypoglycemic agents (OHA) versus those using insulin for more than 10 years.

Method : 300 type 2 diabetic patients were included in this study, 150 using OHA and 150 using insulin for more than 10 years and they underwent eye examination of anterior and posterior eye segments by slit lamp biomicroscopy and ophthalmoscopy. Fluorescein angiography and OCT were done when required. Also demographic characteristic and medical history were determined.

Results : 300 patient with type 2 DM of more than 10 years duration were included in this study, 150 patients using OHA and 150 patients using insulin therapy for more than 10 years. 124 were female and 178 were male. DR was found in 152 patients (50.7%). DR was seen in 105 (70%) patients of 150 patients using OHA and in 47 (31.3%) patients of 150 patients using insulin for more than 10 years. The prevalence of DR was higher in patients using OHA as compared to those using insulin. This difference was found to be statistically significant ($p = 0.0005$).

Conclusion: This study demonstrated a significantly high prevalence of DR in Yemeni type 2 diabetic patients using oral hypoglycemic agents as compared to those using insulin therapy.

INTRODUCTION

DM is a chronic disease with a growing worldwide prevalence¹ and has specific microvascular and macrovascular complications that affect many organs of the body, including retina in the form of DR². DR is a sight-threatening chronic complication of DM and is the leading cause of acquired blindness in adults as reported by the American Diabetes Association. DR is one of the most common diabetic complication that develops in nearly all patients with type 1 diabetes and in more than 77% of those with type 2 diabetes who survive over 20 years with DM². The New Castle study found that in patients diagnosed with type 2 diabetes, almost 15% had signs of retinopathy at diagnosis, 55% after 10 years, and 70% after 15 or more years⁴.

Glycemic control is the key modifiable risk factor associated with the development of DR and there is a general agreement that the duration of DM and severity of hyperglycemia are the major risk factors for developing DR in type 2 DM⁵. However, DR prevalence varies among nations and ethnicity⁶.

The aim of the present study was to assess the prevalence of DR and its characteristics in Yemeni

patients with type 2 DM of more than 10 years duration, comparing those using OHA vs those using insulin for more than 10 years to control hyperglycemia.

The insulin therapy of type 2 Diabetes Mellitus is significantly more effective in prevention and delay of the progression of diabetic retinopathy than oral hypoglycemic agents, emphasizing the importance of tight glycemic control of diabetes with insulin and establishment of a National Education Program in order to promote routine retinal screening of diabetic patients.

MATERIALS AND METHODS

This cross section study was carried out in type 2 diabetic patients attending Doctor Eye Center, Sana'a, Yemen, from January 2006 to December 2015 and conducted on 300 patients diagnosed to have type 2 DM of 10 years or more duration. Out of these, 150 patients using OHA for DM treatment and 150 patients using insulin therapy for more than 10 years.

inclusion criteria: patients having type 2 DM for more than 10 years, those using insulin for more than 10 years aged was 30 years or more. The following groups of patients were *excluded* from the study

1. Those in whom dilatation of the pupils was contraindicated such as those with angle closure glaucoma.

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2. Patients with DM of less than 10 years .
3. Patients with hazy media that impair fundus visualization .
4. Age less than 30 years .
5. Insulin therapy for DM of less than 10 years .
6. Any ocular disease that affects the fundus picture such as CRVO , CRA, Uveitis and Optic atrophy

Each patient underwent detailed history regarding age, sex, duration of diabetes , treatment modality of diabetes and its duration and full ophthalmic examination including VA, BCVA, slit lamp examination of the anterior eye segment, intraocular pressure measurement by applanation tonometry and the pupils were dilated, by 1% tropicamide eye drops to achieve maximal pupil dilation, to evaluate the fundus of both eyes by using direct and indirect ophthalmoscopy with 20 diopters lens and slit-lamp biomicroscopy with +90 D Volk lens. Fundus fluorescein angiography and OCT were used wherever indicated .

Diabetic retinopathy was diagnosed and graded according to the International Clinical Disease Severity Scale for DR and diabetic macular edema (DME). This scale is based on the Early Treatment for Diabetic Retinopathy Study (ETDRS) Classification of DR and on data collected in the clinical trials and epidemiologic studies of DR⁷, where DR staged as No apparent retinopathy with no abnormalities, Mild non-proliferative DR (NPDR) with micro-aneurysms only, moderate NPDR with more than just micro-aneurysms, but less than severe NPDR, severe NPDR with any of following (1-2-4 rule), 1-more than 20 intra-retinal hemorrhages in each of the 4 quadrants, 2-definite venous beading in 2 or more quadrant and 3-prominent intraretinal microvascular abnormalities in 1 or more quadrants and no signs of proliferative retinopathy , and proliferative DR (PDR) with neo-vascularization , fibrovascular proliferation +/- tractional retinal detachment, rubeosis irides, pre-retinal hemorrhages and/ or vitreous hemorrhages. The edema as graded as present or absent .

The data was entered in excel special sheet . It was checked for consistencies and duplication. Statistical Package for Social Studies (SPSS 21) was used for data analysis and the Mantel -Henzal p value was used for 2x2 tables .The continues variables (age , duration of DM and duration of DM among DR) are presented as mean and standard deviation . The categories variables (gender, age groups, period of DM an presence of DR) are presented as frequency and percentage . To review the statistical significance relationship, we used chi-square for analysis .The presence or absence of DR was dependence variable. Age, gender, duration of DM

and type of treatment for DM were the independence variable. Also, relationship was studied according to the type of treatment of DM , in which it was the dependent variable and gender, duration DM, presence or absent of DR and grade of DR were the independent variable.

RESULTS

A total of 300 type 2 diabetic patients of more than 10 years duration of DM were studied. Of these 124 (41.3%) were female and 178(58.7%) were male. The average age of patients was 57.52 ± 9.97 (SD) years .The average age of patients was 57.52 ± 9.97 (SD) years .The mean time duration of DM \pm SD was 14.81 ± 6.0 years, while the mean time duration of DM treatment \pm SD was 15.11 ± 6.06 years with OHA and 14.5 ± 5.9 years with insulin as shown in table 1 .

Table 1: Shows patient demographic and clinical characteristics

Age in years (mean \pm SD)	57.5 \pm 10.0
Gender	Male 176 (58.7%) Female 124 (41.3%)
DM duration in years (mean \pm SD)	14.8 \pm 6.0
Time duration of DM treatment in years (mean \pm SD)	OHA 15.11 \pm 6.06 Insulin 14.50 \pm 5.90

150 patients were using OHA and 150 patients using insulin for DM therapy. The overall prevalence of DR was found in this study to be 50.7% . Regarding type of DR , the prevalence of mild - moderate NPDR , severe NPDR and PDR was 10.7 % , 4.3 % and 35.7% respectively, as shown in table 2.

Table 2: Shows the prevalence of DR and it grade among DM patient

DR	Count	%
No DR	148	49.3
DR	152	50.7
Grade of DR		
Mild -moderate NADR	32	10.7
Severe NPDR	13	4.3
PDR	107	35.7

Of 152 patients having DR, 93 patients were men (52.8%) and 59 were women(47.2%) with no significant difference regarding the gender($p = 0.37$)

For those using oral hypoglycemic agents (OHA), the mean time duration of DM and its treatment was 15.11 ± 6.06 (SD) years . DR was found in 105 patients (70%) where mild -moderate NPDR represented the most common grade and was found in 14(9.3%) patients and severe NPDR was found in 6 (4%) patients while PDR was seen in 85(56.7%) patients as shown in table 3 . For those using insulin therapy for DM, the mean time duration of insulin therapy was 14.50 ± 5.90 years (SD) . DR was found in 47 patients (31.3%) where

mild to moderate NPDR was presented in 18 patients (12%) and severe NPDR was found in 7 patients (47%) while PDR was seen in 22 patients (14.7%), as showed in table 3.

Table 3: Outlines the relation frequency of DR and its different from insulin group and OHA group.

PDR	OHA No(%)	Insulin No (%)	P value
No DR	45(30%)	103(68.7%)	□ 0.0005
DR	105(70%)	47(31.3%)	
Mild –moderate PDR	4(9.3%)	18 (12%)	
Severe NPDR	6 (4%)	7 (4.7%)	
PDR	85 (56.7%)	22 (14.7%)	

The prevalence of DR was found to be significantly higher in those using OHA for DM therapy as DR was found in 105 (70%) patients using OHA as compared to 47(31.3%) patients using insulin therapy as showed in table 4.

Table 4: shows the prevalence of DR among DM patients according to treatment regime

Treatment	DR No(%)	No DR No(%)	P value
OHA	105(70%)	45 (30%)	□ 0.0005
Insulin	47(31.3%)	103(68.7%)	
Total	152(50.7%)	148(49.3%)	

DISCUSSION

This study included 300 type 2 diabetic patients of more than 10 years duration. 150 patients using OHA and 150 using insulin for diabetes treatment for more than 10 years. The overall prevalence of DR in This study was 50.2% which is similar to that reported by sparrow et al⁸ who found the overall rate of any form of retinopathy was 52% in a study of non-insulin treated diabetes patients from the English town of Melton Mowbray and nearly similar to that reported by the Newcastle study⁹ which found that in patients diagnosed with type 2 diabetic, almost 55% had signs of retinopathy after 10 years. Also Santos et al¹⁰ studied the prevalence of DR in type 2 diabetic patients and found DR in 51.5% patients with DM of duration of more than 10 years. In addition Bamashmus et al¹¹ studied the prevalence of DR in Yemeni diabetic and was found to be 55%. While Wang et al¹² reported a higher prevalence of DR in patients with known type 2 DM and was found to be 65.2%. The prevalence of DR in this study is higher than that reported by Cachill et al¹³ who reported the prevalence to be 14%, the prevalence seen in WESDR (40%)¹⁴ that reported by

Benlens et al (40%)¹⁵, that reported by Nalthan et al (26%)¹⁶ and Segato et al (26.2%)¹⁷. Also in the UK, 9% of patients with type 2 diabetes developed microvascular disease within 9 years of DM diagnosis¹⁸. Farhan et al found the prevalence of DR in type 2 DM to be 12%¹⁹. A meta-analysis of DR prevalence from 8 population – based studies of whites, blacks and Hispanics among people aged more than 40 years with DM in the United states demonstrated an overall prevalence of DR of 40%.²⁰ The difference in the prevalence between this study and others may be related to the duration of DM as it was decided in this study to be 10 years or more as shown in some studies that had found nearly the same prevalence rate with longer duration DM of more than 10 years.

This study demonstrated that glycemic control with insulin therapy effectively delayed the onset and progression of DR in type 2 diabetic patients and there was a significantly lower prevalence of DR in those using insulin therapy as compared to those using OHA (31.3% V 70 %)(p □ 0.0005). This is similar to that found by Cahill et al¹³ who reported the prevalence Of DR in type 2 DM to be 14% in patients using insulin and 51% in patients using OHA and Ohkubo et al²¹ who concluded that intensive glycemic control by multiple insulin injection therapy can delay the onset and progression of DR, nephropathy and neuropathy in Japanese patients with non-insulin dependent DM. Also, the Diabetes Control and Complications Trial demonstrated that the risk of developing diabetic retinopathy was reduced by 76% if strict glycemic control was maintained⁹. In addition, the UK Perspective Diabetes Study found that, in patients with type 2 diabetes, strict glycemic control using either sulphonylureas or insulin reduced the risk of microvascular complications and the need for retinal photocoagulation as compared to those receiving conventional treatment²² While Agrawal et al²³ could not find any significant relationship between modalities of treatment i.e. insulin versus non-insulin, and vascular complications of type 2 diabetes.

In this study, mild-moderate NPDR was 10.7%, severe NPDR was 4.3% and PDR was 35.7%. This results did not agree with the previous reports. Romero –Avoca et al²⁴ found the prevalence of mild to moderate DR, severe DR and PDR was 18.9%, 14.7% and 4% respectively. Also, wang et al¹² found the prevalence of minimal DR, mild – moderate DR and severe DR was 23.5, 28.8% and 12.9 % respectively. While Wisconsin Epidemiology Study of Diabetic Retinopathy (WESDR) conducted by Klein et al² showed the prevalence of NPDR to be 36% and PDR to be 3%. This difference may be attributed to lack of knowledge of diabetes,

inadequate health care facilities and poor access to health care services in Yemen.

