Prevalence of Ocular Hypertension in Patients Above 40 Years of Age

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ABSTRACT

Introduction: Ocular hypertension is a condition with elevated intraocular pressure that needs to be monitored closely to prevent glaucoma and other complications. The study aims to find out the prevalence of ocular hypertension in patients aged more than 40 years.

Materials and methods: This is a hospital based cross-sectional study conducted in a community based tertiary hospital of Nepal.

Results: Mean age of the patients was 47.53years. 62% of the patients were males and 38% were females. Mean intraocular pressure in the right eye was 15.8 mmHg and mean intraocular pressure in left eye was 16.2 mm Hg. Prevalence of ocular hypertension was 6%.

Conclusion: All patients more than 40 years of age should undergo detailed ocular examination for early detection and treatment of ocular hypertension.

Key words: Glaucoma, Ocular hypertension.

INTRODUCTION

Ocular hypertension (OHT) is the condition with 'elevated' IOP (more than 2 standard deviation from the mean IOP) along with normal optic nerves, normal visual fields, and no known ocular or systemic condition accounting for the increased pressure. (Stamper et al, 2009) Individuals with ocular hypertension are at increased risk (compared with those with 'normal' IOP) of developing true glaucoma and central retinal vein occlusion. (Sperduto RD et al 1998). It is estimated that 4% to 7% of the US population older than 40 years have OHT. (Kass et al., 2016) It is therefore important to detect and diagnose ocular hypertension at early stage to prevent progression to true glaucoma. (Quigley, H., 1996; Leske MC, 1983)

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MATERIALS AND METHODS

A hospital based cross sectional study was conducted from March 2017 to March 2018 in the outpatient department of Ophthalmology in Dhulikhel hospital. The duration of the study was 12 months. The study was approved by the ethical review board of Dhulikhel hospital (IRC-KUSMS 86/17). A well informed written consent was taken from all the patients included in the study. All consecutive cases of ocular hypertension presenting to the OPD during the study duration were included in the study.

Inclusion criteria included age > 40 years whereas exclusion criteria included hypertension, diabetes, primary open angle glaucoma, angle closure glaucoma, uveitis, history of use of topical or systemic corticosteroids, and phacomorphic glaucoma.

All patients underwent ocular examination which included recording of visual acuity with Snellen's chart, retinoscopy, central corneal thickness using ultrasound pachymeter (4 sight Accutome), anterior and posterior segment examination and gonioscopy to rule out closed angles and other pathologies. Measurement of intraocular pressure was done by Goldmann applanation tonometer. For every case with ocular hypertension, visual field testing was done on Humphrey's automated visual field (Carl Zeiss Meditec AG) to rule out POAG. Ocular hypertension would be diagnosed if IOP (mean of 3 readings) is more than 21 mmHg along with normal optic nerves, normal visual fields, and no known ocular or systemic condition accounting for the increased intraocular pressure.

Continuous data were expressed in terms of mean ± Standard Deviation (SD). Probability values of $p < .05$ were considered statistically significant. All statistical calculations were done using computer programs Microsoft Excel 2016 and SPSS V.23 for Microsoft Windows.

RESULTS

Mean age of the patients in our study was 47.53 ±5.08 years. 62% of the patients were males and 38% were females. Mean CCT in RE was 528.79 µm and in LE was 526.48µm. Mean IOP in RE was 15.8 ± 3.64 mmHg and mean IOP in LE was 16.2 ± 3.13 mmHg. (Table 1) Total 6% of patients had IOP more than 21 mmHg. The distribution of IOP among patients is depicted in figure 1.

Prevalence of ocular hypertension was found to be 6%. Mean age among patients with ocular hypertension was 52.1 ± 5.71 years. Among patients with ocular hypertension 83.33% were males and 16.67% were females. Also in patients

Table 1: Demographic parameters and mean IOP of right and left eye.

