



**ORIGINAL RESEARCH PAPER**

**Ophthalmology**

**TIMOLOL IN GLAUCOMA: REPORT FROM A TERTIARY CARE HOSPITAL**

**KEY WORDS:** Glaucoma, Blindness, Timolol, Efficacy

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**ABSTRACT**

Glaucoma is the cause for 8.0% cases of preventable blindness cases as per lancet report of 2017. The disease is divided primarily into primary and secondary types, of which the commonest being primary with no exact etiology. Despite availability of more efficacious glaucoma medications with few side effects and findings of clinical trials underscoring the importance of intraocular pressure reduction in POAG patients, many patients with POAG continue to go untreated. Retrospective observational study where consecutive cases of Glaucoma treated at the department of Ophthalmology from January 2014 to December 2018 were analyzed for demographic profiles, diagnosis on type of glaucoma, treatment with Timolol alone or in combination. The most common diagnosis was Primary Open Angle Glaucoma found in 123 patients. Drug treatment with Timolol alone accounted for 59 cases (11.21 %) of the total cases treated for glaucoma. To promote patient adherence, Timolol is also used in combination with other drugs to lower intraocular tension.

**INTRODUCTION**

Glaucoma is a group of ocular diseases which damages the optic nerve with raised intraocular pressure being the most common risk factor which can lead to vision loss and blindness. It is generally, but not necessarily, associated with raised (> 21 mm Hg) intraocular pressure (IOP). A sustained increased in IOP may be due to increased formation of the aqueous humour. Bilateral blindness due to primary glaucoma is estimated at 11 million worldwide by 2020.<sup>1,2</sup> Among the preventable blindness, Glaucoma accounts 8.0% cases as per the Vision Loss Expert Group of the Global Burden of Disease Study, Lancet report of 2017.<sup>3</sup> The disease is divided primarily into primary and secondary types, of which the commonest being primary with no exact etiology. Despite availability of more efficacious glaucoma medications with few side effects and findings of clinical trials underscoring the importance of intraocular pressure reduction in POAG patients, many patients with POAG continue to go untreated. Studies done on relationship with patient's race, problems in using Glaucoma medications and adherence showed that hispanics and asians were less likely to receive treatment than the whites.<sup>4, 5</sup> Drug utilization pattern in glaucoma patients need to be evaluated from time to time so as to increase therapeutic efficacy and decrease adverse effects.<sup>6,7</sup>

raphic profile of Glaucoma treated with Timolol as there are few studies in this part of the country.

**METHODOLOGY**

This is a retrospective observational study where consecutive cases of Glaucoma treated at the department of Ophthalmology in a tertiary care hospital in Northeast India from January 2014 to December 2018 were analyzed for demographic profiles, diagnosis on type of glaucoma, treatment with Timolol alone or in combination.

**RESULTS**

The results of this observational study showed that the total number of patients treated for Glaucoma were five hundred twenty-six only (n=526). The valid percentage in sex distribution was female 38% and male 62%. The most common diagnosis was Primary Open Angle Glaucoma found in 123 patients. Drug treatment with Timolol alone accounted for 59 cases (11.21 %) of the total cases treated for glaucoma. Combination treatment with Timolol and Travoprost, Timolol and Brimonidine, Timolol and Bimatoprost accounts for about 19 (3.6%) patients, 62 (11.78%) patients and 5 (0.9%) patients respectively as shown in Table 1.

Hence, the novelty of this report is to generate the demog

**Table 1: Drug Treatment with Timolol in Glaucoma Patients**

Diagnosis	Timolol 5mg/ml	Timolol 5mg/ml + Brimo nidine 1mg/ml	Timolol 5mg/ml + Bimatoprost 0.3mg/ml	Timolol 5mg/ml + Travoprost 0.04mg/ml
POAG	19	7	2	9
PACG	8	16	1	6
Mixed Glaucoma	-	1	-	-
Ocular HTN	6	-	-	-

Secondary Glaucoma (ACG) + NVG		10	-	-
Normal Tension Glaucoma	5	-	-	2
Secondary Glaucoma	9	1	-	1
CACG		3	-	-
Traumatic glaucoma	3	-	-	-

**CONCLUSION**

Timolol, a  $\beta$ 2 adrenergic antagonist, is the oldest and most commonly preferred drugs in the treatment of glaucoma with proven clinical efficacy. To promote patient adherence, the drug is also used in combination with other drugs to lower intraocular tension. Trials using fixed combinations of Timolol and Bimatoprost have showed better efficacy with improved quality of life than single drug use of Timolol. Another fixed drug regimen of Travoprost with Timolol has also shown good results with better patient compliance.

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