Regarding gender, this study found no significant difference between men and women (52.8% v 47.2%) ($p=0.37$). This was similar to that found by Wang et al¹² who reported that overall prevalence of DR was not significantly different between men (44.4%) and women (45.19%) with type 2 DM.

CONCLUSION

Tight glycemic control remains the corner stone in the prevention and delay of progression of diabetic retinopathy. This study highlights that insulin therapy of type 2 diabetes mellitus is significantly more effective in prevention and delay the progression of diabetic retinopathy than oral hypoglycemic agent do, emphasizing the importance of instituting tight glycemic control of diabetes with insulin which is effective in limiting visual loss. This study has important public health implications. A high prevalence of DR indicates the need to establish a National Education Program in Yemen to promote regular community and clinic-based screening for the early detection of diabetes and to promote routine retinal screening of diabetic individuals to detect DR and prevent visual impairment.

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Muhammad Adnan

Comparison of Efficacy of Lidocaine 2% Gel with Lidocaine 2% Injection in Chalazion Surgery

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ABSTRACT

Background: Chalazion is a type of meibomian cyst. Lidocaine 2% local anesthetic injection is used for incision and curettage of chalazion. Lidocaine gel 2% is also being used now a days in chalazion surgery.

Aim: To compare the efficacy of lidocaine 2% gel with lidocaine 2% injection in chalazion surgery evaluated in terms of mean pain score

Methods: The study was cross sectional study and conducted in Department of ophthalmology Pakistan Institute of Medical Sciences Islamabad. The study duration was 8 months (November 2012 to July 2013). Sample size of 120 patients was achieved. A simple random sampling method was used for selection of patients. Patients were randomly allocated into two groups using lottery method. Ethical approval was taken from ethical review board of PIMS. . Data was collected through pre tested structured questionnaire.

Results: Out of all 120 patients 60 patients were treated with lidocaine 2% gel and 60 patients were treated with lidocaine 2% injection. Out of all 120 patients there were 40 (66.7%) males and 20 (33.3%) females in lidocaine 2% gel group while in lidocaine 2% injection group there were 35 (58.3%) male and 25(41.7%) females. The mean pain in 2% lidocaine gel is 3.68 with 0.725 SD ($p=0.017$) while in 2% lidocaine injection group is 4.05 with 0.928 SD ($p=0.017$), so mean pain found to be higher in lidocaine 2% injection(95% CI).

Conclusion: We conclude that 2% lidocaine gel is very effective in chalazion surgery especially in lowering the pain due to anesthetic administration.

INTRODUCTION

Chalazion is a type of meibomian cyst. Basically it is a chronic lipogranulomatous inflammatory lesion that is mainly caused by blockage of gland orifices and sebaceous secretions. This leads to induced astigmatism resulting in blurred vision.¹ Evidence exist that more than 50% of chalazion may be treated and cured within 1 month time period. The rest of chalazion need surgical interventions. Different physician recommend the use of intralesional steroids for its treatment but this method is only effective in small, multiple and marginal type chalazion while in larger lesions incision and curettage procedure is recommended.²

Lidocaine 2% local anesthetic injection is used for incision and curettage of chalazion. Similar studies reported the complications associated with injection when it penetrates through eyeball. These complications are hematoma formation, bleeding from site and ocular damage. Pain and burning discomfort is also associated with local anesthetic solutions.³ Evidence

exist that lidocaine gel 2% is also being used now a days in chalazion surgery. It was found to be more safe, effective and convenient than injection. The gel is found to be safer than needle related complications.⁴

Chalazion is very common in adults but they also occur in children.⁵ Local anesthetic injection is found to be a painful procedure in children and if child did not cooperate leads to needle related globe injury. In those cases physicians prefer lidocaine gel 2% as a convenient method to use in children with chalazion.⁶ This study aims to compare the efficacy of lidocaine 2% gel with lidocaine 2% injection in chalazion surgery evaluated in terms of mean pain score.

2% lidocaine gel is very effective anesthetic in lowering the pain in Chalazion surgery. This method is particularly useful in patients who have distressing fears of injection especially in children, mentally retarded patients with poor cooperation which makes the patient apprehensive and vulnerable to needle related injuries.

MATERIAL AND METHODS

The study was cross sectional study and conducted in Department of Ophthalmology Pakistan Institute of Medical Sciences Islamabad. The study duration was 8 months (November 2012 to July 2013). A sample size of

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Table 1: Demographic characteristics

characteristics	interventions	No	Mean score	SD	P-value
Age	Injection	60	33.68	9.507	0.878
	Gel	60	32.63	8.714	
sex	Injection	60	35(M),25(F)		0.522
	Gel	60	40(M), 20(F)		
Fear of injection	Injection	60	43.9	28.9	0.666
	Gel	60	47.7	36.1	

120 patients was achieved with 5% significance level, 95% confidence interval, with SD 40.8 and anticipated population. Patient with both genders and age above than 12 years were *included* in study. Patients under the age of 12 years, with systematic diseases, with previous history of lid trauma or any lid surgery and mentally retarded were *excluded*. A simple random sampling method was used for selection of patients. A list of patients who have under gone chalazion surgery with lidocaine 2% injection and 2% lidocaine gel was taken from eye departments of PIMS Islamabad. Patients were randomly allocated into two groups using lottery method. Ethical approval was taken from ethical review board of PIMS and consent form was taken from each participants. Data was collected through pre tested structured questionnaire. Reliability of the questionnaire was assessed after a pretest exercise of 10 questionnaires. A pain scale was used to evaluate the intensity of pain in which 0 represents no pain and 10 represents severe pain.

Statistical analysis: Data was analyzed using SPSS software version 18.0. Descriptive statistics (percentages, mean, SD) was used to describe the data. Results were reported in percentages, tables and charts for different variables according to nature of variable. Independent T test was performed to compare the two groups, mean differences and confidence intervals were calculated.

RESULTS

Out of all 120 patients 60 patients were treated with lidocaine 2% gel and 60 patients were treated with lidocaine 2% injection.

Socio demographic characteristics: Out of all 120 patients there were 40(66.7%) males and 20 (33.3%) females in lidocaine 2% gel group while in lidocaine 2% injection group there were 35(58.3%) male and 25(41.7%) females. Age is taken as continuous variable but converted into categorical variable at the time of analysis.

The mean age of patient in injection group was found to be 33.68 with 9.507 SD. While the mean age in gel group was found to be 32.63 with 8.714 SD. The study reported fear of injection among patients of

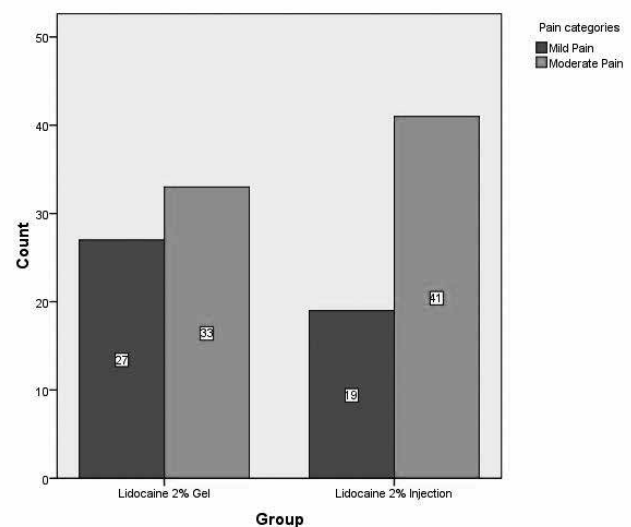
injection group means score 43.9 with 28.9 SD and in gel group mean scores 47.7 with 36.1 SD.

Table 2: Descriptive Results for age in both groups

Group	Age (years)	No	%(percentage)
Lidocaine 2% Gel	Up to 20	8	13.3
	21 – 30	12	20.0
	31 – 40	30	50.0
	41 – 50	10	16.7
	Total	60	100.0
Lidocaine 2% Injection	Up to 20	9	15.0
	21 – 30	13	21.7
	31 – 40	22	36.7
	41 – 50	16	26.7
	Total	60	100.0

The age in each group is divided into three categories up to 20, 21-30, 31 to 40, 41 to 50. The percentage in gel group was 13.3%, 20.0%, 50.0%, 16.7% respectively. While in injection group the percentage of age group was 15.0%, 21.7%, 36.7 %, 26.7% respectively.

The study found out that intensity of pain in terms

**Graph 1:** distribution of pain in 2%lidocane injection and 2% lidocaine gel group

of moderate pain was found to be higher in lidocaine 2% injection and found to be lower in lidocaine 2% gel group.

The mean pain in 2% lidocaine gel is 3.68 with 0.725 SD ($p=0.017$) while in 2% lidocaine injection group is 4.05 with 0.928 SD ($p=0.017$), so mean pain found to be higher in lidocaine 2% injection.

Table 3: comparison of pain in 2% lidocaine gel and 2% lidocaine injection

Group	N	Mean	SD	P-value
Lidocaine 2% gel	60	3.68	0.725	0.017
Lidocaine 2% injection	60	4.05	0.928	

DISCUSSION

The overall study results have shown that the intensity of pain was found to be higher in lidocaine 2% injection as compared to lidocaine 2% gel. Overall, the injection group experienced greater pain for the whole procedure. The injection group also reported more pain on administration of anesthesia. However, the two groups were comparable in terms of pain experienced during incision and curettage procedure.

Evidence exist that there is statistically significant difference in mean pain scores of gel and injection group $p<0.001$ and also statistically significant difference in mean pain of two groups at the time of anesthesia administration ($P=0.000$).⁽⁷⁾ The present study reported fear of injection among patients of injection group means score 43.9 with 28.9 SD and in gel group mean scores 47.7 with 36.1 SD. While similar studies reported that there is no significant difference in mean scores of fear of injection with $p=0.668$.⁷

The present study found out that intensity of pain in terms of moderate pain was found to be higher in

lidocaine 2% injection and found to be lower in lidocaine 2% gel group during incision and curettage. While similar studies reported that there is no significant difference in intensity of pain during incision and curettage.⁸

Limitation of study: The study design was a limitation as this study would be more appropriate in setting of RCT. Loss of follow up was also found to be an important limitation. Surgeon's variation was also included in limitation.

CONCLUSION

We conclude that 2% lidocaine gel is very effective in chalazion surgery especially in lowering the pain due to anesthetic administration. This method of anesthesia would be particularly useful in patients who have distressing fears of injection, in children, mentally retarded patients with poor cooperation renders the patient vulnerable to needle related injuries.

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ایسی نماز سے گذرا ایسے امام سے گذر
اقبال



Zahir Gul

Incidence of Dry Eyes after Phacoemulsification

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ABSTRACT

Background: Dry eye is a condition of abnormal tear film associated with number of different condition that alter its stability of tears. Dry eye is a reason affecting the quality of life among older people in different countries of world. Incidence of dry eye is going to increase after cataract extraction.

Aim: To determine the incidence of post operative dry eye syndrome in patients who undergo routine uncomplicated cataract surgery

Methods: It was a cross sectional study and conducted in Department of ophthalmology Pakistan Institute of Medical Sciences Islamabad. The study duration was 6 months. A sample size of 60 eyes were enrolled. After taking the list of patients who have undergone phacoemulsification from PIMS ophthalmology department, patients were randomly selected using number computer generated table.

Results: Dry eye was present in 10.0% (n=6) of patients as per our operational definition on post operative day¹. The percentage was declining with time and it was 6.7% (n=4) on week 1 and was 3.3% (n=2) on week 6 respectively. An independent-samples t-test was conducted to compare the dry eye for males and females. There was no significant difference in dry eyes for males (M = 34.02, SD = 4.91) and females (M = 33.17, SD = 5.71; t (60) = 1.62, p = .11, twotailed). The magnitude of the differences in the means (mean difference = .85, 95% CI: -1.80 to 1.87) was very small (eta squared = .006)

Conclusion: Dry eyes are associated to induce among patients after phacoemulsification but this induction is going to decrease with time period. The incidence of dry eyes was 3.3% after 6 weeks of follow up.

