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Original Article

Epidemeiological Study of Pterygium in a Public Medical College Hospital

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ABSTRACT

Introduction: *Pterygium is a degenerative, triangular wing shaped, fibro vascular connective tissue of bulbar conjunctiva towards and onto the cornea, leading to significant astigmatism. Pterygium is a common ophthalmic condition of tropical and sub-tropical country like Bangladesh where there is dry sunny hot dusty climate.* ***Purpose****: To find out the epidemiological trends such as age and gender distribution, effect of living conditions and occupation etc. on the occurrence of pterygium.* ***Methods****: This prospective study was carried out from March 2021 to December 2021 at Ophthalmolgy Department, Sher-E-Bangla Medical College & Hospital, Barishal. Total 68 patients with different grades of pterygium were studied and analyzed. All the eyes underwent detailed ocular examination like visual acuity measured by Snellen's chart; refractive astigmatism measured by automated keratometry and slit lamp biomicroscopy.* ***Results****: Pterygium is more common in males (61.76%) than females (38.23%). 45.59% cases were in age group of 31-40 years followed by 33.82% in 41-50 years and rare (2.94%) in more than 60 years;so, 86.76% cases are in the age group of 31-60 years. Pterygium is more common in outdoor works 41(60.29%) to indoor workers 27 (39.71%). Location of pterygium is more on the nasal side 61 (89.70%) than temporal side 07 (10.30%). More common in rural population 42 (65.60%) compared to 22 (34.40%) in urban population. Most of the pterygium were from Grade -II to Grade –IV which is when combined about 92.65%.* ***Conclusion****: Pterygium is more common in middle age group, males, rural people and outdoor workers. Presentation is usually late with Grade II to Grade IV pterygium. UV-B exposure is the major risk factor for pterygium formation.*

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INTRODUCTION

Pterygium is a degenerative, triangular wing shaped, fibro vascular connective tissue of bulbar conjunctiva towards and onto the cornea [1] leading to significant astigmatism [2,3]. Although pterygium has a worldwide distribution, it is more common in dry climates like bangladesh [4]. Recent studies suggests that damage to limbal stem cells and activation of matrix metalloproteinase [5]. Due to UV rays triggers pterygium occurrence. The prevalence of pterygium is highest in people over 40 years of age and the incidence is the highest between the ages of 20-40 [6]. Furthermore, it can be categorized in 4 types depending on the extent of pterygium over the cornea, Grade I: pterygium invading < 1.5 mm of cornea, Grade II: pterygium invading < half the radius of cornea, Grade III: pterygium invading > half the radius of cornea and Grade IV: pterygium almost or reaching the centre of cornea.

Decrease in visual acuity due to pterygium can occur due to following cause:

i. Encroachment of pterygium at papillary area [5]
ii. Astigmatism
iii. Restriction of medial rectus muscle

Pterygium leads to a considerable effect on corneal refractive status, measured by refraction, keratometry and corneal topography [2, 7-9]. Such effects increase with the increase in the grade of pterygia and affects the individual's visual acuity, lifestyle and productivity.

METHODS & MATERIAL

This prospective study was carried out from March 2021 to December 2021 at Ophthalmolgy Department, Sher-E-Bangla Medical College & Hospital, Barishal .68 patients with different grades of pterygium were studied and analyzed.Inclusion criteria: any patient undergoing pterygium excision surgery at Sher-E-Bangla Medical College, Barishal.Exclusion criteria : pre-existing cornea pathology like traumatic or surgical corneal scar or ecstatic corneal disorder, pseudopterygium, recurrent pterygium, patients having some retinal disease affecting vision, pterygium crossing the pupillary margin. Patients with recurrent pterygium, history of ocular trauma, blepharitis, keratitis, dry eye, entropion, ectropion, other ocular surface pathologic features and major systemic illness like DM, collagen vascular disease were excluded from the study. All the eyes underwent detailed ocular examination like visual acuity measured by Snellen's chart; refractive astigmatism measured by automated keratometry and slit lamp biomicroscopy examination. Depending on the extent of pterygium over the cornea, pterygium was divided into Grade I : pterygium invading < 1.5 mm of cornea, Grade II: pterygium invading < half the radius of cornea,Grade III: pterygium invading > half the radius of cornea and Grade IV: pterygium almost or reaching the centre of cornea. The study adhered with the tenets of the Declaration of Helsinki. The local ethics committee approved the study protocol. Informed consent was obtained from each participant before the enrollment.

