



## STUDY OF PREVALENCE AND RISK FACTORS FOR PTERYGIUM IN EASTERN BIHAR

Uday Narayan Singh

Professor, Department Of Ophthalmology, JLNMC, Bhagalpur

Punit Parasurampuria\*

Senior Resident, Department Of Ophthalmology, JLNMC, Bhagalpur  
\*Corresponding Author**ABSTRACT****AIM:** To study the prevalence and risk factors of pterygium in Eastern Bihar.**BACKGROUND:** Pterygium is a triangular encroachment of vascularized granulation tissue covered by conjunctiva in the inter-palpebral area. Pathologically pterygium is degenerative and hyperplastic condition of conjunctiva.**METHOD:** This cross sectional (prevalence) study was concluded in the department of Ophthalmology of J.L.N Medical College & Hospital, Bhagalpur, Bihar between Jan 2019 to Jun 2019.**RESULT:** 7213 patients of various ocular ailments were registered out of which 426(5.91%) were suffering from pterygia.**CONCLUSION:** Prevalence of pterygium is 5.91%. Early surgical removal may be helpful for visual rehabilitation.**KEYWORDS :** Pterygium, Prevalence, Risk Factors.**INTRODUCTION:**

Pterygium is a triangular encroachment of vascularized granulation tissue covered by conjunctiva in the inter-palpebral area.<sup>[1]</sup> Pathologically pterygium is degenerative and hyperplastic condition of conjunctiva.<sup>[2]</sup> Histologically, the sub epithelial tissue shows senile elastosis (basophilic degeneration) of substantia propria with abnormal collagen fibers. There is dissolution of Bowman's membrane followed by invasion of superficial cornea. Etiology of pterygium is unknown. A leading theory proposes that increased prevalence of pterygium among people in equatorial region is due to damaging effect of the ultraviolet radiation specially UV-B (280-315nm)<sup>[3]</sup> The working hypothesis is that this radiation causes mutations in P-53 tumor suppressor gene, thus facilitating the abnormal proliferation of limbal epithelium.<sup>[4]</sup> Progressive

pterygium is thick, fleshy and vascular with whitish infiltrate in the cornea in front of head – the cap. Regressive pterygium is thin, atrophic, attenuated with very little vascularity. There is no cap but Stocker's line, which is iron deposition in the basal layer of corneal epithelium, may be present anterior to the head. It may be asymptomatic initially but later on it can produce visual impairment by induced corneal astigmatism due to pull of fibrovascular tissue and also by its encroachment over visual axis.

**METHODS:**

This cross sectional (prevalence) study was concluded in the department of Ophthalmology of J.L.N Medical College & Hospital, Bhagalpur, Bihar between Jan 2019 to Jun 2019. The name, age, sex, occupation of selected pterygium patients was recorded. BCVA was recorded. Both eyes of the patients were examined in torch light and on slit lamp. Fundoscopy was done.

**INCLUSION CRITERIA:**

Pterygium irrespective of gender, age, laterality and position.

**EXCLUSION CRITERIA:**

Recurrent pterygium

**RESULT:**

7213 patients of various ocular ailments were registered out of which 426(5.91%) were suffering from pterygia [Fig 1].

Prevalence of Pterygium

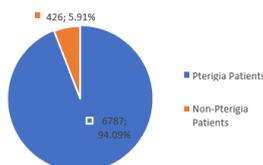


Fig 1:

Out of the 426 patients suffering from pterygia 281 (65.96%) were male and 145 (34.04%) were female. Regarding age, almost equal patients 131 (30.75%) were in the age group of 51-60 and 129 (30.28%) were in the age group of 61 years and above, followed by 103 (24.18%) in the age group of 41-50. Least number of patients 63 (14.79%) belonged to the age group of 31-40 years. Considering occupation 309 (72.54%) were outdoor workers (farmers or farm labourers etc.) followed by 67 (15.72%) house worker and 50 (11.74%) others (office staffs, teachers, shop-keepers). In relation to laterality 299 (70.17%) were having unilateral pterygium whereas 127 (29.81%) were having bilateral pterygium [Table 1].

