

## Original Research Article

# Sociodemographic profile of pterygium patients attending Government Medical College, Jammu, Jammu and Kashmir- a study from North India

Angli Manhas\*, Dinesh Gupta, Rameshwar S. Manhas, Gaurav S. Manhas

Department of Ophthalmology, Government Medical College, Jammu, Jammu and Kashmir, India

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### \*Correspondence:

Dr. Angli Manhas,

E-mail: [anglimanhas@gmail.com](mailto:anglimanhas@gmail.com)

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### ABSTRACT

**Background:** Pterygium is a fibrovascular wing or triangular shaped tissue that develops from the conjunctiva and encroaches on to the cornea.

**Methods:** This prospective observational study was conducted at postgraduate department of Ophthalmology of GMC Jammu, Jammu and Kashmir, India. A total of 90 pterygium patients were selected to analyze various sociodemographic factors especially age, sex, residence, occupation, position etc. on the occurrence of this problem.

**Results:** In the present study, out of 90 pterygium patients, 40% were in the age of 31-40 years followed by 24.44% in 41-50 years, 60% were males whereas 66.67% belong to rural areas. The incidence was found to be maximum among farmers 35.56% followed by labourers 20%. The right eye was involved in 55.56% cases while majority 97.78% cases of pterygium were nasal. Progressive pterygium was found in 80% while 20% reported with atrophic pterygium.

**Conclusions:** People who work outdoors are subjected to involuntary U.V. B exposure, dust. Workers must be aware of this and they must take appropriate precautions like wearing protective photochromatic glasses, caps etc.

**Keywords:** Conjunctiva, Incidence, Occupation, Pterygium

### INTRODUCTION

Pterygium is a common disorder of ocular surface in many parts of world described as ophthalmic enigma.<sup>1,2</sup> The word pterygium derives its name from "Pteryx" which is the Greek word for wing. Pterigion suggests a small wing. It is probably because the shape and vascularity of pterygium resemble the wing of certain insects e.g. Hymenoptera.<sup>3</sup> The wing shape of pterygium has supported the concept of localized limbal stem cell deficiency as a renowned cause of pterygium formation.<sup>4</sup> Pterygium was well recognized at the time of Hippocrates (460-375 BC) and Celsus described it as Urigus in his manuscripts. The earliest description of pterygium is available in the texts of the great surgeon of ancient

India, Sushruta who called it as 'Armanas'. In India, it is called 'Nakoona' in Hindi, due to its resemblance to a nail in its shape.<sup>5</sup> Pterygium is commonly seen in India, which is a part of the pterygium belt.<sup>6</sup> It is a potentially blinding disease in the advanced stage when it encroaches visual axis, which can have significant impact on vision and require surgery for visual rehabilitation.<sup>7</sup>

### METHODS

The present study was conducted on patients attending the outpatient department of Upgraded Department of Ophthalmology, Government Medical College, Jammu, Jammu and Kashmir, India, after due clearance from Institutional Ethics Committee. The informed consent

from all the patients was undertaken before inclusion in the current study. All principals of bioethics were followed in totality as per ICMR and CDSCO advocated good clinical practice guidelines. A total number of 90 patients with pterygium were selected from outpatient department. The following points were tabulated as under name, age, sex, address, occupation, side of pterygium (right/left eye), position of pterygium (nasal/temporal/both), nature of growth of pterygium (progressive/stationary), history, general examination, local examination, and investigations.

**RESULTS**

All the results are shown in Table 1.

**Table 1: Sociodemographic characteristics of study population.**

	Number of patients	Percentage
<b>Age (in years)</b>		
21-30	16	17.78
31-40	36	40.00
41-50	22	24.44
51- 60	8	8.89
61-70	5	5.56
>71	3	3.33
<b>Sex</b>		
Male	54	60.00
female	36	40
<b>Residence</b>		
Rural	60	66.67
Urban	30	33.33
<b>Occupation</b>		
Farmers	32	35.56
Labourers	18	20.00
Office staff	11	12.22
Students	7	7.78
Housewives	12	13.33
Others	10	11.11
<b>Eye involved</b>		
Right	50	55.56
Left	40	44.44
<b>Position of pterygium</b>		
Nasal	88	97.78
Temporal	2	2.22
<b>Nature of pterygium</b>		
Progressive	72	80
Atrophic	18	20

In the present study, 40% patients were in the age group of 31-40 years, followed by 24.44% in 41-50 years, 17.78% in 21-30 years, 8.89% in 51-60 years, 5.56% in 61-70 years and 3.33% in >71 years. There is a clear-cut male preponderance of 60% as compared to females 40%. The effect of living surroundings on the occurrence of pterygium showed more cases of rural areas that is

66.67%, than urban areas which are 33.33%. A distinct epidemiological data was found regarding effect of occupation on pterygium patients. This condition was maximum in farmers 35.56% followed by labourers 20%, office workers 12.22% and housewives 13.33%. The right eye was involved in 55.56% patients while left eye was involved in 44.44% patients. Most of the pterygium patients were seen on the nasal side 97.78%; 2.22% were on the temporal side and no patient was seen on both sides. 80% had progressive pterygium while 20% reported with atrophic pterygium. The present study outlines all the prominent epidemiological features involved in the occurrence of pterygium.