Statistical analysis was done using SPSS Software.

RESULT

Table I: Age distribution

Age of patient	Number of patients
21-30 years	07 (10.30%)
31-40 years	31 (45.59%)
41-50 years	23 (33.82%)
51-60 years	05 (07.35%)
61-70 years	02 (02.94%)
Total	68 (100%)

Table –I shows that 45.59% cases were in age group of 31-40 years followed by 33.82% in 41-50 years and rare (2.94%) in more than 60 years;so, 86.76% cases are in the age group of 31-60 years indicating that pterygium is more common to middle aged people who are more exposed to external environment.

Table II: Gender distribution of cases.

Gender	No of patients
Male	42 (61.76%)
Female	26 (38.23%)
Total	68

Table -II Shows that pterygium is more common in males (61.76%) than females (38.23%) .

Table III: Occupation wise distribution of pterygium.

Occupation	Number of patients
Indoor worker	27 (39.71%)
Outdoor worker	41 (60.29%)
Total	68 (100%)

Table-III shows that, pterygium is more common in outdoor works 41(60.29%) to indoor workers 27 (39.71%).

Table IV: Pterygium location in the eye.

Pterygium location	Number of patients
Nasal	61 (89.70%)
Temporal	07 (10.30%)

Table- IV shows the location of pterygium is more on the nasal side 61 (89.70%) than temporal side 07 (10.30%).

Table V: Pterygium distribution according to residence.

Patients distribution	Number of patients
Urban	22 (34.40%)
Rural	42 (65.60%)

Table -V shows the area of residence among people with pterygium and pterygim is more common in rural population 42 (65.60%) compared to 22 (34.40%) in urban population.

Table VI: Grading of pterygium.

Grading of Pterygium	No of patients (eyes)
i.pterygium invading < 1.5 mm of cornea	05 (7.35%)
ii.pterygium invading < half the radius of cornea	35 (51.47%)
iii.pterygium invading > half the radius of cornea	21 (30.88%)
iv.pterygium almost or reaching the centre of cornea	07 (10.30%)
Total	68 (100%)

Table – VI displays that 05 patients (7.35%) had Grade –I, 35 patients (51.47%) had Grade – II pterygium. 21 patients (30.88%) had Grade –III pterygium while 07 patients (10.30%) had Grade – IV pterygium. So, it is evident that, most of the pterygium were from Grade -II to Grade –IV which is when combined about 92.65%.

DISCUSSION

Pterygium is a worldwide ocular disease which is particularly more common in tropical and sub-tropical area[10-13].In the present study total 68 eyes of 68 patients including 42male and 26 females were involved, having the majority of male patients. Similar predominance of male subjects was present in previous studies [14].Rural and male preponderance was reported in our study, this is probably because males are exposed more to sun, dust, and wind due to their outdoor works. The results were identical with the earlier study[11].According to our study, pterygium was most common in 3rd to 5th decade of life. Similar results were reported by Panchpakesam[11]. and Gazzard et al[15]. Another study by Youngson also reported that pterygium was more common in middle age group and rare in extreme ages[16]. 89.70% cases of pterygium belonged to nasal side and 10.30% temporal side . Archilla et al [17]. Explained that UV light transmits from temporal side of cornea through the stroma on to the nasal aspect of eye, perhaps that is why these lesions are more common nasally. In the present study, maximum numbers of patient were of Grade II i,e 35(51.47%), Grade III 21 (30.88%) . While Grade IV were 7(10.30%) & Grade I was 5 (7.35%). Previous studies done by Chourasia et al, 2014; Shelke et al, 2014; Mohite et al, 2017[18]. also reported that the majority of patients had Grade II and III pterygium in their study. Our study was not without limitations because of its small sample size and lack of fine instrumentaions.

CONCLUSION

From present study we may conclude that most of the cases of pterygium were seen in middle age group, males, rural people and outdoor workers . Presentation is usually late with Grade II to Grade IV pterygium. As the outdoor workers are more exposed to UV-B radiation, heat, dust and wind ; wearing protective glasses, caps etc may reduce the rate of pterygium formation in these group.

There was no financial or other conflicts of interest.

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