**Table 1: Bio-social Characteristics of study population.**

Bio-social Characteristics	Numbers
<b>Gender</b>	
Male	281 (65.96%)
Female	145 (34.04%)
<b>Age Group (years)</b>	
31-40	63 (14.79%)
41-50	103 (24.18%)
51-60	131 (30.75%)
61-onwards	129 (30.28%)
<b>Occupation</b>	
Farmer/Farm Labourer	309 (72.54%)
House worker	67 (15.72%)
Others	50 (11.74%)
<b>Side of Pterygium</b>	
Unilateral	299 (70.19%)
Bilateral	127 (29.81%)
<b>Total number of Eyes having Pterygium</b>	553
<b>Position of Pterygium</b>	
Nasal	517 (93.49%)
Temporal	25 (4.52%)
Double	11 (1.99%)
<b>Nature of Pterygium</b>	
Progressive	401 (72.51%)
Atrophic	152 (27.49%)

The total number of eyes having pterygium were 553 as 127 patients were suffering from bilateral pterygium ( $299 + 127 \times 2 = 553$ ). Out of these 553 eyes 517 (93.49%) were nasal, 25 (4.52%) were temporal and 11 (1.99%) were double pterygia. It was observed that 401 (72.51%) were progressive whereas 152 (27.49%) were stationary or regressive or atrophic [Table 1].

**DISCUSSION:**

In the present study among 7213 patients of various ocular ailments 426(5.91%) were suffering from pterygium [Fig 1]. It is in agreement with prevalence rate of Chavan, W M et al (5.23%)<sup>6</sup> and T, Vijhaya

Priya et al (5.7%)<sup>2</sup>. Vinay Nagia et al<sup>9</sup> have also reported higher prevalence rate of 12.9%. Prevalence of pterygium varies widely with variation of altitude, occupation, and socioeconomic status of study population.

In present study pterygium was found in 65.96% males and in 34.04% females. AK Khurana et al<sup>2</sup>, C A McCarty et al<sup>4</sup>, H Shiroma et al<sup>5</sup> and Chavan WM et al<sup>6</sup> have reported male predominance for pterygium. However, study of T Vjihaya Priya et al<sup>7</sup> and Lu P. et al<sup>8</sup> showed predominance of pterygium in females. Male predominance in our study may be attributed to the fact that in this region men are earning members of the family and go for outdoor works and are exposed to sunlight, dust and other atmospheric irritants.

We have observed that prevalence of pterygium increased with increasing age, 61% above the age 51 years. Most of the studies have also reported the same result of increased pterygium with ageing<sup>2,6,7,9,10</sup>. The increase in the pterygium prevalence with increasing age may be due to increased cumulative life time exposure to sun light<sup>5</sup>.

In relation to occupation 72.54% patients who presented with pterygium were farmers/farm labourers. They were constantly more exposed to sunlight, dust and other noxious environmental stimuli. Similar observations were made by Chavan W.M.et al who in their study reported that 82% pterygium patients were outdoor workers and Padha A. et al in their study observed that 65% patients were outdoor workers. T Vjihaya Priya et al have reported that altogether 90.43% patients suffering from pterygium.

In present study 299(70.19%) cases of pterygium were unilateral where as 127 (29.81%) cases were bilateral. Chavan W.M.et al have reported unilateral cases 62% and bilateral 38%. A study done by T. Vjihaya Priya et al showed that 80% cases of pterygium were unilateral.

Out of 426 patients of pterygium 127 patients were suffering from bilateral pterygium and total number of eyes having pterygium were 553. Among these,517 (93.49%) were nasal, 25(4.52%) were temporal and 11 (1.99%) were cases of double pterygia. Rohtagi S. has reported 92% cases of nasal pterygium. 100% nasal pterygium have been reported by Chavan W.

M. et al. Higher incidence of pterygium on nasal side may be due to flow of tear towards medial canthus carrying with it dust particles towards nasal side.

In our study progressive pterygium was found in 72.51% eyes and atrophic in 27.49% eyes. Padha A et al in their study found progressive pterygium in 76% eyes and atrophic in 24% eyes. Chavan W. M. et al in their study have seen progressive pterygium in 72.4% eyes and atrophic in 27.6% eyes.

#### CONCLUSION:

Prevalence of pterygium in eastern Bihar surrounding Bhagalpur is 5.89%. Pterygium is more common in elderly male doing outdoor work in sunlight and dusty atmosphere. Early surgical removal may be helpful for visual rehabilitation. Use of sunglasses may have preventive role in the development of pterygium.

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