



Original Research Article

Pseudoexfoliative cataract with associated systemic disorders

Pooja H V^{1,*}, H T Venkate Gowda¹, Subhashchandra¹¹Dept. of Ophthalmology, Adichunchanagiri Institute of Medical Sciences, Adichunchanagiri University, B G Nagara, Mandya, Karnataka, India

ARTICLE INFO

Article history:

Received 28-10-2019

Accepted 18-11-2019

Available online 17-03-2020

Keywords:

Diabetes mellitus

Hypertension

Pseudoexfoliation

ABSTRACT

Purpose: To find out the association of various systemic disorder with pseudoexfoliative syndrome.**Materials and Methods:** 67 patients aged between 50-80 years who presented to our OPD and diagnosed as pseudoexfoliative cataract from July 2018 to April 2019 were included in our study. Written informed consent was taken from all the participants. Best corrected visual acuity (BCVA), slit lamp examination (SLE), funduscopy was done in all. Along with these complete blood count, FBS, PPBS, echo, ECG and chest x-ray was done. The data was analysed using SPSS version 17.0. Results were expressed as mean, frequency and percentage.**Results:** Out of 67 patients, 17 patients (25.37)% had Diabetes mellitus, 10 patients had hypertension, 2 patients had IHD and one COPD.**Conclusion:** Our study shows more association with the diabetes mellitus.© 2020 Published by Innovative Publication. This is an open access article under the CC BY-NC-ND license (<https://creativecommons.org/licenses/by/4.0/>)

1. Introduction

Pseudoexfoliation (PXF) syndrome results in the accumulation of pseudoexfoliative material particularly at the pupillary margin of the iris and throughout various structures in the anterior chamber of the eye. The pseudoexfoliative material is deposited on the iris, lens capsule, corneal endothelium, angles leading to phacodonesis, zonular dehiscence. Also seen is dispersion of pigments and rigid pupil. The pseudoexfoliative material is also known to get deposited in heart, lungs, liver and kidney.¹⁻³ Various associations found are Alzheimer's type of dementia, sensory neural hearing loss and cardiovascular disease.⁴⁻⁶ The aim of our study was to find out the association of various systemic disorder with pseudoexfoliative syndrome.

2. Materials and Methods

A cross-sectional study was conducted from July 2018 to May 2019 at Adichunchanagiri institute of medical

sciences, B.G. Nagar. Ethical clearance has been taken from the institution ethics committee. 67 patients (28 males and 39 females) aged between 50-80 years who presented to our Ophthalmology OPD during the time period and diagnosed as pseudoexfoliative cataract after examination were included in our study. Written informed consent was taken from all the participants. Elaborate history was taken from the patients including about their systemic conditions. Routine ophthalmologic examination involved assessment of Best corrected visual acuity (BCVA), slit lamp examination(SLE), IOP, funduscopy was done in all. Known case of hypertension or blood pressure more than 140/90mm of Hg was taken as hypertensive, Known case of diabetes mellitus or FBS>126mg/dl and PPBS> 200mg/dl was taken as diabetics. Low density lipoprotein<35mg/dl for males and <45mg/dl for females was taken as dyslipidemia. Patients on treatment or newly diagnosed cases of COPD was recorded. Along with these complete blood count, FBS, PPBS, echo, ECG and chest x-ray was done whenever required. The data was analysed using SPSS version 17.0. Results were expressed as mean, frequency and percentage.

* Corresponding author.

E-mail address: poojahv1410@gmail.com (Pooja H V).

3. Results

Out of 67 patients, males included 28 and females 39. Total of 126 PXF eyes were seen out of which 59 were bilateral and 8 unilateral. Pseudoexfoliative syndrome was more associated with Diabetes Mellitus (17 patients - 25.37%) followed by Hypertension (10 patients- 14.92%) in our study. Also 2 cases were IHD and one patient had COPD (Table 1).