**DISCUSSION**

Pterygium is a common disease of the ocular surface characterized by the invasion of fibrovascular tissue from the bulbar conjunctiva onto the cornea. It can cause chronic ocular irritation, induced astigmatism, tear film disturbances, and decreased vision secondary to growth over the visual axis.<sup>8</sup> It is an ocular degenerative condition that has been attributed to environmental factors.<sup>9</sup> Although the exact etiology of pterygium is unknown, exposure to ultraviolet (UV) radiation is thought to be the major environmental risk factor as it is found in areas of bright sunlight.<sup>8,9</sup> Age, hereditary factors, sunlight, chronic inflammation, microtrauma, and dry eye are other possible contributing factors.<sup>8</sup>

In the present study maximum number of patients i.e. 40% was noticed in age group 31-40 years followed by 24.44% in age group 41-50 years. The risk of pterygium increases in patients who are in their third decade of life who work outdoor in an environment with high surface reflectance compare with those who work indoor and the prevalence of pterygium was most common in the fourth to sixth decade of life.<sup>10,11</sup> Rajiv et al had also found that most of the cases of pterygium belong to age group 30-40 years.<sup>12</sup> Osahon et al in their study in Benin city found the peak prevalence rate to be in the age group 31-40 years.<sup>13</sup> Rohatgi S found that maximum number of pterygium patients in his study were in the age group 30-39 years (32%).<sup>5</sup> Ganeshpuri AS et al in a study on 62 pterygium patients found that maximum patients i.e. 22 were in age group of 31-40 years followed by 17 in the age group of 41-50.<sup>11</sup> Sharma A et al in his study on 80 eyes with primary nasal pterygium found that maximum number of patients i.e. 26 are in age group (31-40) followed by 21 in age group (21-30).<sup>14</sup>

In the present study males (60%) were affected more than females (40%). Higher incidence in males is due to more exposure to dust, wind, heat and sun to which they are exposed while outdoor activities for their livelihood and the chief factor in the etiology was exposure to atmospheric irritants leading to chronic irritation of the conjunctiva.<sup>5</sup> Rajiv, et al had also found that pterygium was most commonly seen in males 64.29% as compared to females 35.71%.<sup>12</sup> Similar observations were made by

Saleem M et al in their study of 120 patients where 79.16% were males and only 20.84% were females.<sup>15</sup> According to Khan N et al and Rahman A et al pterygium is more common in males than females.<sup>16,17</sup> Krishnaram K and El-Sersy TH have made the same observations.<sup>18,19</sup> Ganeshpuri AS et al had also reported that pterygium is more common in males than females.<sup>11</sup> In his study on 62 pterygium patients, he found that 58.06% were males and 41.94% patients were females. Prabhakar SK also concluded that males suffered more than females.<sup>20</sup>

In this study, it was found that higher incidence of pterygium was in rural folk 66.67% who are exposed more to heat, dust, sun glare and atmospheric irritants. The tendency of prevalence of pterygium in rural area is more because of constant exposure of persons to more open and dusty environment in comparison to urban people.<sup>21</sup> Moreover the lifetime ocular sun exposure is an independent risk factor of pterygium and the pterygium is a significant public health problem in rural areas, primarily due to ocular sun exposure.<sup>22</sup> Pandey DJ et al in a study on 1400 pterygium patients found that maximum number of patients (929) were of rural background.<sup>21</sup> According to Asokan R pterygium was found more in those patients who lives in rural areas.<sup>23</sup> Similar observations was made by Rohatgi S in his study on 50 pterygium patients where 72% patients were from rural areas and only 28% from urban areas.<sup>5</sup>

In the present study, out of 90, the maximum number of patients were farmers 35.56%. Farmers and labourers are constantly exposed to dry, dusty, hot climate and incidence of pterygium was maximum in outdoor workers due to environmental irritants like heat, dust, fumes, gases and U.V radiation which are the main aetiological factors.<sup>5</sup> Rohatgi S had also found that maximum number of patients 40% affected with pterygium were farmers.<sup>5</sup> Maharjan MI et al and Chavan WM et al had also made similar observations.<sup>24,25</sup>

In present study right eye was involved in 55.56% whereas left eye was involved in 44.44% patients. Present study is in accordance with Rahman A et al who in his study found 72.1% of patients had pterygium in right eye.<sup>17</sup> Krishnaram K and Maharjan MI et al had also found that right eye was predominantly affected then the left eye.<sup>18,24</sup>

In present study 97.78% cases of pterygium belonged to nasal side. Higher incidence of pterygium on nasal side was due to flow of tears towards medial canthus carrying with it sand and dust particles towards nasal side.<sup>5</sup> Nasal presentation being more common may be due to transmission of UV light from temporal side of cornea through the stroma on to the nasal aspect of eye, perhaps explaining why these lesions are more common nasally.<sup>26</sup> Krishnaram K and Chavan WM et al found that all cases of pterygium were nasal in presentation.<sup>18,25</sup> Similar observations were made both by Rohatgi S and Prabhakar SK who in their respective studies found that

approximately 92% cases of pterygium belonged to nasal side.<sup>5,20</sup>

In present study, progressive pterygium was present in 80% of patients whereas atrophic in 20% of patients. Similar observation was made by Chavan WM et al in their study where they found progressive pterygium in 72.4% eyes and atrophic in 27.6% eyes.<sup>25</sup> Krishnaram K in his study on 115 pterygium patients found that in 78 patients, pterygium was progressive in nature type while in 37 patients it was atrophic.<sup>18</sup>

## CONCLUSION

From present study we may conclude that most of the cases of pterygium were seen in the middle aged people. Incidence of pterygium was more in males 60% than in females 40%. Incidence of pterygium was maximum in outdoor workers due to environmental irritants like heat, dust, fumes, gases and UV radiation which are the main etiological factors. Appropriate precautions should be taken such as use of UV protective glasses, hats and umbrellas to protect their eyes. They should also avoid exposure of their eyes to strong winds and heat from open flames.

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