INTRODUCTION

Dry eye is a condition of abnormal tear film associated with number of different condition that alter its stability and affect the tears. Dry eye is a reason of affecting quality of life among older people in different countries of world. Activities of daily life, mood swings, work productivity and confidence can be affected by moderate and severe dry eye¹ According to estimates 7-10 million people of US need artificial tear preparations. The prevalence of dry eye is found to be diverse ranging from 14.4-33% in questionnaire based surveys² Studies based on tear production test including schirmers' test, tear break up time, rose Bengal and fluorescence staining found lower prevalence among population.³

There are many factors associated with dry eyes that include aging, gender, diabetic mellitus, hypertension, contact lens usage and connective tissue diseases.⁴ Symptoms of dry eye include dryness, itching, burning sensation, foreign body sensation, redness, ocular pain, fatigue and heaviness of eye lids⁵. There are various surgical interventions that cause dry

eyes and enhance dry eye condition including PRK, cataract surgery and LASIK.⁶

Evidence exist that after phacoemulsification deterioration of tear physiology and corneal sensitivity is found among different patients.⁷ Incidence of dry eye is increased after cataract extraction. It was proved that there is significant correlation between exposure to microscopic light and test for dry eyes but there was no association found among test values for dry eyes and phacoemulsification energy.⁸

The study was conducted to determine the incidence of post operative dry eye syndrome in patients who undergo routine uncomplicated cataract surgery.

The incidence of dry eyes after phacoemulsification is 3.3% after 6 weeks of follow up. Ophthalmologists should evaluate patients both before and after phacoemulsification to prevent damage to the ocular surface so that the patient will not have a poor quality of life and visual deterioration due to dry eye syndrome.

METHOD AND MATERIAL

The study was cross sectional study and conducted in Department of Ophthalmology Pakistan Institute of Medical Sciences Islamabad. The study duration was 6 months (August 2014-February 2015). A sample size of 60 eyes was achieved using WHO formula for

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estimating a population proportion with specified absolute precision with 95% confidence interval, 5% anticipated population and absolute precision 5.5%, all patients who have undergone phacoemulsification Incidence of dry eyes after phacoemulsification 2016⁴ both genders and age greater than 18 years were included. The patients with history of preoperative dry eye, age less than 18 years, coexistent ocular disease, history of trauma, previous history of intra ocular surgery and co-morbidity such as diabetes mellitus were excluded. After taking the list of patients who have undergone phacoemulsification from PIMS ophthalmology department patient were randomly selected using random number computer generated table. Parameters assessed include Tear film break up time (TBUT) using fluorescein strips, and Schirmers' test performed without an anesthetic. Ethical approval was taken from ethical review board of PIMS and consent form was taken from participants. The study include 2 follow ups, 1st follow up was after one week of surgery and 2nd follow up was after six weeks of cataract surgery. Data was collected through pre tested questionnaire. Reliability of questionnaire was assessed after a pretest exercise of 10 questionnaires.

Statistical analysis: Data was analyzed using SPSS software version 18.0. Descriptive statistics (percentages, mean, SD) was used to describe the data. Results were reported in percentages, tables and charts for different variables according to nature of variable. Independent T test was performed to compare the patients before and after TBUT, mean differences and confidence intervals were calculated.

RESULTS

A sample size of 60 eyes was recruited in this study. Out of all patients 30% (n=18) of patients were males with the mean age of 58.8 years \pm 5.7 SD and 70% (n=42) of patients were females with mean age of 59.9 years \pm 4.1 SD. Incidence of dry eyes after phacoemulsification 2016.

Table 1: demographic characteristics of patients

	Number (percentage)	Mean Age \pm SD (years)
Male	18 (30%)	58.8 \pm 5.7
Females	42 (70%)	59.9 \pm 4.1
Total	60 (100%)	59.6 \pm 4.6

Dry eye was present in 10.0% (n=6) of patients as per our operational definition on post operative day 1. The percentage was declining with time and

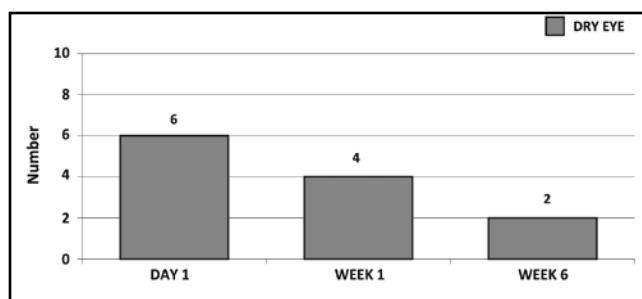


Figure 1: Frequency of Dry Eye

it was 6.7% (n=4) on week 1 and was 3.3% (n=2) on week 6 respectively. An independent-samples t-test was conducted to compare the dry eye for males and females. There was no significant difference in dry eyes for males (M = 34.02, SD = 4.91) and females (M = 33.17, SD = 5.71; t (60) = 1.62, p = .11, twotailed). The magnitude of the differences in the means (mean difference = .85, 95% CI: -1.80 to 1.87) was very small (eta squared = .006).

DISCUSSION

The present study found out that Dry eye was present in 10.0% (n=6) of patients as per our operational definition on post operative day 1. The percentage was declining with time and it was 6.7% (n=4) on week 1 and was 3.3% (n=2) on week 6 respectively. Similar studies reported that after phacoemulsification changes in tear film status and symptoms of dry eyes were enhanced.⁹ Evidence exist that reduction in corneal sensitivity and tear production is affected after phacoemulsification with in 1 month time period⁽¹⁰⁾. The present study found out mean TBUT 11.59 \pm 3.19 SD and mean schirmer test.¹⁰ 42 \pm 8.50 SD. Similar studies reported that >60% of patients have abnormal TBUT, 50% of eye have corneal staining and 21.3% of eyes showed reduction in values of schirmer test after cataract surgery.¹¹ Similar study conducted in Indonesia reported prevalence of dry eye 27.5%.²

The present study found reduction in intensity of dry eye after 6 week follow up as compared to initial follow ups. While similar studies reported that there is decrease in scores of schirmer test and TBUT after phacoemulsification at various time intervals within 2 months.⁷ After phacoemulsification the values of TMH had improved within 3 months follow up.⁸

Limitation of study: The study had a limitation of short time period for follow up and variation in results of TBUT and schirmer test values.

CONCLUSION

Dry eyes are associated with phacoemulsification is going to decrease with time period. The incidence of dry eyes was 3.3% after 6 weeks of follow up. It is

recommend that ophthalmologists should evaluate patients both before and after phacoemulsification to prevent damage to the ocular surface so that they will be able to manage the patient promptly and effectively. In that case the patient will not have a poor quality of life and vision deterioration due to dry eye syndrome.

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مصلحت چھین گئی قوتِ گفتار مگر
کچھ نہ کہنا ہی میرا، میری صدا ہو بیٹھا!



Aisha Aimen Buzdar

Impact of Corrected & Uncorrected Refractive Errors on Vision Related Quality of Life amongst the People of Taunsa Sharif

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Mehmood Hussain FCPS³ Zahid Hussain PhD (Path) M.Sc (hon) Micro.DVM.APVO⁴

ABSTRACT

Objective: This study was conducted to determine the proportion of corrected and uncorrected refractive errors and to see the impact of corrected and uncorrected refractive errors on vision related quality of life.

Material & Method. The data were collected from Tehsil Headquarter Hospital, Taunsa Sharif, District Dera Ghazi Khan. Visual acuity of each patient was measured. The data was collected from 330 patients from the Tehsil Headquarter Hospital, Taunsa Sharif, District Dera Ghazi Khsn.

Result. Out of 330 patients 24.2% were male and 75.8% were female. Among the 330 patients 268 (18.8%) had corrected and 62 (81.2%) had uncorrected refractive errors. Data showed as visual acuity reduced, difficulties in seeing the ratio of patients were increased.

Conclusion. The data also showed that there is a reduced quality of life in people having uncorrected refractive errors in their visions.

Key Words: Corrected refractive error, uncorrected refractive error, visual acuity, quality of life.

INTRODUCTION

A refractive error such as myopia, hyperopia and astigmatism affects the worldwide population on a large scale irrespective of gender, age and ethnic group. If these refractive errors remain uncorrected or inadequately corrected, these can become a significant cause of low vision and even blindness. This low vision due to refractive errors can cause immediate as well as long term consequences in both children and adults, and causes negative impacts on educational and employment opportunities. It can also affect the economic position of individual that eventually affecting their families and ultimately impairing quality of life. There are many factors in which refractive errors remain uncorrected, such as: lack of awareness about refractive errors and lack of recognition of these errors at interpersonal level as well as society level. Other important causes include refractive services, not being available or inability to afford these refractive services, less than enough supply of affordable corrective lenses, cultural disincentives and restrictions upon compliance (Resnikoff *et al.*, 2008). More than 670 million people

in the world with improper correction do not use spectacles. Out of these 670 million people, 570 million have impaired near vision and 153 million have impaired distance vision (Resnikoff *et al.*, 2008; Holden *et al.*, 2008). Up to 2004, world health organization estimated that above 161 million people worldwide suffered from impaired vision. Out of these 161 million people, 124 million were having low vision and another 37 million were recognized as blind (Resnikoff *et al.*, 2004). Uncorrected refractive errors were not included in these figures. Both children and adults bearing short

There is a reduced quality of life in people having uncorrected refractive errors in their visions. Health policy makers should take positive steps in rural areas to develop eye health centers in far off areas so that people have access to resolve their eye health issues.

as well as long term effect due to uncorrected refractive errors. The figure would have been 314 million people if uncorrected refractive errors would have been included. Uncorrected refractive error was ranked as the second major cause of adult blindness, while cataract stood first (Resnikoff *et al.*, 2008). A blindness, which is caused by uncorrected or inadequately corrected refractive errors often starts at relatively young age and lead to more ocular debilitie when compared with cataract which usually starts revealing itself in old age. Refractive errors lead to blindness, which reduces education level,

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development of personality and career opportunities (Gilbert *et al.*, 2003).

Globally 153 million people above five years of age are visually impaired due to uncorrected refractive errors, out of which 8 million are blind (Resnikoff *et al.*, 2008). In Pakistani adults aged above 30 years, the prevalence of myopia has been reported to be 23.8%, in Bangladesh it is 36.5% and 48.1% of young adults in Indonesia over the age of 21 years (Shah *et al.*, 2008; Bourne *et al.*, 2004). Taunsa Sharif is a Tehsil of District Dera Ghazi Khan and is located on Karachi-Peshawar highway known as Indus highway. According to 2006 estimates, Taunsa sharif has a population of 100,000 peoples. Most of the adult population in Taunsa Sharif are illiterate, that is why they do not bother about their health issues especially eye problems and they do not turn up to hospitals for the remedy of their eye problems. There may be other factors as well, which restrict them to visit hospitals for their treatment. They even do not know that how they are undergoing severe health or eye problems especially refractive errors.

MATERIALS AND METHODS

This study was planned to evaluate health issues in handicapped peoples that are believed to influence their quality of life, and to know the impact of corrected and uncorrected refractive error on vision related quality of life. The objectives of the study were, to determine the proportion of corrected and uncorrected refractive errors and to see the impact of correcting the uncorrected refractive errors on vision related quality of life.

Data were collected from the three hundred and thirty individuals visiting to THQ Hospital Taunsa Sharif eye department. Individuals were screened out and people having a cataract, corneal opacity was *excluded*. Visual acuity was measured at the Snellen's Visual acuity chart. Corrected refractive error was defined as visual acuity ranging between 6/6 to 6/9. Uncorrected refractive error was defined having visual acuity 6/12 to 6/60. Individuals were subjected to self-prepared questionnaire. The questionnaire was, according to standard questionnaire. Internationally used, National Eye Institute Visual Function Questionnaire (NEI-VFQ-25) was designed with modifications according to people living in rural or remote areas. This questionnaire contained general vision, day to day activities, social engagements mental activities, job difficulties, dependency, driving and close work. Corrected visual acuity was divided into 6/6 and 6/9 steps. Uncorrected was further classified into 6/12, 6/18, 6/24, 6/36 and 6/60 steps. Chi square analysis was done after compilation of the questionnaire as

if frequency of one row or column is less than 5, chi square do not work well.

