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Original Research Paper

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STUDY OF FACTORS ASSOCIATED WITH PTERYGIUM BASED ON HISTORY AND CLINICAL EXAMINATION OF PATIENTS IN KASHMIR.

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ABSTRACT

Background: Pterygium is one of the ocular surface disorders that is linked with chronic UV exposure and is characterized by the proliferation, presence of inflammatory infiltrates, fibrosis, new vessel formation and breakdown of extracellular matrix .

Aim: To study the factors associated with Pterygium based on history and clinical examination of patients.

Methods: This was a prospective study carried out in 250 patients with Pterygium who presented to the OPD in a tertiary care centre from July 2019 to July 2021. A standard proforma which contained the likely risk factors was filled in for every patient. Clinical examination using slit-lamp biomicroscopy was performed for the diagnosis of pterygium.

Results: Out of the total 250 patients, 139 (55.6%) were males, and 111 (44.4%) were females. Mean age ± standard deviation was 53.12 years ± 15.85 years, and the age range was 20 to 80 years. 214 (85.6%) patients belonged to areas with higher altitudes with colder climatic conditions, 81 (32.4%) patients had a family history of pterygium, 155 (62%) patients had a history of chemical exposure, and 71(28.4%) patients had dry eye disease.

Conclusion: Our study shows that there is a role of various risk factors which include exposure to UV rays that are more prevalent in higher altitudes, cold climatic conditions , chemical exposure, positive family history, and dry eye disease in association with pterygium.

KEYWORDS : Cold Climate; Dry eye; Family history;High altitudes; Pterygium

INTRODUCTION

Pterygium is a general ocular surface and degenerative disease characterized by conjunctival fibrovascular proliferation and invasion of the peripheral cornea. Pterygium is composed of the head that invades the cornea, the neck that includes the superficial limbus and the body that overlie the sclera[1].Various studies have shown that it is an active process associated with cell growth, remodelling of the connective tissue, angiogenesis and inflammation. Despite the lack of knowledge regarding the pathogenesis of pterygia, epidemiologic evidences suggest that exposure to UV-irradiation may be an initial trigger in the development of this lesion. Other theories include changes of the apoptotic pathway the presence of some active angiogenetic factors or involvement of the MMPs, cytokines and growths factors[2]. Our study was conducted in order to determine various factors associated with pterygium through observations in clinical history and examination of the patients with Pterygium in the Department of Ophthalmology, Government Medical College Srinagar, Kashmir, India.

METHODS:

A prospective study, involving 250 patients having pterygium presenting at the Department of Ophthalmology, Government Medical College Srinagar for a period of two years from July 2019 to July 2021 were included after obtaining ethical clearance from the institutional ethical committee .

Exclusion Criteria:

- Patients below 20 years of age,
- Recurrent Pterygium and
- Pterygium harbouring any cysts or malignancies like squamous cell carcinoma and malignant melanoma.

A standard proforma containing various risk factors was filled in for every patient which included age, gender, family history of Pterygium, environmental conditions (cold or humid weather, higher altitudes), chemical(fertilizers, pesticides, etc.) exposure, and tear film break up time for initial evidence of dry eye (if present, a Schirmer's test was performed). Presence of Pterygium in first degree relatives was considered as a positive family history. Clinical examination was performed on slit-lamp to confirm the presence of pterygium. Statistical analysis of data was done in SPSS version 20.

OBSERVATIONS AND RESULTS:

Among the total 250 cases of Pterygium, 139 (55.6%) were male patients and 111 (44.4%) were females. Mean age ± standard deviation was 53.12 years ± 15.85 years and the age range was 20 to 80 years. Majority of the patients (30%) were in the age group of 61 to 70 years, followed by 41 to 50 years age group having (28%) cases. People dwelling in higher altitudes with colder climatic conditions were 214 (85.6%), and 36 (14.4%) patients were from relativey warmer and ower altitude areas. Positive family history for was present in 81 (32.4%) patients. History of previous exposure to toxic chemicals (fertilizers, insecticides, etc.) was present in 155 (62%) patients, and 71(28.4%) patients had dry eye disease(Table 1).

Table 1 Frequency Of Various Risk Factors In Patients Of Pterygium (n=250)

Risk factors	Number of patients	Percentage
AGE		
20-30	23	9.2%
31-41	28	11.2%
41-50	70	28%
51-60	18	7.2%
61-70	75	30%
71-80	36	14.4%
GENDER		
Male	139	55.6%
Female	111	44.45%
ATMOSPHERIC CONDITIONS		
Higher altitude and cold climate	214	85.6%

Lower altitude and warm climate	36	14.4%
FAMILY HISTORY		
Positive	81	32.4%
Negative	169	67.6%
CHEMICAL EXPOSURE		
Positive	155	62%
Negative	95	38%
DRY EYE DISEASE		
Positive	71	28.4%
Negative	179	71.6%

DISCUSSION:

Pterygium is most commonly found in the individuals who are exposed to the outdoor environmental conditions especially in tropical as well subtropical regions, therefore, exposure to cold, dry, windy, dusty and hash sunny weather is considered to be the risk factor [3]. In our study we found that pterygium was predominant in male population (55.6%) as compared to females (44.45%) which may be because of the predominance of male population in outdoor occupations as compared to female. This finding was consistent with studies conducted by Salagar et al [4], Imtiaz Ali Shah et al [5].

In our study pterygium was more common in the age group 61 to 70 years (30%). This finding is consistent with a study conducted by], Imtiaz Ali Shah et al (31.13%) [5].

In our study majority of the patients(85.6%) belonged to higher altitudes with cold climatic conditions which may be justified by the fact that in higher altitudes the exposure to UV rays is more as compared to areas with low altitudes. In addition the colder regions receive snowfall which acts as additional reflecting surface for sun rays. This finding is consistent with a study conducted by Shrestha S et al [6].

A positive family history was found in 32.4% of patients in our study, which is similar to the study conducted by Islam SI et al [7] and Imtiaz Ali Shah et al (31.13%) [5]

In our study patients having history of chemical exposure were found to be 62%, which is comparable to a study done by Kwon JS et al[8] and Imtiaz Ali Shah et al (60.31%) [5]

28.4% patients were associated with dry eye disease which is consistent with a study conducted by Imtiaz Ali Shah et al (60.31%) [5]

CONCLUSION:

Our study points towards the presence of multiple associations that simultaneously act in most of the patients, and there is a significant overlap of associations indicates which act as causative factors for the formation of pterygium.

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