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PREVALENCE OF ELEVATED INTRAOCULAR PRESSURE IN A SAMPLE OF IRAQI POPULATION WITH PSEUDOEXFOLIATION SYNDROME

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ABSTRACT

Aim of study: to calculate the frequency of elevated intraocular pressure (IOP) in patients with pseudoexfoliation syndrome (PXF). **Patients and methods:** hospital based descriptive study conducted in Ibn Al-Haitham teaching eye hospital in the period from July 2013 to October 2013, measurement of IOP by applanation tonometry done to patients having PXF identified by slit lamp examination. **Results:** One hundred twenty five patients (n=125) having PXF identified by slit lamp examination. Thirty-two cases (32) with PXF had high IOP (≥ 21 mmHg); percentage of them is 25.6 %. **Conclusion:** the prevalence of elevated IOP among patients with PXF found to be 25.6 %.

INTRODUCTION

Lindberg first reported pseudoexfoliation syndrome (PXF) in 1917 in a Finnish population.[1]

Pseudoexfoliation characterized by the deposition of a distinctive fibrillar material in the anterior segment of the eye. Histologically, this material has been found in and on the lens epithelium and capsule, pupillary margin, ciliary epithelium, iris pigment epithelium, iris stroma, iris blood vessels, and subconjunctival tissue.

The material has also been identified in other parts of the body. Although its origin is not known precisely, the material probably arises from multiple sources as part of a generalized basement membrane disorder. Histochemically, the material resembles elastic microfibrils and other extracellular matrix components.[2]

This syndrome is strongly age- related, It is rarely seen in persons younger than 50 years and occurs most commonly in individuals older than 70 years and its prevalence increases markedly with age.[2,3]

Elevated intraocular pressure (IOP) and glaucomatous nerve damage have been demonstrated in patients with PXF, pseudoexfoliation syndrome is frequently associated with open angle glaucoma, known as pseudoexfoliation glaucoma, which is the most common identifiable form of secondary open angle glaucoma worldwide.[4]

The associated glaucoma sometimes referred to as glaucoma capsulare.[5,6]

Subjects with PXF had a two- to threefold increased risk for glaucoma according to the Blue Mountains Eye Study.[5]

Eyes with PXF had higher mean IOP than eyes without PXF.[5,7] moreover, there is increased likelihood of glaucoma at the same IOP in subjects with PXF.[8]

The diagnosis of pseudoexfoliation (PXF) is clinically based. It requires the presence of typical pseudoexfoliative material on the pupillary margin and the anterior surface of the lens capsule, the characteristic appearance of which is a central disc surrounded by a clear zone, which, in turn, is surrounded by a ring-shaped deposit of dandruff like material. Associated features include pupillary ruff atrophy and pigment dispersion.[9]

PATIENTS AND METHODS

Patients attended outpatient clinic in Ibn Al-Haitham teaching eye hospital in the period from July 2013 to October 2013 identified having PXF by slit lamp examination; Patients previously diagnosed of glaucoma and taking Antiglaucoma medications excluded from the study, and subjects with aphakia or pseudophakia also excluded from the study.

Pseudoexfoliation diagnosed clinically by the presence of typical pseudoexfoliation material (PXM) at the pupil border and on anterior lens capsule on undilated examination.

IOP measurement by Goldmann's applanation tonometer with fluorescein stain and topical anesthesia done to all patient before pupillary dilatation done, then a dilated slit lamp examination done to confirm the presence of PXM on the anterior lens capsule and at pupil border.

Eyes with IOP of ≥ 21 mmHg considered having abnormal high IOP.

RESULTS

One hundred twenty five confirmed cases of pseudoexfoliation selected from outpatient department; there were 72 (57.6%) male and 53 (42.4%) female.

Age ranged from 53 years to 85 years mean age of the cases was 65.2 years.

Bilateral PXF found in 86 (68.8%) cases and unilateral PXF in 39 (31.2%) cases.

IOP ranged between 10 – 28 mmHg, mean 17.14 mmHg (SD ± 3.83); increased IOP (≥ 21) found in 32 out of 125 cases (25.6%) (fig.1).

