



PREVALENCE AND ASSOCIATED FACTORS FOR PTERYGIUM IN NORTH INDIAN POPULATION

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ABSTRACT **Background:** A pterygium is a triangular fibrovascular subepithelial growth of bulbar conjunctival tissue that has invaded the superficial cornea, causing visual impairment. It is a degenerative condition.

Objective: To study the prevalence and types of pterygium in patients in a tertiary hospital in North India.

Material and Methods: A descriptive cross sectional study was done for a period of 6 months, in the out patient department of ophthalmology. Out of the 3000 patients who had registered, the clinical records of 250 patients with pterygium were retrieved and analysed using MS office Excel sheet

Results: The results depict that females (60%) were more affected than the males (40%) and nasal pterygium was more common than the temporal pterygium. It was also found that unilateral pterygium (80%) is more common than bilateral pterygium (20%) and progressive pterygium (60%) is more common than atrophic or recurrent types. Analysis also revealed that type I pterygium (50%) is more common.

Conclusion: The prevalence of pterygium increased with increasing age and long term exposure to sunlight. It can be decreased by using protective measures.

KEYWORDS : Nasal pterygium, Pterygium, Prevalence, Progressive pterygium.

INTRODUCTION:

Pterygium is a common external ocular disease with prevalence ranging between 0.7% and 33% globally¹. The disease is described as a wing-shaped, oriented fibrovascular lesion that crosses the nasal or temporal limbus and can result in obvious cosmetic problems, significant astigmatism, and visual impairment or blindness due to interference with visual axis. Surgery is warranted for pterygium approaching the central part of the cornea. Unfortunately, the recurrence rate after the surgery is between 30% and 90%². Numerous theories regarding the pathogenesis of pterygium included genetic, environmental, infective, and immunological factors³. Although the hypothesis implicating ultraviolet radiation (UVR) as a risk factor has been well studied in populationbased studies, case-control studies, and laboratory studies, the definitive cause of pterygium is not well understood⁴.

Treatment for pterygium has been improved in recent years to reduce the recurrence rate; for example, the recurrence rate after pterygium excision with limbal conjunctival autograft was lower than that of bare sclera, bulbar conjunctival autograft, or intraoperative mitomycin C application⁵. There were a few population-based studies of pterygium in different regions of India⁵⁻¹⁰. However, the prevalence of and risk factors for pterygium in rural areas of North India, have not been sufficiently investigated.

AIM AND OBJECTIVES:

To investigate the prevalence and risk factors for pterygium in rural older adults in a tertiary care hospital of North India.

MATERIAL AND METHODS:

This was a cross-sectional study done on patients assisted in a specialized eye clinic located in AIIMS, Raebareli in the period from Nov 2018 to April 2019. Out of a total of 3000 patients of both genders aged between 30 and 74 years with various ocular disorders who attended the OPD, underwent ocular inspection followed by thorough ophthalmologic assessment. 250 (8.3%) patients were diagnosed to have pterygium. The clinical case records of all the 250 patients with pterygium (8.3%) were retrieved and analysed for demographic data, laterality, site and type.

Inclusion Criteria:

Patients in the age group 30 to 74 years with pterygium were included in the study.

Exclusion Criteria:

Patients with pseudo pterygium were excluded. All patients fulfilling the above criteria were included in the study. The data were tabulated in MS office Excel sheet and analysed using SPSS 20.

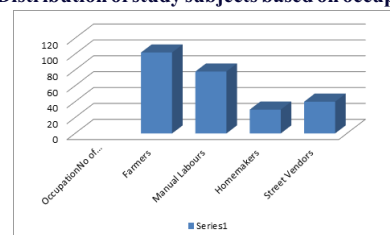
RESULTS:

Out of the 250 patients, 40% were males and 60% were females. It shows that females were more affected than males. 25 (10 males and 15 females) patients were in the age group of 30-40 years, 78 (30 males and 48 females) patients in the age group 41-50 years, 100 patients (40 males and 60 females) in the age group of 51-60 years, 25 (10 males and 15 females) patients in the age group 61-70 years and 22 (10 males and 12 females) patients in the age group >71 years.