RESULTS

In this study the impact of corrected and uncorrected refractive error on vision related quality of life among people visiting THQ Hospital, Taunsa Sharif was studied.

Three hundred and thirty participants were included in this study. Out of 330 peoples, 80 were male (24.2%) and 250 (75.8%) were female. Out of 330 patients, 268 were having uncorrected refractive errors and 62 peoples had corrected vision or corrected refractive error (Table 1).

Table 1: Percentages of corrected and uncorrected errors

Values	Percentages
Male	24.2%
Female	75.8%
Corrected refractive error	18.8%
Uncorrected refractive error	81.2%

The percentages of corrected and uncorrected refractive errors in male and females were 18.8% and 81.2% respectively.

Table 2: Chi square analysis of vision related quality of life.

Questionnaire	p values
General Vision	.000
Near Activities	.014
Distance activities	.000
Driving	.030
Social functioning	.000
Mental functioning	.018
Dependency	.067

Table No. 2 is showing chi square analysis on vision related quality of life questionnaire. Chi square analysis was done on patients having corrected refractive errors but it was not computed there as corrected vision is a constant. Question included the satisfaction level of patients with their present vision. In general vision category people who told that their vision is perfect were 52 and those who think that it was fair were 10, having corrected refractive error or visual acuity 6/6-6/9. Chi square analysis could not be done on it as corrected vision is a constant value.

DISCUSSION

Those people who had no issue regarding their vision were assumed that their visual acuity is good and their vision related quality of life is also good. In same general vision category, those individuals who had uncorrected refractive errors, only 21 people said

that their vision is perfect. 143 reported it as fair and 104 told poor. In the literature, little work of such type is available. The results are in line with McClure *et al.*, (2000). They reported that under corrected with eyeglasses can be regarded as uncorrected refractive error patients as they are not corrected fully as p value was less than 0.05 same as in our results. In our modified questionnaire near activities and distance activities showed no problem in people having corrected refractive errors while uncorrected refractive error people show problem in distance in near activities and $p < 0.05$ same as in study of McClure *et al.* (2000). in which $p < 0.05$ for these values in people who are under corrected. Results were highly significant. Social functioning question included using television or computer. Problem was enhanced in people having uncorrected refractive errors and having p value < 0.05 same as in study of McClure *et al.*, (2000), giving again significant results. Mental functioning included continuous work even during hectic days. $p < 0.05$ same as in McClure *et al.*, (2000) study, in which it was measured at under corrected refractive error people. Dependency included crossing a road with traffic in dim light or in evening. $p > 0.05$ which was not relevant to previous study by McClure *et al.*, (2000). There was no such effect on vision related quality of life in people having corrected refractive errors. These people may either using glasses or came to the hospital for a checkup. Their quality of life was not disturbed to a significant level. All of above results indicated high correlation between uncorrected refractive errors and vision related quality of life. In uncorrected refractive error quality of the life decreased which remain either same or improved in corrected refractive error. It was observed that people who had uncorrected refractive errors face problems in daily routine activities and they have no idea about it. They are not aware of it that they cannot see properly. Their distance, near and social activities are disturbed as their refractive error is not corrected and they cannot see well. This study was particularly conducted in rural area to develop awareness about eye health problems in them so that when they find out certain health issues they may visit hospital were included in the study. The Snellen visual acuity chart was used to measure visual acuity of patients. Grades of vision related quality of life included three options; no difficult at all, moderate difficult and extreme difficult. $P < 0.05$ which means results are highly significant. Likewise, other questions about their daily routine tasks were asked shown in the tables. The results concluded that grades of quality of life were reduced as visual acuity of patients was decreased.

From the above discussion, it was concluded that

corrected refractive errors which included visual acuity of 6/6-6/9 had good vision related quality of life as compared to uncorrected refractive errors in which vision related quality of life was reduced to very poor in some patients. Uncorrected refractive errors included visual acuities 6/12, 6/18, 6/24, 6/36 and 6/60.

CONCLUSION

The data also showed that there is a reduced quality of life in people having uncorrected refractive errors in their visions.

Recommendations: It is recommended that health policy makers should take positive interest in rural areas to develop eye health centers in far off areas so that people have access to resolve their eye health issues. Optometrists, Refractionists, ophthalmic technicians and ophthalmic nurses should be hired in rural areas so that they could work not only to resolve issues of rural people but also deliver knowledge to them so that they have know how about their health issues and they may take eye problems and advise them to visit hospitals to get proper visual correction and other health problems

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Ismat Chaudhry

World Burden of Blindness & Visual Impairment

*WHO's Global Initiative VISION 2020 "the Right to Sight"

Ismatullah Chaudhry., MBBS, DOMS, FICO, MS (CEH), MBA

ABSTRACT

When someone becomes blind in the developing world, 90% of these individuals can no longer work, life expectancy drops down to 1/3 of their age and health. 50% of the blind report a loss of social standing to the authority while 80% of all women note a loss of authority within their families. By 2010, 285 million people were estimated to be visually impaired worldwide, out of them 39 million will be blind whereas 246 million will be visually impaired.

INTRODUCTION

An estimated 120 million are visually impaired because of uncorrected refractive errors (both far and near sightedness). They are among the simplest to be corrected with glasses, contact lenses or photo-refractive surgery/Lasik. About 90% of the world's blind or visually impaired live in developing countries. Shockingly, 80% of blindness and visual impairment is avoidable i.e., 4 out of 5 people could either be prevented or treated if given access to preventive care, education, curative services and quality rehabilitation which is not yet universally available.

In fact, 82% of those blind and 65% of those with moderate to severe visual impairment are older than 50 years of age, comprising about 20 % of the world's population; This number is expected to increase with the world's population with aging. The leading cause of blindness for these people is cataract which is a curable condition. Unfortunately, 28% of people living with moderate to severe visual impairment are in their working years and visual limitations impact the ability of working people to conduct a productive life followed by their inability to find employment and to support their families.

Retinal diseases like glaucoma, diabetic retinopathy and age related macular degeneration

are the main causes of visual impairment in upper, middle and high-income countries. There is a need to target the exposure to risk factors like smoke, genetic pre-disposition, systemic diseases and needs regular eye examinations. An early diagnosis of the disease and early treatment can avoid or delay the onset of diminished visual functions. Sadly, 19 million children are visually impaired and out of these, 12 million children are visually impaired due to un-corrected refractive errors, 1.4 million children are irreversibly blind and need visual rehabilitation, interventions for a full psychological and personal development. Major causes of blindness in children include cataract, glaucoma, retinopathy of prematurity (ROP), and vitamin A deficiency. More than half of all childhood blindness can be avoided if diagnosed and treated well in time

Preserving or restoring vision can be accomplished at a little cost and can help lift people out of poverty. They can contribute fully to their families, communities and national development. It is therefore, needs to be a priority for health professionals and the ministries. If the Governments with the help of social and philanthropic organizations working together under VISION 2020 can make a major difference to the lives of millions of people already visually disabled and at risk.

Common Causes of Blindness and Visual Impairment.

- * Cataract
- * Corneal Blindness (Trachoma/Corneal injuries/ Vit-A deficiency)
- * Uncorrected Refractive Errors
- * Childhood Blindness
- * Onchocerciasis
- * Glaucoma
- * Diabetic Retinopathy

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**Launched in 1999 to help eliminate the avoidable blindness and visual impairment by the Year 2020 by 25% from the baseline of 2010.*

Trachoma : Trachoma is a potentially a blinding infectious eye disease spread by direct or indirect contact with infected individuals. Children with active disease are the reservoir of infection. After repeated episodes of infection in childhood, blindness pursues to adulthood as a result of scarred conjunctivitis, the eyelids are turned inwards and misdirected eyelashes (trichiasis) scratch the cornea resulting in decreased or total loss of vision because of corneal opacity. Facial cleanliness in children, improving personal hygiene and environmental sanitation can reduce the incidence of disease transmission.

Low vision is currently defined as visual acuity of less than 6/18 (20/60) down to and including 3/60 (10/200) in the better eye from all causes.

Childhood Blindness : Around 40% of childhood blindness can either be prevented or treated with simple interventions such as vitamin supplements, immunization and low-cost eye surgery. A new born baby may develop red eyes a couple of days or weeks after birth. If the baby has red eyes and discharge this condition is very serious because the infection can quickly destroy the delicate tissues of eyes and even may spread systemically.

Glaucoma : Glaucoma can be regarded as a group of diseases that have, as a common end-point, a characteristic optic neuropathy, which is determined by both structural changes and functional deficit. The number of persons estimated to be blind as a result of primary glaucoma is > 4.5 million, about 12% of all global blindness. Unfortunately, about 60.5 million people were having glaucoma by the year 2010 (44.7 million with open-angle glaucoma & 15.7 million with angle-closure glaucoma). With the increasing age in the world's population, this number may increase to almost 80 million by the year 2020.

Barriers to accessing basic eye health care by the visually impaired exist in most developing countries, resulting in significant gaps around the world in outcomes related to eye health. The blindness and severe visual impairment can limit people's ability to perform everyday tasks and affect their quality of life and ability to interact with the surrounding world.

Most diseases and conditions causing visual impairment and blindness can be prevented or readily treated with well-known and cost-effective interventions. Good eye care allows people with visual impairment to achieve their full human potential, improved quality of life, self-reliant in their livelihood, and be active and productive members of the society.

Year 2016 is the fourth year of **WHO's Global Action Plan** for 2014–2019 on universal access to eye

health, WHO encourages the member states and partner organizations to continue with our rolling theme "**Universal Eye Health**". This year, the '**Call to Action**' for **World Sight Day** is "**Stronger Together**". It highlights collaborative and well-coordinated efforts made by them, all together, are crucial to achieve the targets of the WHO Global Action Plan 2014-19 of reducing the burden of avoidable blindness and visual impairment at least by 25% of that of 2010 by the year 2019.

International Key Messages:

- Approximately 285 million people worldwide live with low vision and blindness
- Of these, 39 million people are blind and 246 million have moderate or severe visual impairment
- 90% of blind people live in low-income countries
- Yet 80% of visual impairment is avoidable which means either that is preventable or treatable (4 out of 5 people have avoidable visual impairment)
- Restorations of sight, and blindness prevention strategies are among the most cost-effective interventions in health care
- The number of people, blind from infectious causes has greatly reduced in the past 20 years
- An estimated 19 million children are visually impaired
- About 65 % of all people who are visually impaired and 82% of those who are blind are aged 50 and older, while this age group comprises only 20% of the world's population
- Increasing elderly populations in many countries mean that more people will be at risk of age-related visual impairment.

Universal Access to Eye Health?

- Ensuring the provision of equitable promotive, preventive, curative and rehabilitative eye health services are available and all people have access to needed services without suffering financial hardship when paying for these services.
- To ensure and inclusion of persons with disabilities across the health system framework. The principles of equality and non-discrimination must be central to progress universal access to health, strengthening health systems and providing a package of services based on national need, eradication of user fees for the poorest, and prioritizing access to health for vulnerable groups including persons with disabilities
- The point of care-payment should not prevent access: it should be available free for the poorest that all people should enjoy access to the best quality health care without risk of impoverishment

and it is the key to the implementation of WHO's Global Action Plan 2014-19.

Summary: Somewhere in the world, someone goes blind every five seconds, and a child goes blind every minute. Visual disability has far-reaching implications touching on all aspects of human development – social, economic and quality of life. **World Sight Day (WSD)**, which falls on 13th October is an annual international

event, dedicated to pledge perfect vision for every individual on earth. **"The Right to Sight"** is to raise the public awareness of avoidable blindness and vision impairment as an important public health issues in order to sensitize, influence and encourage the policy makers in the member states to develop, implement and fund national programs for prevention of blindness.

