

# Pterygium – A Study Which Was Done on A Rural Based Population

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## ABSTRACT

**Introduction:** Pterygium is a fibrous growth seen in bulbar conjunctiva. It is a non malignant growth which may cause visual impairment.

**Material and Methods:** Pterygium study was done on rural population in out patient department of NIMS Hospital and medical college, Jaipur, Rajasthan, India. Two hundred patients with 300 eyes which had Pterygium who attended the Eye OPD during 01/06/2011 to 01/03/2012 were taken for study. A detailed history, Visual Acuity, Refractive Status, Size of Pterygium and

duration of the work which was done outdoors were recorded. All other physical illness were ruled out.

The aim of the study is to find the incidence of Pterygium, male/female ratio, Comparison of size of Pterygium with duration of working hours in the outfield.

**Conclusion:** The maximum number of patients of pterygium were seen in the age group 20-60years and there is no difference in male/female ratio. The size of pterygium depends on their duration of working hours in outfield.

**Key words:** Astigmatism, Pterygium

## INTRODUCTION

Pterygium is a non-malignant, slow growing, wing shaped proliferation of the fibrovascular tissue, which arising from the sub-conjunctival tissue, which may extend over the cornea and, thus disturbing the vision [1].

It most commonly affects the individuals who live in the tropical and sub tropical areas and it is & greater in the people who are so exposed to the outdoor environment, especially to the dry, dusty, windy and sunny weather and in the people whose jobs expose them to the U.V. radiations, (farmers, arc welders, etc.) There is a worldwide distribution of Pterygium, but it is seen more commonly in the areas which have warm and dry climates [2].

Its prevalence is as high as 22% in the equatorial areas and it is less than 2% in the latitudes which are above 40 degrees [3,4]. The incidence of Pterygium is fairly high in this part of the world [5]. It can cause marked, irregular astigmatism which cannot be corrected with the use of conventional glasses, though contact lenses may correct astigmatism [6]. Pterygium is commonly seen in India, which is a part of the "Pterygium belt" which was described by Cameron [7]. In northern climates, Pterygium is almost exclusively confined to fishermen and rural workers [6]. Taylor and colleagues found a statistically significant association between the ultraviolet light exposure (both UV-A and UV-B) and the development of Pterygium in a large group of Chesapeake Bay fishermen [8]. From their studies, it was seen that the relationship between the ultraviolet radiation and the formation of Pterygium was strong.

Ultraviolet light exposure may not be the only factor which is associated with the development of Pterygium. Among Punjabi workers, those who were exposed to a dusty, indoor environment had a higher prevalence of Pterygium than the Punjabi workers who experienced were exposed to higher levels of outdoor ultraviolet radiation [9]. One study of Pterygium which was done among welders who were exposed to increased levels of ultraviolet light, showed a direct relationship between the lengths of their employments and the incidence of Pterygium [4].

The patients who are younger than the age of 15 years rarely acquire a Pterygium. Although the prevalence of the lesion increases with age, the highest incidence occurs between the ages of 20 and 49 years [10]. A pedigree analysis has demonstrated families

with a dominant mode of inheritance, although most of the cases appear to be sporadic [11].

## MATERIAL AND METHODS

A prospective analysis of was done on 200 patients of with 300 eyes with which had primary Pterygia, who attended ing the Eye OPD of the NIMS Hospital which was attached to the NIMS Medical College, which is situated in a rural area, which is 40 km away from Jaipur, during the period from June 2011 to March 2012, were done.

A detailed history, an eye examination which, included ing a examination in slit lamp examination, the visual acuity, the refractive status, the size of the Pterygium and the duration of work in which was done outdoors, were recorded. The patients with a history of trauma and, a previous surgery, patients having and those who had corneal scars were not included in the study.

On slit-lamp examination which was done with a slit beam which was focused on the nasal limbus, the Pterygium was graded, depending on the extent of the corneal involvement, and all the patients were divided into 4 groups (A,B,C and & D) according to the basis of the ages of the patients and into grades I to V, depending upon on the size of the Pterygium.

|           |   |
|-----------|---|
| Grade I   | Just touching the cornea                |
| Grade II  | Encroaching 1mm of the cornea           |
| Grade III | Encroaching 2mm of the cornea           |
| Grade IV  | Encroaching 3mm of the cornea           |
| Grade V   | Encroaching more than 3mm of the cornea |
| A         | 0-20 years                              |
| B         | 21-40 years                             |
| C         | 41-60 years                             |
| D         | > 61 years                              |

## RESULTS AND DISCUSSION

The present study was carried out to find the incidence of pterygium, the male/female ratio [Table/Fig-1], the size of the pterygium and, the correlation of the working hours in outdoors in different age groups.