Table 1: Age wise distribution of patients suffering from pterygium

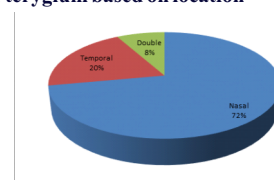
Age Group (years)	Male (100)	Female (150)
30-40	10	15
41-50	30	48
51-60	40	60
61-70	10	15
>71	10	12

Figure 1: Distribution of study subjects based on occupation.



High prevalence of pterygium was seen in farmers (102 patients), followed by manual labourers (78 patients) and street vendors (40 patients) and lesser prevalence was seen in home makers (30 patients). Most of the cases 80% (200 patients) had unilateral pterygium and 20% (50 patients) had bilateral pterygium. As there were 50 patients with bilateral pterygium, the total eyes having pterygium were 300. Amongst these cases, majority were nasal pterygium 180 (72%), 50 (20%) of the pterygium were temporal and 20 (8%) pterygium were double pterygium.

Fig 2: Type of Pterygium based on location



It was also seen that 150 (60%) of the pterygium were progressive, 70 (28%) were atrophic pterygium and 30 (12%) had recurrent type of pterygium. Amongst these, 125 (50%) were type I pterygium, 100 (40%) were type II pterygium and 25 (10%) were type III pterygium.

DISCUSSION:

Our study showed that the prevalence of pterygium was more in females than males. A study by Lu et al reported that women were at higher risk than men¹¹. Some studies found that men have higher prevalence than women¹²⁻¹⁴, where as some studies show that there is no significant difference in the prevalence between men and women¹⁵⁻¹⁶.

This variability could be due to the difference in risk factors in different areas. In our study, prevalence of pterygium increased with age, but was found to be almost the same in patients more than 60 years of age. Most of the studies also show that the prevalence of pterygium increased with age.¹⁷⁻¹⁸ Highest prevalence was seen in farmers, and manual labourers and street vendors as they spent most of their day time outdoors and increased exposure to UV rays from sun, dust and dryness increased the prevalence of pterygium. Similar observation were done by Chavan WM et al¹⁹ and Maharjan IM et al.²⁰ Their studies reveal that (82%) patients who were farmers and 64.66% of the outdoor workers had pterygium respectively 80% of our cases were unilateral and the most common site of occurrence was nasal (81%). This was similar to the findings of Krishnaram²¹ who found that the prevalence of nasal pterygium was 99%. A study by Chavan WM et al¹⁹ found that 100% of pterygium were nasal and Rohatgi S²² found that 92% cases of pterygium belong to nasal side, while only 4% were temporal side. The higher incidence of pterygium on nasal side was due to flow of tears towards the punctum and the sand and dust particle moved towards nasal side. It is also thought that the predominance of nasal pterygium is due to reflection of ultraviolet light from the nose to nasal conjunctiva. Durkin SR et al.²³ in Meiktila eye study in Australia showed that 8% of cases had bilateral pterygium where as our study showed that 20% of the pterygium were bilateral. In our study 67% of the pterygium was progressive, 27% were atrophic pterygium and 6% were recurrent type. It was also observed that 51% were type I pterygium, 42% were type II pterygium and 7% were type III pterygium. In a study by Shrestha P11 et al Grade I lesions were more commonly seen while grade II lesions were observed more in patients with predominantly outdoor occupation.

Limitations of study:

As it was a single centre study the results cannot be generalized to entire population. Furthermore comprehensive and multi centric studies including meta-analysis of various earlier studies should be done, to have a more meaningful and high impact results.

CONCLUSION:

It can be concluded that pterygium is a degenerative condition which is a significant visual problem. Pterygium is more common in patients who do outdoor work which can be decreased by wearing photo protective goggles while working. These types of descriptive analytical studies are important from various regions of our country so as to improve the health care services with speciality care in all government/private hospitals so as to prevent visual impairment.

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