Congratulations to KPK Doctors on their promotions at Khyber Teaching Hospital, Peshawar

- * Prof. Irshad Ahmed & Prof. Fazl-e-Rahim as Professors of Paediatrics
Prof. Muhammad Ayaz Khan as Professor of Orthopaedics.
- * Shahida Tasneem as Professor of Histo-pathology.
- * Dr. Saleem Iqbal as Associate Prof. of Medicine
- * Dr. Inayat Ullah as Associate Prof. of ENT.,
- * **10 Consultants in Accident & Emergency Department.** They are:
 - * Dr. Muhammad Khan & Dr. Muhammad Ibrahims as consultants in General Surgery.
 - * Dr. Muhammad Bilal & Dr. Waqas Ullah as Consultants in Medicine.
 - * Dr. Umar Hayat & Dr. Waqas Hassan as Consultants in Orthopadics.
 - * Dr. Zia ur Rehman & Dr. Imad Ali Shah as Consultants in Paediatrics.
 - * Dr. Mehnaz Akhtar & Dr. Khyber Bibi as Consultants in Gynaecology.

The management and the Editorial Board of Ophthalmology Update congratulate all of them on their coveted appointments in various specialties and wish them a happy and prosperous professional life.

بزرگی بہ عقل است نہ بہ سال
تو نگری بہ دل است نہ بہ مال



Shaukat Ali

Study of Malarial Incidence in Children in THQ Hospital, Katlang

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ABSTRACT:

Objective: To look for malaria parasite and its specie in children coming to children OPD who were clinically suspected to be suffering from malaria.

Back ground: Malaria is one of the most killer disease in the world. It kills over a Million each year. Majority of these deaths are in children.

Study Design: Descriptive.

Material and Method: This is a hospital based study conducted at THQ Hospital Katlang Mardan from January 2010 to December 2012. Data regarding age, sex, malarial parasites and their species was collected. Data was analyzed and results were presented as frequency tables, and charts.

Results: Patients were clinically suspected to be suffering from malaria and they were picked up from OPD randomly, they were advised routine tests and blood smears for malaria parasite and its specie. Malarial parasites were seen in n=180 (20%) cases. Plasmodium vivax was seen in majority cases n=164 (91.1%) cases. Plasmodium Falciparum was seen in n=14(7.7%) cases. Two cases n=2(1.1%) were mixed infections. There was no case of plasmodium malariae or ovale. All the patient were treated as outpatients and all improved on treatment

Conclusion: Nine hundreds patients n=900 were clinically suspected to be suffering from malaria. Out of n=900 cases n=180 (20%) cases were malarial parasite positive. Plasmodium vivax was the predominant specie in this study.

Key Words: Malaria, vivax.

INTRODUCTION

Malaria has played a major role in human history causing harm to more people than perhaps any other infectious disease. Malaria is of overwhelming importance in developing world today, with estimated 300 to 500 million cases and more than I million deaths each year. Most deaths occur in infants and children.

Plasmodium vivax is the predominant specie in Pakistan, Bangladesh, India, Sri Lanka and central America. Plasmodium falciparum is predominant in Africa, Haiti, Newguinea, plasmodium ovale is the least common and is transmitted mainly in Africa¹Ratio of Vivax: Falciparum is 60:40 for the whole country. The incidence of falciparum increases as one goes towards south, in some areas the ratio of Vivax-Falciparum is 20:80. The positivity rate is 2.5% for all Pakistan but in some villages up to 60% especially after floods. Falciparum has 30% resistance to fansidar and halfan, has also been reported.²

In Afghanistan falciparum and vivax are both the commonest type (85%) of all cases.³The integrated management of child illness (IMNCI) promoted by the world health organization (WHO) and UNICEF is a strategy for identification and management of child

hood illness from 1 week to 5 years at primary care level. It will greatly improve child health⁴. The new born under 1 month are protected from malaria by maternal immunity.⁵ The WHO in collaboration with World Bank and UNICEF launched roll back malaria strategy with millennium development goals in 2000.

Plasmodium vivax is the predominant specie in this part of the country. All vivax patients improved on oral chloroquine, indicating that chloroquine is effective in treating plasmodium vivax infection.

The aim was to control malaria cases up to 50% by year 2010 in Pakistan.⁶ Early diagnosis and treatment is major role back malaria (RBM) strategy to control malaria. For diagnosis microscopy is the standard procedure.⁷ Malaria is a curable disease provided the treating physician can suspect and diagnose it early.⁸ The WHO recommends that if a child in a malarial area has fever but it is not possible to confirm it with blood smear treat the child as for malaria.⁹ keeping the above facts in mind the present study was conducted. Objective of the study was to identify malaria parasite and its specie in children clinically suspected of having malaria coming to children OPD at THQ Hospital Katlang.

MATERIALS AND METHODS:

This was hospital based study conducted at

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THQ Hospital Katlang, Distt Mardan. This hospital is a 40 bedded hospital, having four specialists posts, each of children, medical, gynecologist, and surgical specialists. This hospital receives patients from Swat and Bunair to Shankar near Mardan.

Patient from one month to 16 years of age who have fever and or other signs suggestive of malarial fever, vomiting loose motion, convulsions cough were *included* in the study. Patients who had other disease like enteric fever, UTI, GE, Pneumonia, meningitis and encephalitis were *excluded* from study. Routine laboratory tests like haemoglobin, complete blood count, blood sugar level were checked in all cases. Identification of malaria parasite and its specie were done. Peripheral smear was stained with Giemsa stain at the laboratory of DHQ Hospital, Katlang and in few cases at a better laboratories. Patient were treated were reared with chloroquine 10mg/kg stat, 5 mg/kg after 6 hour and then OD for 2 days. Falciparum and mixed cases were put on ACT (as advised by WHO) Patient were also given supportive treatment in form of cold sponging, fluids, and antipyretics where needed.

Data regarding age, sex, were analyzed and the results expressed in tables, charts and graphs. Permission from EDO (Health) Mardan was also taken.

RESULTS

Nine hundreds children were included in the study with majority of patients (60) were between 2-10 years. Mean age was 8 years. More male children were affected than female children. Malaria parasite were seen in 180 (20%) of suspected malaria patients. Out of these 180 cases 164 (91.%) were vivax and 14(7.7%) were falciparum. (Fig 1) Two cases (1.1%) were mixed cases.

Thus plasmodium vivax was the predominant specie. The falciparum cases were more towards the south of country. In this study among the positive

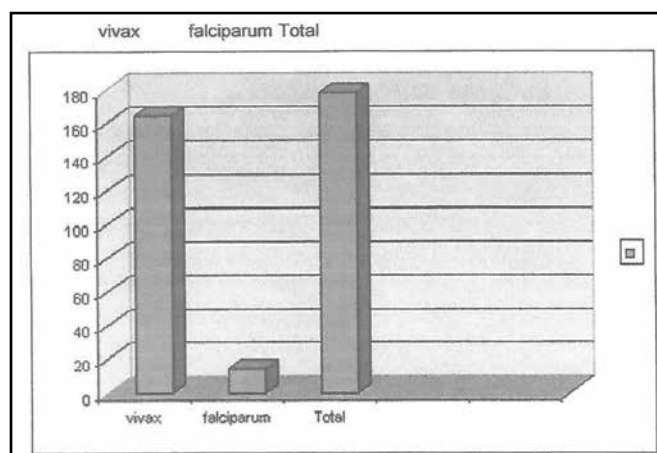


Figure 1

cases, there was male predominance 101 (54.1%). While female were 79 (43.8%) fig 2). Male to female ration was 1.2: (fig). All patients were given oral chloroquine in a dose of 10 mg/kg. All patients improved and no complication or death was reported

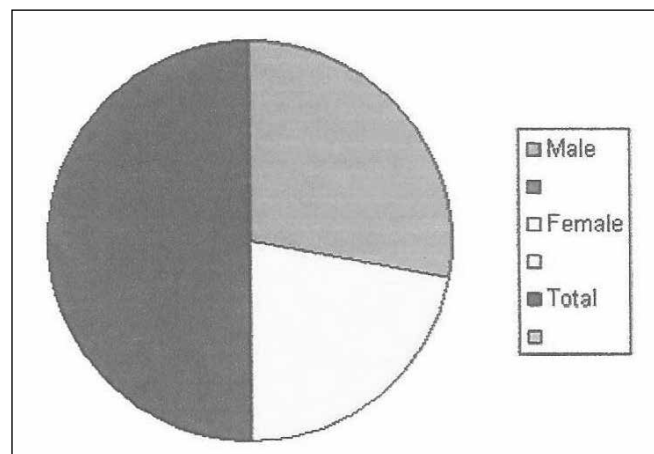


Figure 2

DISCUSSION

Pakistan is one of the moderately endemic countries for malaria. There is variation in prevalence from area to area. It affects all age groups even neonates. Finding malaria parasite in a blood smear is the gold standard for diagnosis of malaria. Determination of specie of malaria is also important as resistance to chloroquine and other drugs have been reported¹⁰. In our study out of 180 positive cases majority (70%) were 3 to 4 years. Similar pattern was seen in the study of Junejo et al.¹¹ and Aijaz et al.¹²

Majority (60 years) of patients were between 2 to 10 years this could be due to high mobility and more exposure to mosquitoes at this age period. There was male predominance in our study, male were 101 (56.1) and female were 79(43.1). Male predominance was also reported by Hozhabris et al.¹³ Idresm, Sarwar J and Fareed j¹⁴. This could be because of the fact that male babies are given preference over female children and are brought to hospital for treatment. In this study plasmodium vivax was the predominant specie 164(91.1%) in comparison to falciparum 14(7.7%)

This is opposite to studies from tw Western part of the country where Junejo et al¹¹ reported. Plasmodium falciparum predominance (58.9) and vivax (41.09%) Yasin Zai and kakarsulenam Khel¹⁶ also reported falciparum predominance (71.7%) and vivax (28.2%). Similarly Akbar¹⁷ in his study has reported falciparum predominance (65%) and vivax (35%). The vivax predominance in our study is in keeping with Shaukat Raza² who stated the Ratio of vivax to falciparum is

60:40 for the whole country. The falciparum increases as one goes towards the south of the country. In our study as well as other studies done locally have not reported any case of plasmodium malariae or ovale for example the studies done by Murtaza et al.¹⁸ and Nizamani et al.¹⁹ They did not report any case of plasmodium ovale or malarae.

CONCLUSION

Nine hundreds cases were suspected of malaria in the study, and 180(20%) were confirmed and found having malaria parasite with predominance of vivax 164(91.1%) indicating that plasmodium vivax was the predominant specie in this part of the country. All vivax patients improved on oral chloroquine indicating that chloroquine is effective in plasmodium vivax infection.

Recommendation: Plasmodium vivax is the predominant specie of malaria in this part of the county. Patients should be put prophylactically on oral chloroquine and can be treated as outpatients. indicating that chloroquine is effective in plasmodium vivax infection.

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ہری ہے شاخِ تمنا ابھی جلی تو نہیں
جگر کی آگ دہی ہے مگر بھیجی تو نہیں
جفا کی تیغ سے گردن و منشاہدوں کی
کئی ہے برسرِ میدان مگر جھگی تو نہیں
عطا الحق قاسمی



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Cesarean Delivery, the Associated Fetal & Maternal Outcomes at Liaquat Memorial Hospital, Kohat (A study of one decade)

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ABSTRACT

Objectives. Since the rates of cesarean sections have steadily increased worldwide over the past 3 decades¹⁻³ This escalating caesarean section rate is a major public health problem because it increases the health risk for mothers and babies as well as the cost of health care provision compared with normal deliveries. This study determines the frequency, indications and outcomes of cesarean sections as well as the change over ten years.

Patients and Methods. This retrospective descriptive study was conducted at the Department of Gynecology & Obstetrics Liaquat Memorial Hospital Kohat KPK. All cesarean sections performed from 01/01/2005 to 31/12/2014 at this hospital were reviewed. Mean and standard deviation were reported for normally distributed continuous variables. Demographic factors were reported as percentages. The Pearson chi-squared test (X²), Odds ratios (OR) and confidence intervals (CI) were calculated to report precision of categorical data results. A *p*-value of <0.05 was considered significant, SPSS version 17 was used for analysis.

