

# Prospective study to assess socio demographic and clinical profile of non-compliant patients on topical anti glaucoma medications in rural hospital in southern India

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## Abstract

**Background: Aim:** To assess the socio demographic and clinical profile of non-compliant primary open angle glaucoma patients on topical antiglaucoma medications. To assess the reasons for noncompliance in these patients. **Methodology:** This study was an Observational study which was conducted in Ophthalmology OPD at Kodagu Institute of Medical Sciences, Madikeri, from March 2020 to June 2021. Patients selected were those on topical medications for primary open angle glaucoma of age > 18 years. 95 patients were selected and where given questionnaire. The formula used here to calculate the sample size was sample size  $n = Z^2 p(1-p) / e^2$ . The prevalence of POAG is 3.51 %<sup>(1)</sup> Hence  $n=83$ . We have included 95 patients in our study. The statistical analysis was done using percentage, frequency and Chi square test. Approval from the ethical committee of the institution was taken before starting the study. Informed consent of the patient was taken. Patients were given the questionnaire and were asked to answer. The questionnaire included- mentioning the details of the antiglaucoma drug being used, duration of usage, missing of doses, reasons for missing the dosage etc was provided to the patients. **Results:** Total number of 95 patients took part in this study. Among them males and females were 45.2% and 54.7% respectively. Missing of dosage in the previous two weeks was considered as non compliant with regimen. Results showed that 28 out of 95 patients, (29.4%) were non compliant to the drug regime. **Conclusion:** In glaucoma patients, adherence to topical antiglaucoma medications is a major challenge As antiglaucoma therapy has to be used for lifelong and requires continuous care, awareness has to be created regarding the consequences of missing their medication and the importance of adhering to prescribed regimens. Different aspects about the cost of the medication, drug usage frequency, and side effects has to be considered and not just intraocular pressure control. Complete understanding of these factors and good counseling of the patient and their attenders can definitely improve the compliance of such patients and therefore the success of the treatment.

**Key words:** compliance, topical anti glaucoma, eyedrops, questionnaire study

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## INTRODUCTION

Glaucoma is defined as a chronic progressive disease and is an important cause of non-reversible yet treatable visual loss<sup>1</sup>. The treatment of glaucoma has to be followed for lifelong and regular follow up has to be carried out for periodic Intraocular Pressure (IOP) monitoring, fundus changes, visual field assessment and to prevent worsening of blindness. As the patients are usually asymptomatic and disease progression is not rapid, the importance of non-adherence to antiglaucoma medication is often overlooked. The purpose of this study is to assess the socio

demographic and clinical profile of such non-compliant patients and the reasons for non-compliance. This will in turn help in improving the clinician’s awareness of the patient’s problem and help in better counselling and communication of the patient regarding the antiglaucoma drug regimens.

**Aim:** To assess the socio demographic and clinical profile of non-compliant primary open angle glaucoma patients on topical antiglaucoma medications

To assess the reasons for non-compliance in these patients.

### METHODOLOGY

The study was an Observational study conducted in Ophthalmology OPD at Kodagu Institute of Medical Sciences and Hospital, Madikeri, from March 2020 to June 2021. The patients were those on topical antiglaucoma medications of age > 18 years. 95 patients were selected and interviewed with a questionnaire.

The formula used to calculate the sample size was- Sample size  $n = Z_{\alpha}^2 p(1-p) / e^2$  Where; n=Desired sample size.

$Z_{\alpha}$  = Standard error of the mean which corresponds to 95% confidence level. (1.96) P= Prevalence of condition being studied. e=allowable error (0.05).

Prevalence of POAG is 3.51% (6)

Hence n=83. We are including 95 patients in our study

- Statistical analysis was done by using percentage, frequency and Chi square test.
- Approval from the ethical committee of the institution was taken before starting the study
- All participants were informed about the purpose of the study and that it was voluntary to participate.
- It was also explained that their medical assistance will not be compromised if they will refuse or will decide to participate in the survey.
- An informed consent was taken.
- Patients were then requested to answer the questionnaires
- A questionnaire regarding the mentioning details of the antiglaucoma drug being used, duration of usage, missing of doses, reasons for missing the dosage etc was provided to the patients

### RESULT

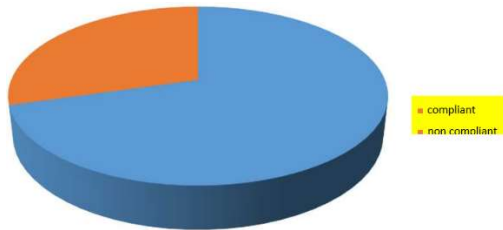
Total number of 95 Patients participated in this study, the demographics of whom are tabulated below:

**TABLE 1: DEMOGRAPHICS OF THE STUDY POPULATION**

VARIABLES		NUMBER	PERCENTAGE
GENDER	MALE	43	45.2
	FEMALE	52	54.7
AGE (IN YEARS)	20-40	18	18.9
	41-60	41	43.1
	61-79	31	32.6
	>79	5	0.05
	EDUCATION	No formal education	11
	Primary	18	18.9
	Secondary	26	27.3
	Graduate/postgraduate	40	42.1
OCCUPATION	MANUAL LABOURER	28	29.4
	PROFESSIONAL	37	38.9
	UNEMPLOYED	30	31.6

**TABLE 2: MEDICATIONS USED BY THE PARTICIPANTS IN THE STUDY**

NAME	NUMBER	PERCENTAGE	NO. OF DROPS PER DAY
TIMOLOL MALEATE 0.5%	24	25.2	2
Brimonidine tartarate	7	7.3	3
Latanoprost	6	6.3	1
Travoprost	5	5.2	1
Timolol and dorzolamide	5	5.2	3
Dorzolamide	14	14.7	3
Brinzolamide	9	9.4	3
Timolol and Brimonidine	15	15.7	2
Brimonidine and brinzolamide	10	10.5	2



**Figure 1:** Proportion of compliant patients

Missing of dosage in the previous two weeks was considered as non-compliant with regimen. Results showed that 28 out of 95 patients, (29.4%) were non-compliant to the drug regime.

**TABLE 3: REASONS FOR MISSING THE DOSE**

REASON	Number, (%)
Forgetfulness	10, (35.7)
Medication got over	4, (14.2)
Cost	1, (3.5)
Side effects	5, (17.8)
Ignorance	6, (21.4)
Inability to instil the drops	2, (7.1)

## DISCUSSION

Patients with glaucoma are on a long term therapy with topical medication and these patients are often asymptomatic. Hence the realization of importance of adhering to prescription is ignored<sup>2</sup>. In this study, total 95 patients using topical anti glaucoma medication were interviewed with a questionnaire to assess the lack of adherence to prescribed treatment in a tertiary care hospital in Madikeri. It was found that 29.4% of the patients showed non compliance by missing the medication doses. The older age group of 60-79 years showed more noncompliance compared to the rest. The most common reason cited by the patients for missing the dose was-forgetfulness (35.7%). Other common reasons that were noted were ignorance (21.4%) and the side effects of the drugs (17.8%). Ignorance becomes a very common issue as patient cannot observe immediate improvement of vision after starting the medication when dealing with glaucoma. It becomes imperative to look for such patients and explain the nature of the disease and need for treatment to them. The side effects that particularly affect glaucoma patients are redness, burning and symptoms of dry eye, this also can result in skipping the doses. Although the cost of glaucoma medication is usually considered quite high, cost was not found to be a significant factor in affecting the compliance in our study (3.5%). Older patients find it difficult to instill the drops in the absence of a caregiver or due to age related problems; therefore inability to

administer the drops was also noted as a reason for non-adherence. No significant differences were found in the compliance with regard to gender ( $p = 0.88$ ), level of education ( $p = 0.32$ ) or occupation ( $p = 0.12$ ). In our study the frequency of drops per day was also not found to be a significant factor affecting compliance. Some studies like that by Onyinye *et al.* found that multiple drug therapy and frequency reduces the compliance In a study conducted in North India by Rajurkar *et al.*, the level of non-compliance was found to be 49%. They also found that forgetfulness and cost were two major factors for non-compliance in the study population.<sup>2</sup> In a similar study that evaluated the problems in using glaucoma medication in South India, 42% reported with problems in instilling the drops, and 6% showed on compliance.<sup>(3)</sup> A study in Oman by Khandekar *et al.* found 75.2% of non-compliance.<sup>4</sup>

## CONCLUSION

In glaucoma patients, adherence to topical antiglaucoma medications is a major challenge. As antiglaucoma therapy has to be used for lifelong and requires continuous care, awareness has to be created regarding the consequences of missing their medication and the importance of adhering to prescribed regimens. Different aspects about the cost of the medication, drug usage frequency, and side effects has to be considered and not just intraocular pressure control. Complete understanding of these factors and good counseling of the patient and their attenders can definitely improve the compliance of such patients and therefore the success of the treatment.

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