

Incidences of Pterygium by Physical Examination Using a Slit Lamp and to Find its Association to Exposure to UV-B Rays in Outdoor Workers in a Tertiary Care Hospital

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Abstract:- Pterygium is a pinkish, triangular tissue growth on the cornea of the eye. The cause of pterygium is unclear but there is a strong correlation of its incidence with UV-B light. The aim of this study is to find out the incidence of pterygium in a tertiary care hospital and also find whether it is associated with UV-B radiation. The methodology of the study involves finding the incidence of pterygium by physical examination using a slit lamp. Once the incidence of pterygium is found then its correlation to working outdoors is calculated by taking occupational history of the patients. Then analysis is done to find any significant association. Out of the 150 patients who were included in the study, there were 75 males and 75 females. Of those examined, 26 were to diagnosed of having pterygium. Of those diagnosed of having pterygium, 17 were males and 9 were females. The average age of the subjects with pterygium recruited for this study was 38.9 years. The conclusion of the study is that there is clear association between the incidence of pterygium and exposure to UV radiation.

I. INTRODUCTION

A pterygium is a pinkish, triangular tissue growth on the cornea of the eye. It typically starts on the cornea near the nose. It may slowly grow but rarely grows so large that the pupil is covered. Often both eyes are involved. It is a benign growth.

It occurs more commonly among males than in females and in people living near the equator.[1] It becomes more common with increasing age.

The cause is unclear. It might be due to long term exposure to UV light and dust[2]. Genetic factors may also play a role.

II. AIM

To study the incidence of pterygium in outdoor workers.

III. OBJECTIVES

- To analyse the incidence of pterygium.
- To find out the association of pterygium with exposure to UV-B and dust by taking clinical history.

IV. METHODOLOGY

➤ *Inclusion criteria:*

Patients who are outdoor workers, above or at 18 years of age and had reported to the ophthalmic OPD of Saveetha medical college hospital with complaints regarding the eye during January 2019 to March 2019 have been included in the study.

➤ *Exclusion criteria:*

Patients who are indoor workers are not included in the study. Those less than 18 years of age are also not included. Patients who came with pterygium from January 2019 to March 2019 were diagnosed by physical examination using a slit lamp. Of those who were diagnosed, their occupational history was taken to see how many of them were working in outdoor jobs and had exposure to sunlight and dust. The incidence of pterygium is calculated and its association with working outdoors is evaluated. The statistical analysis is done to find any significant association.

V. RESULT

Out of the 150 patients who were included in the study, there were 75 males and 75 females. Of those examined, 26 were to diagnosed of having pterygium. Of those diagnosed of having pterygium, 17 were males and 9 were females. The average age of the subjects with pterygium recruited for this study was 38.9 years. The average reported age of onset of pterygium was 30.2 years. The average length of encroachment into the cornea was 1.35mm. 67% of the cases were unilateral with 36% in the right eye and 31% in the left eye. 33% of the cases were bilateral.

VI. DISCUSSION

A pterygium is a fibrovascular growth of the conjunctiva, commonly encroaching onto the cornea. Although usually small and benign in nature, pterygium is common; causes considerable irritation, astigmatism, and cosmetic concerns; and often recur after surgical removal. Altered limbal stem cells play a key role in the development of pterygium, and histopathological studies have revealed the role of chronic inflammation in its pathogenesis.

Although the pathogenesis of pterygium remains unclear, one of the demographic characteristics of pterygium is its strong link with the geographical latitude, thought to be related to variations in UV-B light exposure. Chronic exposure to UV-B radiation results in inflammation and hence a fibrovascular growth.[3] Epidemiological studies have revealed that the prevalence of pterygium is inversely related to latitude, and that it is greater among outdoor than indoor workers.

It has also been proposed that the gene for insulin like growth factor has been altered and has been a causative factor in the development of pterygium[4]

Considering the fact that vitamin D production is influenced by UVB exposure, some studies have suggested a possible association of vitamin D and pterygium, however this is against the general mechanism that vitamin D has anti-neovascular and anti-inflammatory properties.

In our study, the incidence of pterygium was 17.3%, of which the incidence of pterygium in males is 22.6% and the incidence of pterygium in females is 12% This higher incidence of pterygium in men can be attributed to the fact that men tend to do outside work more often and hence are more exposed to sunlight and dust. The average age of onset of pterygium was 30.2 years. The average length of encroachment into the cornea was 1.35mm. Of the pterygium cases, 36% was in the right eye. 31% was in the left eye and the other 33% was bilateral.

Twelker et al conducted a retrospective study on the incidence of pterygium and found out that the average age of patient presenting was 42.7 years while the average age of onset was 31.8 years.[5] Similarly in our study, the age of onset was only 30.2 years, this indicates that pterygium takes time to develop and only develops on repeated exposure to sunlight and dust.

VII. CONCLUSION

From our study, it is evident that there is a clear relationship between the exposure to UV rays and the development of pterygium in individuals.

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