

Prevalence of POAG and PACG in patients attending Gujarat Adani Institute of Medical Science, Bhuj, Kutch

Atul Modesara^{1*}, Kavita Parekh²

¹Assistant Professor, ²Associate Professor, Dept. of Ophthalmology, Gujarat Adani Institute of Medical Sciences, Bhuj, Gujarat

***Corresponding Author:**

Email: researchguide86@gmail.com

Abstract

Aim: To compare the prevalence, demographical profile and visual status of Primary Open-Angle Glaucoma (POAG) and Primary Angle-Closure Glaucoma (PACG) at first visit in a Gujarat Adani Institute of Medical Science, Bhuj, Kutch.

Materials and Methods: Cross sectional observational study of 50 patients with primary glaucoma was done. Detailed history was taken and all patients underwent complete physical and ocular examination.

Results: 48% were suffering from POAG and 52% were suffering from PACG. Mean age was 56.58 in POAG and 54.42 years in PACG with male predominancy in POAG. From POAG patients 41.6% had VA<3/60 comparative to PACG patients 15.3%.

Conclusion: Prevalence of POAG and PACG is almost equal with PACG on slightly higher side and mean age of presentation was slightly higher for POAG than PACG. Good Vision ($\geq 6/18$) was more common in PACG than POAG while POAG is more commonly associated with blindness ($<3/60$) at presentation.

Keywords: Cross sectional, Prevalence, PACG, POAG.

Introduction

The term glaucoma refers to a group of diseases that have in common a characteristic optic neuropathy with associated visual function loss for which elevated IOP is one of the primary risk factors, its presence or absence though does not have a role in the definition of the disease.^(1,2) Glaucoma can be classified in various ways with separate anatomic, gonioscopic, biochemical, molecular and genetic views. The most acceptable scheme of classification combines the mechanism of anterior segment changes leading to glaucoma (Developmental, open angle or angle closure) and whether this mechanism is without any apparent cause (Primary) or due to some discrete cause or pre existing ocular or systemic disease (Secondary).⁽³⁾

Glaucoma affects more than 67 million people worldwide, of whom about 10% or 6.6 million are estimated to be blind. It is the leading cause of irreversible blindness worldwide and is second only to cataract as the most common cause of blindness overall.^(4,5) The irony of the whole situation is that this leading cause of irreversible blindness can largely be brought into control most importantly by timely diagnosis, effective treatment and constant ongoing monitoring.

Glaucoma is yet to be dislodged as a major cause of blindness in any country. The key to this is actually picking up glaucoma when patient has yet not suffered a significant visual loss through detailed history, thorough examination and meticulous investigations. Patient awareness, education and compliance is also equally important.⁽⁶⁾

This study is a step to assess and collect the information about the current status of Primary Glaucoma and the magnitude of visual impairment and

blindness due to Glaucoma at a Department of Ophthalmology, Gujarat Adani Institute of Medical Science, Bhuj, Kutch.

Materials and Methods

This study was conducted on 50 eyes of patients above 40 years of age and of either sex diagnosed with primary glaucoma at their first presentation in OPD of Department of Ophthalmology, Gujarat Adani Institute of Medical Science, Bhuj, Kutch. Detailed history, general physical examination and ocular examination under diffuse torch light and Slit lamp of every patient was done to assess all inclusion and exclusion criteria. Any patient harboring even a slightest evidence of any secondary cause of Glaucoma was excluded from the study.

Patients having systemic diseases which had already adversely affected vision in that particular patient were excluded from this study. Uncorrected visual acuity was documented at first visit. The World Health Organisation (WHO) definition of blindness was used. IOP was recorded with Goldmann's Applanation Tonometer and fundus examination done by slit lamp biomicroscopy using Volk's 90 D lens. Indirect gonioscopy was done using Goldmann three mirror gonio-lens and grading of anterior chamber angle was done by Shaffer's grading.

Observations and Results

The study included 50 eyes, out of which 24 patients had Primary Open Angle Glaucoma and 26 had Primary Angle Closure Glaucoma. The mean age of patients was found to be 56.58 + 7.52 years in POAG and 54.42 + 8.85 years in PACG. There was no

significant difference between POAG and PACG. ($p < 0.05$)

The study included a total of 28 males among 50 patients comprising 56% of total number of patients and 22 females comprising 44% of total number of subjects. Among 24 patients suffering from POAG, 15 (62.5%) were males and 9 (37.5%) were females. Among 26 patients of PACG, there was an equal distribution with 13 males (50%) and 13 females (50%).