Results: The frequency of cesarean section was 12.46% (n=11428/91663) with a quartile range of 12.019%–12.832%. Mean age of the patients was 27.47±9.65 years with mean parity of **4.2±4.038**. Primigravida were (n= 4036/11428=35.3%). Booked patients were (31%) while (84%) of the surgeries were emergency cases. Obstructed labor was the most common indication (n= 3723/11428=32.57%) followed by previous caesarean section (n= 2010/11428=17.58%). Post partum hemorrhage was the commonest complication (22.16%). No significant change was seen in the cesarean section rate (x²=0.35, OR=0.974, 95% CI=0.893-1.062, *p*=0.566) and case fatality rate (x²=0.15, OR=1.29, 95% CI=0.346-4.834, *P*=0.699) over the last ten years. Obstructed labor was significantly reduced (*p*<0.001) while previous c/section/s was significantly increased in 2014 as compared to 2005 (*p*<0.001). Puerperal infections, still birth rate and low Apgar score reduced significantly (*p*<0.001) over 10 years.

Conclusion: Rate of caesarean section was 12.46% with no significant change over the last decade. Majority of the cesareans were done in emergency situations. Obstructed labor was the most frequent indication and postpartum hemorrhage was the commonest complication. Early detection of risk cases and proper referral in time may reduce the cesarean related morbidity and mortality.

Key Words: Cesarean Delivery Rate, Obstructed Labour, Maternal Mortality, Low Apgar Score

INTRODUCTION

The rates of cesarean sections have steadily increased worldwide over the past 3 decades.¹⁻³ About twenty million cesarean sections (CS) are performed worldwide each year.⁴ This rise of cesarean rates has been seen mainly in developed and emerging countries⁵. In Central America it is 31% and in North America it is 24%.⁴ The rate in Europe is around 25% of all deliveries.^{6,7} while in the USA the rate is estimated at 32.2%.⁸ In sub-Saharan regions the cesarean rate is only 3%⁹. while in Asia, according to WHO global survey

China recorded the highest number of C-sections (46%) followed by Vietnam and Thailand with 36% and 34%, respectively. The lowest rates were in Cambodia, with 15% and India with 18%.¹⁰ Contrary to this, in Pakistan the rate of cesarean deliveries is very diverse ranging from as low as 12 %¹¹, to as high as 45.1%¹² and 56%¹³. World Health Organization has recommended 15%¹⁴ rate for cesarean births as lower than this in developing countries contributes to significant preventable

Majority of the cesareans were done in emergency situations. Obstructed labor is the most frequent indication while postpartum hemorrhage is the commonest complication. Early detection of risk cases and proper referral in time may reduce the cesarean related morbidity and mortality. The trial of labor under close monitoring in carefully selected patient is now increasingly being advocated

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maternal and perinatal morbidity and mortality¹⁵, yet in developed countries, rising caesarean section rates have not been accompanied by improved perinatal outcomes¹⁶. Anyway, less than 5% of C-Section in any population indicates the low antenatal and maternal care.^{17,18}

This escalating caesarean section rate is a major public health problem because caesarean section increases the health risk for mothers and babies as well as the cost of health care compared with normal deliveries¹⁹. While this increase has been attributed to the fear of litigation, more liberal use of caesarean section for breech presentation, the detection of fetal distress by continuous electronic fetal monitoring, abdominal delivery of growth-retarded infant, and improved safety of caesarean section in developed countries, the reasons are less clear in developing countries.²⁰ Last year FIGO recommended that Caesarean delivery should be undertaken only when indicated to enhance the well-being of mothers and babies and improve outcomes(FIGO 2014).²¹

In view of the global increase in the rate of cesarean deliveries (CD), with the associated higher morbidity and mortality, this study was undertaken to review CD rates and some of their determinants over a ten-year period in LIAQAT MEMORIAL HOSPITAL KOHAT. The primary aim of this study was to find out the frequency of CD and its determinants and outcomes from the available data in our hospital. Secondary objective was to find out the change in trend of cesarean, major indications and common and important fetomaternal outcomes.

PATIENTS AND METHODS

This retrospective descriptive study was conducted at the Department of Gynecology & Obstetrics Liaquat Memorial Hospital(LMH) Kohat. All caesarean sections performed between 01/01/2005 to 31/12/2014 at Liaquat Memorial Hospital Kohat were reviewed. Information was obtained from operation theater records, labor room records, neonatal ward records, yearly statistic book and retrieved from patients' case notes. Data were collected on the age, parity, booking status, indications for cesareans, type of caesarean section (emergency or elective) and fetomaternal outcome. The information obtained was transferred onto a proforma already designed and (duly approved by hospital's research and ethics committee) for the study. Patients who accessed antenatal care at the hospital (LMH) or from any of the hospital consultants at their private clinics were classified as booked while those who had not accessed antenatal care services at the hospital or at the clinics were regarded as unbooked

Descriptive statistics for continuous variables and frequency tables for categorical variables were used to assess the distribution of the explanatory variables. Mean and standard deviation are reported for normally distributed continuous variables whereas quartile range is reported for abnormally distributed continuous variables e.g. cesarean section frequency. Demographic factors were reported as percentages. The Pearson chi-squared test is used to determine whether there is a significant difference between the rate, major indications and important outcome with the odds ratios and confidence intervals were calculated to report precision of categorical data results. A *p*-value of ≤ 0.05 was considered significant. SPSS window version 17 was used for analysis.

RESULTS

Out of the 91663 deliveries during the study period of ten years, 11428 cases were operated for caesarean section, giving a rate of 12.46% with a quartile range of 12.019%--12.832%

Table 1 shows the patients' ages, parity, socioeconomic condition, booking status, and the nature of cesarean sections performed on them. The patients' ages ranged from 15 to 46 years, with a mean age of 27.47 ± 9.65 SD years. The model age group was 20–30 years 4027/11428 (35.2%) patients. The parity ranged from 0 to 15, with a mean of 4.2 ± 4.038 . Majority, 4036/11428 (35.3%), were primigravida (para 0). A total of 3541/11428 (31%) patients were booked for antenatal care, and 9595 (84%) of the surgeries were emergency cases. A 9333 (81.667%) patients were belonging to poor class.

Table1: Main characteristics of 11428 cases of cesarean delivery performed at LMH

characteristics	Frequency	percentage
Age group in years		
<20		
20-30	3446	30.2
31-40	4027	35.2
>40	2239	19.6
Total	1716	15.0
	11428	100.0
Socio-economics		
Poor	9333	81.667
Lower middle	1653	14.4
Satisfactory	442	3.9
Total	11428	100
Parity		
PG(P0)	4036	35.3
1-4	2981	26.1
5-10	2999	26.2
>10	1412	12.4
Total	11428	100

characteristics	Frequency	percentage
Nature Of C/Section		
Emergency		
Elective	9595	84.0
Total	1833	16.0
	11428	100.0
Booking Status		
un-booked	7887	69.0
booked	3541	31.0
Total	11428	100.0

Table.2 Shows total modes of all the deliveries along with CDR (cesarean delivery rate) of ten years. Total deliveries in this ten years were 91663. Out of the total, 11428 were delivered through c/section giving an average rate of 12.46%. During this period total 42/11428 maternal deaths occurred in cases of cesarean deliveries with case fatality rate of 0.365%

Table 3. Shows yearly indications for cesarean delivery. Obstructed labor was the commonest

Table 2: Yearly distribution of deliveries along with c/section percentage and cesarean mortality

YEAR	All types of deliveries	Normal Vaginal Deliveries	All Types Of Vaginal Breech Deliveries	Instrumental Deliveries	Ruptured Uterus	Total C/ Sections	% OF C/ section	Total Deaths In Cases Of Cesareans
2005	9084	7500	68	312	60	1144	12.59	5(0.437%)
2006	9172	7692	83	223	65	1109	12.09	3(0.270%)
2007	9505	7879	90	250	40	1246	13.108	4(0.321)
2008	8816	7345	87	301	45	1038	11.774	5(0.481%)
2009	9114	7525	91	320	51	1127	12.365	4(0.354%)
2010	9639	7971	75	401	54	1138	11.806	4(0.351%)
2011	9177	7500	79	361	61	1176	12.814	4(0.341%)
2012	9080	7429	81	373	67	1130	12.444	5(0.442%)
2013	8886	7241	79	374	56	1136	12.784	4(0.352%)
2014	9190	7487	86	399	34	1184	12.8883	4(0.337%)
total	91663	75569	819	3314	533	11428	12.466	42(0.367%)

Table 3: Yearly distribution of indications for C/sections

Year	Obstructed Labors	Previous C/Section/S	Ante partum Hemorrhage	Cephalopelvic Disproportion	Breech Presentation	Maternal Diseases (Hypertension, Eclampsia And Diabetes)	Failed Induction+ Failure To Progress	Fetal Distress	Others*	Total
2005	473	101	112	100	91	65	67	30	105	1144
2006	401	115	100	111	76	67	66	33	140	1109
2007	500	189	111	90	81	66	65	34	110	1246
2008	333	175	89	95	75	55	64	41	111	1038
2009	413	185	107	86	86	75	55	39	81	1127
2010	401	195	99	93	87	64	75	34	90	1138
2011	323	255	113	101	98	77	67	37	105	1176
2012	330	250	98	91	94	63	68	31	105	1130
2013	300	274	98	97	87	68	77	32	103	1136
2014	249	271	114	125	105	67	63	27	163	1184
Total	3723	2010	1041	989	880	667	667	338	1113	11428

* = cord prolapse, multiple pregnancy BOH, previous perineal/vvf repair, on request, malpresentations other than breech and neglected transverse lie.

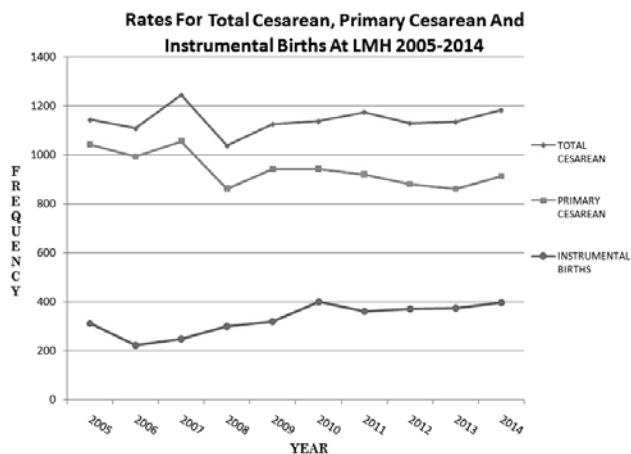


Figure 1: Trend of total cesarean, primary cesarean and instrumental deliveries in the study period.

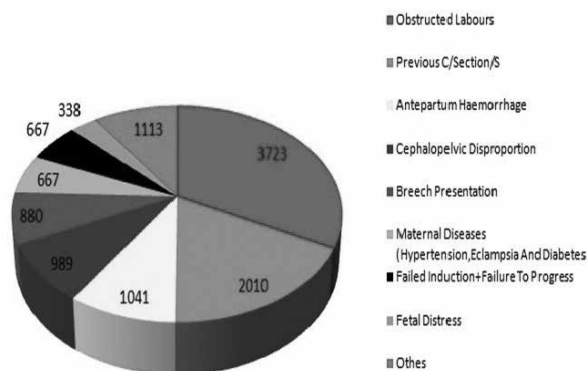
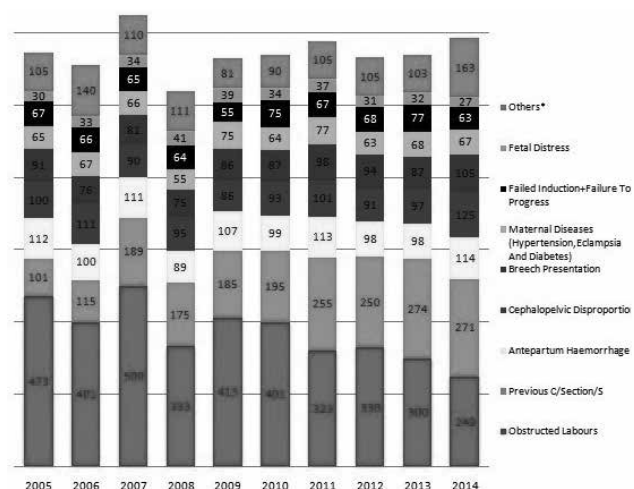


Figure 2: Overall indications for the Cesarean Deliveries in 11428 Cases Delivered at LMH Kohat over a 10-Year Period (2005-2014)

indication, 3723/11428(32.57%) followed by previous caesarean/s 2010/11428(17.58%) and ante partum hemorrhage 1041/11428(9.109%). Total maternal indications were (88.46%) while fetal were (11.54%).

