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KEY WORDS: Primary glaucoma, angle closure glaucoma, open angle glaucoma, beta blockers

DRUG UTILIZATION STUDY IN PRIMARY GLAUCOMA PATIENTS

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ABSTRACT

Objective: To evaluate prescription patterns for patients seeking consultation for various types and subtypes of primary glaucoma

Methods: It was an observational study of one year duration from March 2016 to February 2017. All primary glaucoma's visiting the eye out patient department was included. Their demographic data clinical findings and common group of drugs prescribed were tabulated

Results: Out of 100 patients ,60 were males and 40 females Primary open angle glaucoma was found to be the most common [55%], followed by primary angle closure glaucoma [45%] The common group drugs prescribed included beta blockers followed by carbonic anhydrase inhibitors prostaglandin f2 analogue a2 agonist and cholinergic agonist

Conclusion: In primary the most common subtype was primary open angle glaucoma followed by angle closure glaucoma, beta blockers were the most common group of drugs prescribed

INTRODUCTION

Glaucoma is a chronic progressive optic neuropathy caused by a group of ocular conditions, which lead to damage of the optic nerve with loss of visual function. It is generally but not necessarily associated with raised [>21mmHg] intraocular pressure It is the second leading cause of preventable blindness with 11.2 million persons above 40 years suffering from glaucoma. As per the national survey on blindness [1999-2002 govt of India report 2002] glaucoma is responsible for 6% cases of blindness in more than 50years population. Globally primary open glaucoma is more prevalent than primary angle closure glaucoma and is responsible for around three fourths of all glaucoma cases Many groups of drugs are available to treat glaucoma in addition to surgical options Prostaglandin analogues have superseded beta blockers as the primary modality of treatment for primary open angle glaucoma because of better patient compliance and lesser adverse effects On the other hand treatment of angle closure glaucoma includes vigorous therapy employing various measures to reduce IOP starting with Intravenous 20% mannitol, followed by oral acetazolamide, topical miotics and beta blocker

AIM OF THE STUDY

The ophthalmology outpatient department [OPD] of our hospital receives an average of 100 to 150 patients daily with a large number of them suffering from glaucoma. This study was conducted to ascertain the types of primary glaucoma patients visiting the ophthalmology OPD, the common groups of drugs prescribed for them and analyse prescription orders for rationality, legibility and completeness

MATERIALS AND METHODS

A cross-sectional study of 100 cases of primary glaucoma who attended the department of ophthalmology, Government Villupuram Medical College & Hospital, Villupuram were taken for the study. Period of study from March 2016 to February 2017

INCLUSION CRITERIA

1. Patients diagnosed with primary glaucoma
2. Patients with occludable angle, IOP>21mm of Hg on two or more separate occasions and or optic disc changes suggestive of glaucoma and or visual field changes

EXCLUSION CRITERIA;

1.Cases of secondary glaucoma
2 .Follow up patients

Observation

A total of 100 glaucoma patients were enrolled in the study and analysed .The majority of patients attending ophthalmology OPD were adults [40-60years],The proportion of male was higher[55%] as compared to females [45%] table1

Table1: Demographic profile of primary glaucoma patients

Parameters	Frequency	Percentage
Age in years		
<40	15	15%
40-60	55	55%
>60	30	30%
Total	100	100%
GENDER		
Males	55	55%
Females	45	45%
Total	100	100%

The disease pattern seen was variable with POAG being the most common type of glaucoma 52% constituting of the total cases followed by PACG 45% [which included CACG23%,N SAACG20%,AACG2%] and NTG table2

Table 2: Distribution and Types of glaucoma

Type of glaucoma	Frequency	Percentage
POAG	52	52%
CACG	23	23%
SAACG	20	20%
AACG	2	2%
NTG	3	3%
Total	100	100%

POAG primary open angle glaucoma, CACG chronic angle closure glaucoma, SAACG sub acute angle closure glaucoma, AACG acute angle closure glaucoma, NTG normal tension glaucoma Amongst the medication, beta blockers were prescribed the most [38.12%] followed by carbonic anhydrase inhibitors and prostaglandin analogue [14.36]. The less commonly prescribed medicine were a2 agonist, cholinergic drugs, glycerol [table3]

Table 3: Total categories of antiglaucoma drugs prescribed [n 202]

GROUP	FREQUENCY	PERCENTAGE
Beta blocker	77	38.12%
Alpha 2 agonist	3	01.48%
Carbonic anhydrase inhibitors	29	14.36%
Cholinergic agonist	3	01.48%

Prostaglandin analogue	29	14.36%
Hyperosmotic agents	4	01.98%
Fixed dose combination	57	28.22%
Total	202	100%

The pattern of drug prescription in various subtypes of glaucoma is shown in table 4

Table 4: Pattern of drug usage in various types of glaucoma

Drug name	POAG	CACG	AACG	SAACG	NTG
Acetozolamide	1.98%	2.97%	1.98%	5.44%	00
Betaoxalol	6.93%	2.47%	0.49%	1.48%	00
Bimatoprost	3.96%	4.95%	0.99%	1.48%	1.48%
Brimonidine	1.48%	00	00	00	0.49%
Brinzolamide	1.48%	00	00	00	00
Timolol	15.34%	5.94%	00	3.96%	0.99%
Brimonidine+Timolol	9.40%	3.96%	0.99%	5.94%	0.49%
Bimatoprost+Timolol	2.97%	2.97%	00	00	00
Pilocarpine	00	00	0.49%	00	00
Glycerol	00	00	00	1.98%	00

Of all the medication prescribed 28.22% were fixed dose combination , The maximum numbers of prescription were written for a duration of 14 days [37.93%] followed by 21 days [31.89%], 7 days [29.31%] 30 days [6.03%] and 90 days [2.58%]

Most of the medications prescribed were given through the Topical route [86.20%] in the form of eye drops, followed by the oral route in the form of tablets and syrups [13.79%] Drugs prescribed by generic names were present in 3.44% of the prescription Almost 81.77% of the medication were prescribed in the frequency of twice a day, 11.33% medication were to be administered immediately, 4.43% were to be administered once a day and 2.46% thrice day

Discussion:

In our study , the majority of patients attending the ophthalmology OPD were in the age group of 40 -60 years , The proportion of male was higher [55%] as compared to female [45%] in our study Primary open angle glaucoma was found to be most common glaucoma [52%] in our region followed by primary angle closure glaucoma [45%]

As far as the treatment pattern is concerned beta blockers [38.12%] were the most commonly prescribed medication and amongst the beta blockers, Timolol was prescribed the most [67.53%] followed by betaxolol [32.46] carbonic anhydrase inhibitors and prostaglandin analogue [bimatoprost] were the second most common medication 14.36%] of all the drugs prescribed in our study followed by alpha 2 agonist [brimonidine] and cholinergic agonist [pilocarpine]

The duration of treatment was mentioned in 96% of the prescription while the frequency of drug administration was recorded for 99% of the total drugs prescribed. The dosage forms were mentioned in 97% of the prescription

Conclusion:

This study was an attempt to assess the prevalence of various types of glaucoma in our region and the drug prescribing patterns, primary open angle glaucoma was found to be the most prevalent type of glaucoma in this region followed by primary angle closure glaucoma and normal tension glaucoma, Topical beta blockers eye drops were the most commonly prescribed drugs, overall rational prescribing was observed with minimal errors, Necessary feedbacks were provided in areas like generic prescribing, mention of total duration of drug administration

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