Mean IOP of the right eyes (n= 102) was 17.4 mmHg while mean IOP of the left eyes (n= 109) was 16.9 mmHg (fig.2).

figure 1: percentage of patients with PXF and high IOP

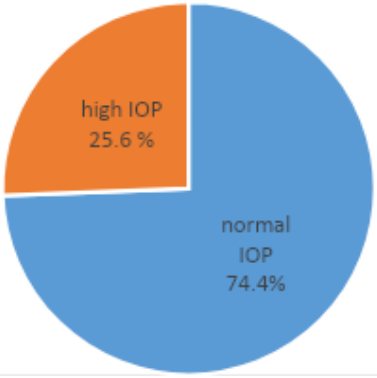
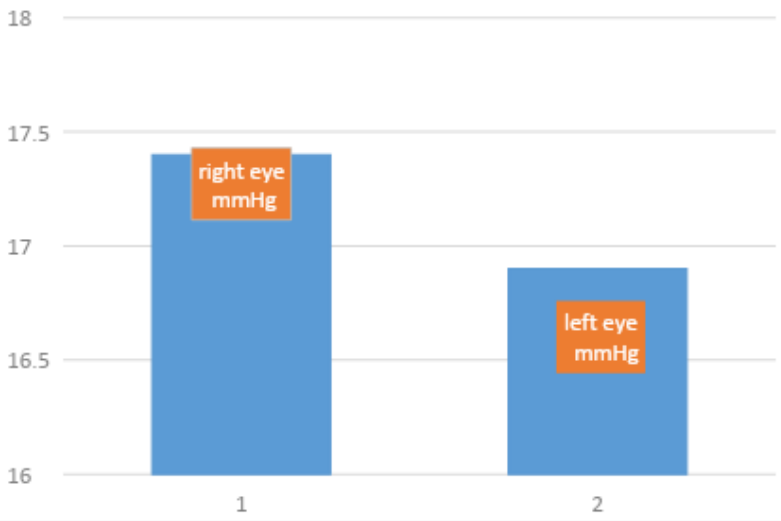


figure 2: mean IOP of the right and left eyes with PXF



DISCUSSION

Most of the studies on PXF have shown that the prevalence of high intraocular pressure with or without glaucoma to be in between 22% to 30%.[10,11,12,13]

A study by (Yanoff M. 1988) founded that 22% of patients with PXF had high IOP,15% had intraocular pressure greater than 22 mm Hg but no cupping or field loss (ocular hypertension or glaucoma suspect), and 7% had glaucoma.[14]

This is comparable to our study that show the prevalence of high IOP in patients with PXF to be 25.6%.

Other studies described a lower prevalence of raised IOP in patients with PXF, (Arvind H *et al*. 2003) found that raised intraocular pressure was present in 16.7% of people with pseudoexfoliation and glaucoma was present in 13% in a study in south India.[15]

Another study in central Iran revealed that (13%) with PES demonstrated increased intraocular pressure or glaucoma.[16]

This high rate in our study may be due do the design of study which was hospital based study and this is compared with another hospital-based studies like a study in Pakistan that found 40% of patients with PXF have high IOP [10], and a study in Jordan that found 33.1% of patients with PXF have high IOP.[17]

Studies have reported that eyes with PXF had higher mean IOP than eyes without PXF.[18,19]

The Blue Mountains Eye Study (Mitchell *et al*. 1999) stated that the mean IOP of the right and left phakic eyes with PXF was significantly higher than in right and left eyes, respectively, without PXF. The mean IOP of the right and left eyes with PXF was 17.8 and 17.2 respectively, and the mean IOP of the right and left eyes without PXF was 16.1 and 16 mmHg respectively.[5]

This is compared to our study, where the mean IOP of right and left eyes found to be 17.4 and 16.9, respectively, which is comparable to the Blue Mountains Eye Study results.

CONCLUSION

The prevalence of high IOP among patients with PXF found to be 25.6%.

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