There is No significant gender difference was found in male / female ratio in our studies as shown in [Table/Fig-2], as compared to that in the study which was done by Droutcas K and Skunadu W [11], which

shows us a high incidence of males who suffering from pterygium. This may be due to the fact that at they have done a general, population based study. Our study shows us a high incidence of pterygium in the age groups of 21–40 years and 41–60 years as shown in [Table/Fig-3], as which supported in the findings of the work studies which were done by Lin A, Stern G [11] and Dermartini DR et

| Male | Female | Total |
|------|--------|-------|
| 140  | 160    | 300   |
| 46%  | 54%    | 100%  |

[Table/Fig-1]: Male/Female ratio

| Age Group | Male        | Female    | Total       |
|-----------|-------------|-----------|-------------|
| 0-20 (A)  | 0           | 4 (1.33%) | 4 (1.33%)   |
| 21-40 (B) | 52 (17.3%)  | 75 (25%)  | 127 (42.3%) |
| 41-60 (C) | 71 (23.66%) | 88 ((29%) | 159 (53%)   |
| > 60 (D)  | 10 (3.33%)  | 0         | 10 (3.33%)  |

[Table/Fig-2]: Age & sex distribution of patients

| Age Group | A Group |     |   |     | B Group |     |    |     | C Group |     |    |     | D Group |     |   |     |
|-----------|---------|-----|---|-----|---------|-----|----|-----|---------|-----|----|-----|---------|-----|---|-----|
|           | M       | W/H | F | W/H | M       | W/H | F  | W/H | M       | W/H | F  | W/H | M       | W/H | F | W/H |
| Grade I   | -       | -   | - | -   | -       | -   | 6  | 6   | 12      | 8   | 14 | 10  | 2       | 0   | - | -   |
| Grade II  | -       | -   | 4 | 0   | 12      | 8   | 18 | 5   | 18      | 4   | 18 | 4   | -       | -   | - | -   |
| Grade III | -       | -   | - | -   | 24      | 7   | 44 | 6   | 23      | 10  | 40 | 7   | 5       | 0   | - | -   |
| Grade IV  | -       | -   | - | -   | 6       | 8   | 7  | 6   | 8       | 8   | 8  | 6   | -       | -   | - | -   |
| Grade V   | -       | -   | - | -   | 10      | 4   | -  | -   | 10      | 3   | -  | -   | 2       | 2   | - | -   |

[Table/Fig-4]: Comparison of age group with average working hours in outdoor. (W/H = Working Hours in outdoor; Gr.= Grade)

al., [2], which supports the theory of the U.V radiations and the environmental factors as the aetiopathogenesis of pterygium, which was supported by Talor et al., who found a statistically significant association between U. V radiation and the development of pterygium in a large group of Chesapeake bay fisherman.

In this study, we have found a significantly high incidence of pterygium in the persons, males / females, who worked in outdoors for a longer duration of time i.e, about an average of 6–8 hours per day as shown in [Table/Fig-4]. In rural areas, both males and females who were in the age groups of 21–40 years and 41–60 years work in outdoor equally. this is also supported by the work done by Ashok et al.,

## CONCLUSION

This study was done in the western part of India, in Rajasthan, in the rural population. More research work is required in this field, in this part of India. Our study shows us that a maximum number of patients who work in outdoors for a longer period of time had pterygium, grades II and, III. There were No significant difference was found in among males and, females in the rural population, ratio, as both works in out the fields in rural population. They were also did not wearing any protective devices. A comparative study is required to find out the incidence of pterygium between the persons who use ing protective devices and the persons who do not use ing protective devices. Another area of study can be done to find out the incidence of pterygium in the hilly areas, as

these persons the people from those areas are also exposed to the U.V. radiation equally. Another study is also required to find the incidence of the pterygium in the rural population and to find out why only some percentage of the patients develops pterygium, as compared to others, even though their working hours in outdoors were equal.

| Age Group |   | Gr.I       | Gr.II     | Gr.III      | Gr.IV     | Gr.V       |
|-----------|---|------------|-----------|-------------|-----------|------------|
| A         | M | -          | -         | -           | -         | -          |
|           | F | -          | 4 (1.33%) | -           | -         | -          |
| B         | M | -          | 12 (4%)   | 24 (8%)     | 6 (2%)    | 10 (3.33%) |
|           | F | 6 (2%)     | 18 (6%)   | 44 (14.66%) | 7 (2.3%)  | -          |
| C         | M | 12 (4%)    | 18 (6%)   | 23 (7.66%)  | 8 (2.66%) | 10 (3.33%) |
|           | F | 14 (4.66%) | 18 (6%)   | 40 (13.33%) | 8 (2.66%) | -          |
| D         | M | 2 (.66%)   | 1 (.33%)  | 5 (1.66%)   | 2 (.66%)  | -          |
|           | F | 0          | 0         | 0           | -         | -          |

[Table/Fig-3]: Comparison of age group & grade of pterygium

Awareness regarding the uses of protective devices and the public health education in the general population will be helpful in reducing the formation occurrence of pterygium.

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