A total of 11969 babies were delivered through cesarean section, consisting of singletons 10940, twins 436 sets, 51 set of triplets; while one case of quadruplets operated in this period. A total of 6401/11969 (53.479%) of the babies were males while rest of the babies were female (46.52%). A total of 3256/11969(27.203%) had 5-minute Apgar scores of <7 while 858/11969(7.168%) were still born, respectively. The total live and healthy births following cesarean deliveries were 7705/11969(64.37%). One hundred and fifty (1.25%) babies were congenitally abnormal.

Table 4 shows maternal outcome. A total of 2533/11428 (22.16%) had PPH. puerperal infections was found in 995(8.7%) patients Anesthesia complications occurred in 82 cases (0.717%). Injuries to the neighboring structures and DVT were (0.253%) and (0.157%) respectively



*=cord prolapse,multiple pregnancy,BOH,previous perineal/vvf repair,on request,malpresenta than breech and neglected transverse lie.

Figure 3: Yearly Distribution of Indications for C/Sections

Table-4 Maternal out come

Outcome	N	%
Satisfactory	7771	67.999
PPH**	2533	22.16
Puerperal Infection	995	8.7
Anesthesia Complication	82	0.717
Maternal Mortality	42	0.367
Injury To The Neighboring	29	0.253
Structure/S		
DVT***	18	0.157

** post partum hemorrhage, *** deep vein thrombosis

Forty two (0.367%) maternal case fatalities occurred. Majority 34/42(80.95%) died of PPH. Other causes were anaesthesia complications 2/42 (4.76%), hypertensive disorders6/42 (14.28%) and overwhelming infection1/42 (2.38%). Some of the fatalities had multiple causes in a few patients, the cause of death was uncertain1/42 (2.38%).

Table 6 shows the changes in the cesarean rate, major indications and important feo-maternal outcome. No significant change is seen in the frequency of cesarean section between 2005 and 2014($p= 0.566$).While, obstructed labor was significantly reduced in 2014 as compared to 2005($p< 0.001$) and previous c/section/s became more frequent indication in 2014 as compared to 2005($p<0.001$). Puerperal infections were found significantly reduced in recent year as compared to 10 years back($p<0.001$) while no change was seen in case fatality rate ($p=0.699$).Both still birth rate as well as low Apgar score(5 minutes A/S <7) were reduced between 2005 and 2014,($p<0.001$)and ($p<0.001$) respectively.

Table 5: Changes In The Rate, Main Indications And Outcome Of Cesarean Sections In The Study Period

Variable	Year										AVERAGE	Differences Between 2005 AND 2014	Pearson's Chi-Square	OR,95%CI	P value
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014					
Cesarean section rate	12.59%	12.09%	13.108%	11.774%	12.365%	11.806%	12.814	12.444%	12.784%	12.8883%	12.466%	1144/9084, 1184/9190	0.35	0.974, 0.893–1.062	= 0.566
C/Sections done for Obstructed labour	473	401	500	333	413	401	323	330	300	249	451.5/year	473/1144 , 249/1184	112.4	2.64, 2.205–3.177	< 0.001
C/Sections done for previous cesarean/cesareans	101	115	189	175	185	195	255	250	274	271	201/year	101/1144 , 271/1184	85.67	0.327, 0.255–0.416	< 0.001
Deaths in cases of c/sections	5	3	4	5	4	4	4	5	4	4	4.2 deaths per Year	5/1144 , 4/1184	0.15	1.29, 0.346–4.834	= 0.699
Peurperal infections including Sepsis	145	155	99	88	67	55	99	87	101	99	99.5 Cases per Year	145/1144, 99/1184	11.54	1.59, 1.214–2.08	< 0.001
Still births	112	99	78	88	89	101	72	75	73	71	85.8 Per Year	112/1195* , 71/1237*	11.53	1.69, 1.24–2.31	< 0.001
Low apgar score	213	212	313	400	201	321	199	197	180	160	239.6	213/1195*, 160/1237*	11.9	1.46, 1.168–1.823	< 0.001

*In 2005 total births=1098 singletons +41 twins and Striplets= (1195), in 2014 total births=1159 singletons +38 twins +6 triplets +1 quadruplet== (1237)

CI =confidence interval

OR=odds ratio

DISCUSSION

The results of this analysis from available data show that over the period of ten years from 2005 to 2014 the CD rate went from 12.59% to 12.888.1% only, with no significant increase. Although data on private hospitals were not available, it is reasonable to assume that the rate of CD in the private sector would have mirrored the rate in the public sector. The caesarean section rate of 12.46% (average) in this study was lower than the 18% reported from Jos, northern Nigeria²², 23.1% reported from Sagamu southern Nigeria²⁰ and 24.1% reported from other parts of Pakistan¹⁹. Though our caesarean section rate was within the 15% recommended by the World Health Organization (WHO) for developing countries¹⁴.

The lower rate of caesarean section in this study has multiple reasons such as the use of instrumental vaginal delivery in appropriate cases, refusal of cesarean delivery only for fetal indications and dilution effect of the patient population, as majority of them was at low risk because our department accepts all categories of patients both self-referred low risk and high-risk patient referred from other centers. LMH, being a teaching hospital since 9-10 years, yet has deficient facilities as compared to heavy load; most of the patients of the area are operated in private sector. Cultural trend for grand multiparity is still very high²². People refuse c/section for fetal indication when vaginal delivery is otherwise possible. As being the only public sector hospital in the region it's a referral centre for its large catchment area as well. This study

shows a large number of ruptured uterus cases referred from far flung periphery. These were the patients who needed c/section, if managed properly and referred in time. In our knowledge this is the first analysis of c/sections births in this institution hence no comparison with the previous study is available.

While comparing our frequency nationwide, literature shows that a net rise of 15% was seen in Lady Reading Hospital, Peshawar²⁴ over 10yrs period from 1996 to 2006. Rates reported from Sir Ganga Ram Hospital²⁵ and the Agha Khan University, Karachi¹¹ were 21.07% in 2001 and 31.5% in 2003-4 respectively. The last reported CS rates from few main teaching hospitals of Pakistan in 2006-7 are 35-41%^{12,26} which are far greater than our C/S rate in 2014. A recent analysis of global, regional and national estimates of births by CD revealed the following means and ranges: for the world as a whole 15% (0.4-40.5%), Africa 3.5% (0.4-15.4%), Western Asia 11.7% (1.5-23.3%), Europe 19.0% (6.2-36.0%), Latin America and the Caribbean 29.2% (1.7-39.1%), North America 24.3% (22.5-24.4%) and Oceania 14.9% (4.7-21.9%)⁴.

In this study, 35.2% of the caesarean sections were performed in patients within the age range 20-30 years while 35.3% were primigravidae similar to another study in a developing country²⁷. Contrary to this, Nigeria²⁰ reported CD rate of 25% in primigravidae. This is unacceptably high because of the implications of caesarean section on the future reproductive carrier of these groups of patients, especially in this region, where large family size is desired. Similar to studies from

other parts of developing world,^{20,22} a majority of the caesarean sections in this study (84%) were performed as an emergency and 69% patients were un-booked.

Maternal indications constituted 88.46% of the caesarean section in this review, similar to other reserchers^{24,25,28,29} The most common of which was obstructed labor. This shocking figure is certainly an underestimation of the problem, because deaths due to obstructed labor are often classified under other complications such as sepsis, postpartum hemorrhage or ruptured uterus. As a consequence of obstructed labor PPH was the commonest(22.6%) complication as well as commonest (80.95%)cause of maternal death in this study.Similar findings have been reported by others.^{30,31} This serious complication of labor can be prevented provided labor is managed actively with proper use of partogram in labor.

A previous caesarean section was the second most common maternal indication (17.58%), same has been reported by others (16%)³¹,though it is higher than the 12% reported by Oladapo OT from Nigeria²⁰. Previously caesarean section was said to constitute the highest single indication for repeat section because obstetricians still regard vaginal birth after previous caesarean section as a high-risk option. Trial of labor under close monitoring in carefully selected patient is now increasingly being advocated and it is reported that 64.8-86.0% of patients with a caesarean section who were allowed for trial of labor delivered without any complication.³³

Interesting findings of the study is that within the last 10 years, frequency of obstructed labor has decreased significantly while previous section/s as an indication has significantly increased. The reason for this change may be that majority of patients who underwent C/section in the early years of this decade were young and of low parity and the main indication for their cesareans was obstructed labor, so in subsequent pregnancies, neither the patients, nor the obstetrician opted for prolonged trial of labor. Early C/section was chosen as appropriate mode of delivery. With the decreasing frequency of obstructed labor, the rate of still births also significantly reduced in 2014 as compare to 2005.

In this study, still born were 7.16% while low Apgar score babies were 27.20%.The higher frequency of low Apgar Score neonates show that the processes of labor and delivery in our setting need improvement. Good referral system, active management of labor, and essential obstetrics care will be of immense help in improving the processes of labor and delivery with a resultant reduction in birth asphyxia.

In South Asia, Pakistan is one of the countries where maternal mortality ratios (MMR) and neonatal mortality rates remain stagnant. The Pakistan Demographic and Health Survey (PDHS) 2012-13 reports a perinatal mortality rate of 75 per 1000 pregnancies and neonatal mortality rate of 55 per 1,000 live births²⁹. The neonatal mortality rate was not substantially different between PDHS 1990-91 and PDHS 2012-13. Over the same period there was a 19% reduction in infant mortality and 24% reduction in under-5 mortality in Pakistan²⁹. While progress towards the health-related Millennium Development Goals has been limited in Pakistan overall, the inability to provide safe delivery and postpartum care are the most glaringly inadequate.

Though antibiotic prophylaxis at cesarean section is routine practice in our hospital, puerperal infection were found in (8.7%) cases. This result suggests that women are still at heightened risk of severe sepsis, despite the administration of antibiotics. It emphasize the importance of attention to prophylaxis particularly in emergency deliveries. In our study mortality is 42(0.365%), half from the study of Ugawa (0.7%)³⁴much lesser than seen in another study(6.1%) from developing country³³. Comparing with the rate of 2005, maternal mortality remained the same in 2014.

Limitations: In this retrospective study, every effort was made to retrieve the data regarding mothers and the babies completely, however, the perinatal mortality could not be calculated. Because we had record of only still born and low Apgar score babies. Nursery of the hospital has the record of the home addresses of the newborns and not their birth record. Some other factors that have been found to be associated with poor maternal and newborn outcomes are not included in this paper. For example, the registries of anemia. In Pakistan routine measurement of hemoglobin is rare especially in un-booked cases, thus comparable information regarding anemia was not available for analysis

CONCLUSION

Rate of caesarean section was 12.46% with no significant change over the last decade. Majority of the cesareans were done in emergency situations. Obstructed labor was the most frequent indication and postpartum hemorrhage was the commonest complication. Early detection of risk cases and proper referral in time may reduce the cesarean related morbidity and mortality.

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From: OPHTHALMOLOGY UPDATE



Shaukat Ali

Atypical Clinical Presentation of Acute Lymphoblastic Leukemia (ALL) in THQ Hospital, Katlang

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ABSTRACT:

Objective of study: During my experience in clinical paediatrics, I have noticed a number of patients coming to hospital with atypical symptoms and signs which later turned out to be cases of ALL. Therefore I felt that a study of atypical clinical presentation of ALL would be of great help in the early diagnosis and referral of patients to Teaching Hospital for management.

Background. Acute leukemia is the most common form of malignancy in childhood. It has an annual incidence of 42 per million white children and 24 per million black. It is more common in boys than in girls. In Pakistan unplanned industrialization is taking place and large numbers of leukemia patients are now reported to various hospitals.

Study Design: Descriptive.

