

A retrospective study of prevalence of pseudoexfoliation syndrome in rural population of Latur district admitted in MIMSR Ophthalmology department

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Abstract

Objectives: Pseudoexfoliation syndrome (PXS) is the most common identifiable cause of secondary glaucoma, the prevalence of which varies considerably among different ethnicities. The aim of this study was to assess the prevalence of pseudoexfoliation syndrome in Latur. **Methods:** A retrospective study conducted in the period from September 2013 to September 2014 in a teaching hospital serving a population of about 1 million. 949 patients aged 45 or above attending the general ophthalmic clinics were recruited for this study. A detailed evaluation including ophthalmic and general history, slit lamp biomicroscopy, intraocular pressure measurement, gonioscopy and dilated eye examination was performed on all patients. **Results:** 72(7.58%) subjects were found to have PXS with a male to female ratio of 1.25:1. All 72 (100%) cases were bilateral and 25(34.72%) patients had high intraocular pressure. **Conclusion:** To the best of our knowledge, this is the first study conducted in a Latur population to determine the prevalence of PXS. The prevalence rate of 7.58 % is similar to other studies conducted in south Asia, however all cases were bilateral and quite a high percentage of patients had high intra-ocular pressure

Keywords: pseudoexfoliation, latur.

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INTRODUCTION

Pseudoexfoliation syndrome (PXS) is characterized by the deposition of a distinctive fibrillar material in the anterior segment of the eye and was first described in 1917 by Lindberg¹. It is frequently associated with open angle glaucoma, known as pseudoexfoliation glaucoma,

which is the most common identifiable form of secondary open angle glaucoma worldwide². Despite extensive research, the exact chemical nature of the fibrillar material is unknown. It is believed to be secreted multifocally in the iris pigment epithelium, the ciliary epithelium, and the peripheral anterior lens epithelium³. The material moves into the aqueous humor and is carried to the trabecular meshwork, following the normal flow. Obstruction of the trabecular meshwork by this fibrillar material and pigment causes elevation of the intraocular pressure (IOP) leading to glaucoma⁴. PXS is now suspected to be a systemic disorder and has been associated preliminarily with stroke, systemic hypertension, and myocardial infarction⁵. In fact pseudoexfoliative like material has been found in lungs, skin, liver, heart, kidney, gallbladder, blood vessels, extra ocular muscles and meninges⁶. PXS is rarely seen before

the age of 50, and its prevalence increases markedly with age⁷. Although epidemiological studies of PXS have been done in south Asia^{11,12} but there is no data available on prevalence of PXS in Latur. This study was performed to determine the prevalence of PXS in Latur.

MATERIALS AND METHOD

After approval from Hospital Ethics Committee, cross-sectional hospital based study was performed at Ophthalmology department, MIMSR Medical College, Latur. All the patients who were 45 years of age or older presenting to eye in patient department from September 2013 to September 2014 were enrolled for this study. After informed consent the patients underwent complete ophthalmic evaluation. This included complete ophthalmic and general history, best corrected visual acuity, slit lamp examination, shiotz tonometry and gonioscopy. The patients were then dilated and slit lamp examination of the lens and fundus was carried out. The criterion used to diagnose PXS was the presence of pseudoexfoliation material on one or more anterior segment structures. The aim of the study is to know the prevalence of PXS in a given population. Statistical analysis was performed.

Inclusion Criteria

Those aged 40 years and above or those turning 40 in the current calendar year and resident at the target address for a minimum period of 6 months were eligible for inclusion.

Exclusion Criteria

People staying at the target households for a period of less than 6 months, temporary residents (people who have permanent residence elsewhere), and hostel dwellers were excluded.

OBSERVATION

949 patients were recruited for the study. Out of these 72 had pseudoexfoliation syndrome.

Table 1: Patients with pseudoexfoliation syndrome sex wise distribution

Gender	No.	Percentage (%)
Male	40	55.55%
Female	32	44.44%
Total	72	100%

There were 40 males and 32 females with a male to female ratio of 1.25:1. Out of 72 patients with PXS 55.55% were males and 44.44% were females and this difference was not significant.

Table 2: Number of Patients with pseudoexfoliation syndrome according to age groups

Age Bracket (Years)	Male	Female
45-55	3	1
56-65	7	4
66-75	9	9
76-85	21	12
>85	0	0

As shown in table 2, 70.83% of the patients with PXS were 66 years old or above. The prevalence was 20.83% in patients less than 66 years of age, which increased to 70.83% in patients 66 years old or older. ($p = 0.001$). The prevalence of PXS increased with the increasing age as shown in Table 2.

DISCUSSION

The reported prevalence rate of PXS syndrome in different populations shows extensive variations, 0% in Eskimos⁹, 1.8% in the United States⁸, 5–25 % in the Scandinavian countries⁹, and 38% in Navajo Indians¹³. This variation is combination of true differences due to racial difference, the age and sex distribution of the population group examined, the criteria used to define examined populations that is, persons over a certain age, patients taken from eye clinics, patients with cataracts, and glaucoma patients. This study is first study of its kind from Latur. Our examined population was recruited from the eye clinic and we found the prevalence to be 7.58%. This is quite similar to 7.4% in a similar hospital based study from India¹⁴ and 6% in south Indian population based survey¹⁵ and slightly lower than in neighboring Iran where the prevalence was found to be 9.6%¹⁶. These geographic distribution patterns may perhaps be explained either by regional gene pools or by environmental influences. We did not notice any sex predilection; however the prevalence was slightly higher in males. As expected and reported in other studies¹⁷⁻¹⁹ the prevalence increased with increasing age reaching 70.83% in patients over 66 years of age. We also noted that the PXS was bilateral in 100% of the cases, which is not documented by any study, but as shown by Prince *et al* and Speakman *et al*, the disease is invariably bilateral pathologically^{20,21}.

CONCLUSION

In conclusion we found the prevalence of PXS to be 7.58% in Latur population. This rate is similar to other studies conducted in south Asia, however all cases were bilateral.

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