Table 1: Total number and percentage distribution of various systemic associations with pseudoexfoliation

Comorbidities	Pseudoexfoliative patients	Percentage (%)
Diabetes Mellitus	17	25.37
Hypertension	10	14.92
IHD	2	2.96
COPD	1	1.49

4. Discussion

In our study we found that more association with diabetes mellitus, hypertension being the second leading association. This highlights correlation between diabetes mellitus and PXF eyes. Australian Blue Mountains Eye study showed pseudoexfoliation was significantly associated with a history of hypertension, angina or both.⁷ Gonen et al in a study showed higher incidence of renal artery stenosis and hypertension.⁸ Citrik et al showed significant difference in pseudoexfoliation prevalence with coronary artery disease and also in the prevalence of coronary artery disease in pseudoexfoliation.⁹ Andrikopoulos et al¹⁰ showed positive association of pseudoexfoliation with the risk for coronary artery disease in patients above 50yrs of age. Strength of our study is standard parameter for hypertension and diabetes mellitus in accordance with guidelines. All cases were examined by a single examiner and there was no interobserver variability. Limitations of our study were observer bias, small sample size and gender imbalance.

5. Conclusion

Systemic associations are known. In our study we found that more association with diabetes mellitus, hypertension being the second leading association. Further research is needed to establish the association of diabetes mellitus and COPD with the pseudoexfoliation with eyes.

6. Source of Funding

None.

7. Conflict of Interest

None.

References

- Schlotzer-Schrehardt UM, Koca MR, Naumann GO, Volkholz H. Pseudoexfoliation syndrome. Ocular manifestation of a systemic disorder. *Arch Ophthalmol.* 1992;110:1752–1756.
- Streeten BW, Lizy, Wallace RN, Eagle RC, Keshgegian AA. Pseudoexfoliative fibrilloglycopathies in visceral organs of a patient with pseudoexfoliation syndrome. *Arch Ophthalmol.* 1992;110:1752–1762.
- Schumacher S, Schlotzer-Schrehardt U, Martus P, Lang W, Naumann GO. Pseudoexfoliation syndrome and aneurysms of the abdominal aorta. *Lancet.* 2001;357:359–360.
- Cumurcu T, Dorak F, Cumurcu BE, Erbay LG, Ozsoy E. Is there any relation between pseudoexfoliation syndrome and alzheimer's type dementia? *Semin Ophthalmol.* 2013;28(4):224–229.
- Papadopoulos TA, Charalabopoulou M, Vathylakis I, Goumas P, Gartaganis S, Naxakis S. Prevalence and severity of sensorineural hearing loss in patients with exfoliation syndrome. *Eur Rev Med Pharmacol Sci.* 2012;16:902–907.
- Alpaslan M, Karalezli A, Borazan M, Koktekir BE, Muderrisoglu IH. Decreased aortic root elasticity as a novel systemic manifestation of the pseudoexfoliation: An observational study. *Anadolu Kardiyol Derg.* 2012;12:483–487.
- Mitchell P, Wang JJ, Smith W. Association of pseudoexfoliation syndrome with increased vascular risk. *Am J Ophthalmol.* 1997;124:685–687.
- Gonen KA, Gonen T, Gumus B. Renal artery stenosis and abdominal aorta aneurysm in patients with pseudoexfoliation syndrome. *Eye (Lond).* 2013;27:735–741.
- Citrik M, Acaroglu G, Batman C, Yildiran L, Zilelioglu O. A possible link between the pseudoexfoliation syndrome and coronary heart disease. *Eye (Lond).* 2007;21:11–15.
- Andrikopoulos GK, Mela EK, Georgakopoulos CD, Papadopoulos GE, Damelou AN, Alexopoulos DK. Pseudoexfoliation syndrome prevalence in Greek patients with cataract and its association to glaucoma and coronary artery disease. *Eye (Lond).* 2009;23:442–447.

Author biography

Pooja H V Assistant Professor

H T Venkate Gowda Professor and HOD

Subhashchandra Junior Resident

Cite this article: Pooja H V, Gowda HTV, Subhashchandra. Pseudoexfoliative cataract with associated systemic disorders. *Indian J Clin Exp Ophthalmol* 2020;6(1):61-62.