Mean Age (Mean ± SD)	47.53 ±5.08 years
Males	62 %
Females	38%
Mean CCT RE	528.79±8.49 µm
Mean IOP RE (Mean ± SD)	15.8 ± 3.64
Mean CCT LE	526.48±8.43 µm
Mean IOP LE (Mean ± SD)	16.2 ± 3.13
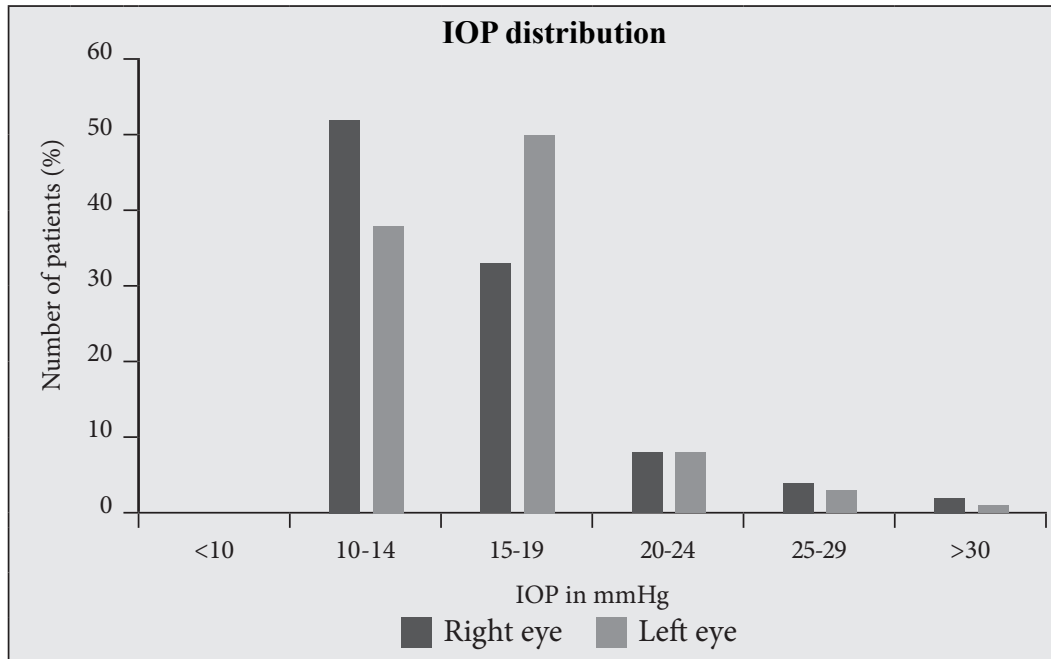
Figure 1: IOP distribution of each eye among the patients.

with ocular hypertension, mean IOP in RE was 26.66 ± 3.01 mmHg and LE was 24.33 ± 3.88 mmHg. Patients with ocular hypertension were examined for optic disc and visual field tests as per the methodology of the study and were found to be normal.

DISCUSSION

This study depicts the prevalence of ocular hypertension in people above 40 years of age in a tertiary center of Nepal. In this study population, the prevalence of ocular hypertension in patients above 40 years was found to be 6%. This is comparable to the prevalence of ocular hypertension in Framingham Eye Study and the Baltimore Eye Survey both of which found the prevalence of ocular hypertension to be 4–7% of people aged ≥40 years. (Sommer, 1996; Kahn 1977)

CONCLUSION

In summary, we calculated the prevalence of ocular hypertension in our study population which was found to be 6%. This will not only be a data that can be used for further studies but also this depicts the need of screening in patients above 40 years of age to diagnose ocular hypertension.

Limitations

This is a hospital-based study done in patients of a particular region; a population-based study would be a better alternative for data that can be applicable for the general population. Also, Ethnicity was not taken into account. Since Nepal has a wide diversity in ethnicity, the data may not be applicable throughout Nepal.

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