Table 1: Distribution of patients according to UCVA

| UCVA | POAG (n = 24) | PACG (n = 26) |
|-------------|---------------|---------------|
| > 6/18 | 7 (29.1%) | 8 (30.7%) |
| 6/18 - 6/60 | 3 (12.5%) | 10 (38.4%) |
| 6/60 - 3/60 | 4 (16.6%) | 4 (15.3%) |
| <3/60 | 10 (41.6%) | 4 (15.3%) |

The Table1 shows the percentage distribution of patients into various categories of visual function (good vision - $\geq 6/18$, significant visual impairment - 6/18 to 6/60, significant severe visual impairment - 6/60 to 3/60, blindness < 3/60) with respect to their uncorrected visual acuity in both groups of primary glaucoma. Good Vision ($\geq 6/18$) was seen more commonly in PACG than POAG. Also 10 (41.67%) patients in POAG variety presented with blindness as compared to only 4 (15.38%) patients in PACG ($p < 0.03$).

Discussion

Glaucoma is the second leading cause of blindness worldwide accounting for 15% of global blindness.⁽⁷⁾ Regional burden of blindness (RBB) is highest for India (23.5% of global blindness) with at least 5.8 million blind due to glaucoma.⁽⁸⁾ India accounts for a minimum of 12.9% of Primary open angle glaucoma (POAG) blindness and 12.7% of Primary angle closure glaucoma (PACG) blindness in the world. These blindness figures are expected to double by 2020AD. However, India still lacks epidemiologically valid data on various subtypes of glaucoma.^(9,10)

Glaucoma has yet to be dislodged as a major cause of blindness in any country. The key to this is actually picking up glaucoma when patient has yet not suffered a significant visual loss through detailed history, thorough examination and meticulous investigations. This study comprising of 50 eyes diagnosed to have Primary Glaucoma was done to find out the comparative prevalence of POAG and PACG and also to find out visual morbidity attributable to primary glaucoma in this region. Out of 50 eyes, 24(48%) were suffering from POAG and 26(52%) were suffering from PACG. A community-based survey was conducted in Chhattisgarh in 2001 to assess the prevalence of glaucoma by Khandekar et al in which the prevalence of primary open angle glaucoma was 13.1% and primary angle closure glaucoma was 21.2% from among the total number of patients diagnosed to suffer from glaucoma.⁽¹¹⁾ The selection of patients was

different in this present study from the above mentioned study as this study included patients above age of 40 years as diagnosis of Glaucoma at an age below 40 qualify for definition of Juvenile Glaucoma in contrast to the above Glaucoma Survey in central India where age cut off limit was 35 years.⁽¹²⁾

The mean age of patients was found to be 56.58 + 7.52 years in POAG and 54.42 + 8.85 years in PACG. POAG was found in 8 (33.33%) patients in above 60 years as compared to 5 (19.14%) in PACG above 60 years. So POAG was significantly more than PACG in above 60 years old age group.

In this study no significant gender predilection was seen. There were equal number of males and females – 13 (50% each) in PACG and 15 males (62.5%) and 9 females (37.5%) in POAG. A male to female ratio of 3:1 was reported in a study published by A. Lawan about pattern of presentation and outcome of surgical management of primary open angle glaucoma in Kano, Northern Nigeria.⁽¹³⁾

In our study, good Vision ($\geq 6/18$) was seen more commonly in PACG than POAG. POAG is more commonly associated with blindness (<3/60) at presentation than PACG and this difference was statistically significant ($p < 0.03$). The high proportion of blindness due to advanced disease at presentation was disturbing and indicates an urgent need for early detection and treatment through national programs.

Conclusion

The prevalence of POAG and PACG is almost equal with PACG having slightly higher prevalence. The mean age of presentation was slightly higher for POAG than PACG. Good Vision ($\geq 6/18$) was seen more commonly in PACG than POAG while POAG is more commonly associated with blindness (<3/60) at presentation than PACG.

This study provides useful background information for planning glaucoma surveys in this region. The national policies which seem to be concentrating on cataract blindness solely at the moment need urgent reorientation due to the enormity and irreversibility of the problem of glaucoma blindness.

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