Material and Method: This study was conducted in paediatric department of type THQ Hospital Katlang over a period of 3 years from June 2006 to June 2009. The diagnosis was suspected clinically and supported by peripheral smear and confirmed by bone marrow aspiration. Tests were done at a private clinical Laboratory, Peshawar. Cyto-chemical studies (PAS & Peroxidase) were used for the identification of the type of leukemia. During the study period 10 atypical cases of leukemia were diagnosed. These were from both sexes, different age group and mixed socio economic status. After the diagnosis and supportive treatment, cases were referred to teaching Hospitals at Peshawar, both at Lady Reading & Hayatabad Medical Complex.

Results: Patients with atypical signs and symptoms of clinically suspected as cases of leukemia in OPD randomly. They were advised peripheral smear and suspected cases were referred to private clinical laboratory at Peshawar. During the study period ten atypical cases of leukemia were diagnosed in the age group of 1-10 years in children and were referred to tertiary care hospitals in Peshawar for management.

Conclusion: During the study period ten atypical cases were detected. They were more common in 1-5 years age group and in poor socio economic status (70%).

Key Word: Acute leukemia Atypical cases

INTRODUCTION

Leukemia is a malignant proliferation of blood forming tissue quantitative with qualitative changes in the blood.¹ The term acute implies that the leukemic cells are morphologically immature and does not necessarily mean that disease has rapid onset with relentless progression. The leukemia may be divided into acute or chronic condition,² based by severe maturation defect leading to accumulation of immature or blast cells. In contrast, the chronic leukemia is characterized by accumulation of mature cells. Mixed lineage acute leukemia remains a subject of disagreement. It may be divided into two groups. Mixed lineage acute lymphoblastic leukemia³ and a mixed lineage acute myeloid leukemia, based on morphological and cyto-chemical appearances of the

blast cells, Head, and Drowing, 1992.⁶

Besides the common features of leukemia such as pallor, pyrexia, lymph-adenopathy,³ bleeding, tiredness, anorexia, hepato-splenomegaly and bony pains some unusual symptoms may also occur which poses a great difficulty in diagnosis. Such features includes: abdominal pain, dyspnea due to mediastinal nodes involvement, ulceration of the mucosa and skin Exophthalmose usually unilateral due to retro bulbar haemorrhage or leukemic cell infiltration signs and symptoms due to meningeal infiltration, testicular and ovarian infiltration (Imran & Rashid, 1985) and acute flaccid paralysis.

Children with acute leukemia, some time have atypical presentation and one should be alert to diagnose these cases in time.

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Children with leukaemic hyper-leucocytosis may have manifestations of hyper viscosity with disseminated intravascular coagulation, intracranial haemorrhage, pulmonary insufficiency and the tumour lysis syndrome, (Lascari, 991)

MATERIAL AND METHOD

This study was conducted in paediatric department of THQ Hospital Katlang over a period of

3 years from June 2006 to June 2009. The diagnosis was suspected clinically and supported by peripheral smear and confirmed by bone marrow aspiration. Tests were done at a private clinical laboratory in Peshawar. Cytochemical studies (PAS & Peroxidase) were used for the identification of the type of leukemia. During the study period 10 atypical cases of leukemia were diagnosed. These were from both sexes, different age group and mixed socio economic status. After the diagnosis and supportive treatment cases were referred to teaching hospitals at Peshawar (LRH and HMC).

RESULT

The facts were obtained by accurate observation. Ten (10) children both male and female were diagnosed to have acute lymphoblastic leukemia (ALL). Patients with acute myeloid leukemia were divided into three groups. One to five years, 6-10 years and more than 10 years. Six cases were in age group more than 10 years. Seven 7 Cases belonged to lower socioeconomic class, 02 cases to middle class and 01 case to high socioeconomic class.

The geographical distribution showed that 8 cases were from Mardan division and 2 cases from various other parts of KPK. The common symptoms observed were ulceration of mucosa (n=2), abdominal pain, (n=2) dyspnea due to mediastinal nodes (n=1), meningitis (N=1), testicular swelling (n=2) and acute Flaccid paralysis (AFP) (n=1).

The common clinical signs noted were anemia (n=9), splenomegaly (n=6), hepatomegaly (n=6), petechiae (n=4), lymphadenopathy (n=7), bone tenderness (n=5), retinal haemorrhages (n=2), joint swelling (n=2) wide mediastinum on X-ray chest (n=1). The peripheral smear examination showed hemoglobin 2-6 gm/dl (n=3), 7-10 gm/dl (n=3), 10-13 gm/dl (n=4), total leukocyte count was less than 11000/dl in 2 cases, 4000-11000/dl in 3 cases and more than 11000/dl in 5 cases Platelet count was decreased in 9 cases. Blast cells were seen in 10 cases. Bone marrow aspiration showed hypercellularity in 9 cases and normal cellularity in 1 case. Erythropoiesis and myelopoiesis was depressed in all cases (10/10). Megakaryocytes were decreased in 9 cases and adequate in 1 case. Blast cells were more than 30% in all cases. P.A.S staining was positive in 3 cases and peroxidase staining was negative in all cases. F.A.B typing showed L1 in 9 cases, L2 in 1 case and L3 were not found in any case.

Table 1: Sex distribution

Sex	No of cases	Percentage
Male	3/10	60%
Female	4/10	40%

Table 2: Age wise distribution

Age in years	No of cases	Percentage
1-5 years	6/10	60%
6-10 years	3/10	30%
More than 10 years	1/10	10%

Table 3: Common symptoms of all in my study

Symptoms	No of cases	Percentage
Ulceration of mucosa	2/10	20%
Abdominal pain	2/10	20%
Dyspnea	1/10	10%
Exophthalmus	1/10	10%
Meningitis	1/10	10%
Testicular swelling	2/10	20%
Afp	1/10	10%

Table 4: Common clinical signs

Clinical signs	No of cases	Percentage
Anemia	9/10	90%
Splenomegaly	6/10	60%
Hepatomegaly	6/10	60%
Lymphadenopathy	7/10	70%
Bone tenderness	5/10	50%
Retinal Changes	2/10	20%
Joint Sselling	2/10	20%
Wide mediastinum on x-ray chest	1/10	10%

Table 5: Special smear findings.

		No of cases	Percentage
Hb%	2-6gm/dl	5/10	50%
	7-10 gm/dl	3/10	30%
	10-12 gm/dl	2/10	20%
Tcl	<4000/ cu mm	1/10	10%
	400-11000 /cu mm	3/10	30%
	>11000/ cu mm	6/10	60%
Platelets	Decreased	9/10	90%
	Normal	1/10	10%
Blast cells	10	10/10	100%

Table 6: Bone marrow finding.

		No of cases	Percentage
Cellularity	Hyper cellularity	9/10	90%
	Normal	1/10	10%
Erythropoies	Depressed	10/10	100%
Myelopoiesis	Depressed	10/10	100%
Megarkaryocytes	Depressed	9/10	90%
	Normal	1/10	10%
Blast cells	30-90%	10/10	100%
	>90%	0/10	0%
Peroxidase	Negative	10/10	100%
PAS	Positive	8/10	80%
	Negative	2/10	20%
FAB TYPE	L1	9/10	90%
	L2	1/10	10%
	L3	0/10	0%

DISCUSSION

In this study 10 cases of atypical cases of ALL were evaluated. Although the number of cases is small but never the less certain important finding clinical and hematological features have been brought out. According to Abelson *HYT*, 1994¹ leukemia accounts for 34% of all childhood malignancies in white children and 25% in black children. The incidence is still on the rise and about 2000-2500 new cases of childhood leukemia develop in the United States each year.²

One of the main reasons for this increase may be environmental exposure associated with modernization. In our study of all the age distribution showed that 60% occurred in 1-5 years, 30% in 6-10 years and 10% in more than 10 years of age. The peak age of ALL was 1-5 years which was confirming with Jandl 1987, Khan et al, 1955.^{9,10}

The socioeconomic status wise distribution of all has revealed that 70% cases belonged to the lower class this is similar to Neglia and Robinson 1988.¹³ The majority of cases (71.4%) belonged to agricultural families; the higher incidence of leukemia in them might be due to the increasing use of agricultural herbicides, pesticides or zoonotic transmission of some infection agent, which need further studies.

Type of leukemia on F.A.B classification was L1 in L2 in cases Type L3 was not found. This is accordance with Jandl 1987.⁸ Our study suggested that fever anemia, hepat-splenomegaly aches and pains with skin or mucosal bleeding are the common clinical presentation of ALL and a patient with such complaints should be thoroughly investigated the mind should be kept open for the other rather less frequent symptoms such as bone tenderness and joint selling etc. It is very important to diagnose ALL in early stages because of high rates of complete remission and cure when diagnosed at an early stage.

The geographical distribution of ALL has demonstrated that most of the patients belonged to Mardan division and the rest to various parts of the KPK. Among the atypical symptoms recorded in my study, was ulceration of Mucosa, abdominal pain, dyspnea, exophthalmus, meningitis, testicular swelling, AFP. The findings were almost consistent with Wintrobe et al, 1975 (fever 71%); Khan et al, 1995¹¹ (50% at the time of diagnosis) and Bloomfield, 1984.³ Among the different signs found in my patients, anemia was found in 90% cases. Splenomegaly was found in 60% cases. This was consistent with Wintrobe et al, 1974 Crist and Pul 1996 and Bloom field¹.

Lymphadenopathy was recorded in 70% of cases. This was consistent with Hull and Johnston 1987,⁷ Crist

and Pul 1996. Bone tenderness and joint swellings recorded in 20% and 20% cases respectively. This was consistent with Crist and Pui 1996 and Jandl 1987.¹⁴ In one of patients had a wide mediastinum was found on X-ray chest. While Bloomfield, has reported it in 7% cases.

On Ophthalmoscopy fundal changes in the form of retinal hemorrhages were seen in 20% cases. This is similar to Wintrobe et al, 1974. The Hb level of the patients in my study was 2-6 gm % in 50% cases. 7-10 gm 30% cases, 10-12gms in 20% cases. The total leucocyte count (TLC) was <40000/dl in 10% cases, 4000/11000/dl in 30% cases and > 11000/dl in 30% cases, these figures are comparable with those of Crist and Pul 1996 and Jandl 1987. The platelet count was decreased in 90% of my patients and normal in 10% cases.

These figures are consistent with chessells 1983 (15% cases have normal platelets), blasts cells were detected in 100% cases on peripheral smear. It is in accordance with Wintrobe et al, 1974. Bone marrow aspiration of my patients showed hypercellularity in 90% cases and normal cellularity in 10% cases. These figures are comparable with Lanzkowsky 1980. Erythropoiesis and Myelopoiesis were depressed in 100% cases and platelet production was depression in 90% cases. Blast cells were more than 30% in 100% cases. These figures are comparable to Lanzkowsky 1980 and Khan M.A et al 1996.^{11,12} P.A.S staining positivity in my patients was 80% and peroxides staining were negative in 100% cases. This is in accordance with Zafer. 1985¹⁸ and Jandl 1987. Lymph nodes enlargement was on the average 2-3 cm, elastic non tender. The average time period before diagnosis was 6 weeks. The peripheral smear examination showed hemoglobin 2-6gm/dl (n=5), 7-10 gm/dl (n=3). 10-12 gm/dl (n=2) TLC was less than 4000/dl in 1 case, 4000-11000/dl in 3 cases and more than 110000/dl in 6 cases. Platelets count was decreased in 9 cases. Blast cells were seen in all 100% cases.

Bone marrow aspiration showed hypercellularity in 9 cases and normal cellularity in 01 case. Erythropoiesis and myelopoiesis was depresses in all cases. Megakaryocytes were decreased in 9 cases and adequate in 1 case. Blast cells were more than 30% in all cases. P.A.S staining was positive in 8 cases and peroxidase staining was negative in all cases. F.A.B typing showed L1 in 9 cases, L2 in 1 case and L3 was not found in any case;

CONCLUSION

Children with acute leukemia some time have atypical presentation and one should be alert to diagnose these cases in time.

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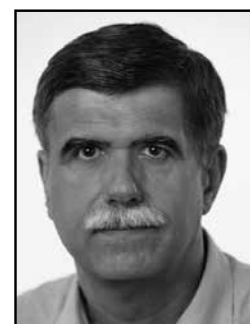
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