

Reported medication adherence by glaucoma patients in a Nigeria hospital

Abstract

Introduction: Glaucoma is a chronic disease necessitating a lifelong treatment in order to prevent the irreversible blindness occurrence. Non adherence to medical treatments by glaucoma patients can lead to resultant visual impairment, blindness, and disabilities. The aim of this study is to determine the adherence to medication glaucoma and identify factors responsible for non-adherence in patients attended to in our hospital.

Methods: A cross-sectional study was conducted from March 2018 to December 2018 at Ekiti state university teaching hospital, Ado Ekiti. Consecutive patients with glaucoma, aged 18 years or above, who have been on at least one topical glaucoma medication for at least six months and were attending the glaucoma clinic during the study period were included. A questionnaire was used to gather data about patients' demographics and factors affecting adherence to medical treatments. Evaluation of the patients for adherence to glaucoma medication was done. Results were analyzed using SPSS version 18. Descriptive statistics and chi-square were used.

Results: A total 338 Glaucoma patients were enrolled for the study, 245(72.5%) were adherent, while 93 (27.5%) patients were non adherent to glaucoma therapy. Non adherence was associated with finance/cost of medication ($P=0.02$), forgetfulness ($P=0.01$) and side effects of drops ($P=0.01$). Other barriers were difficulty with drop administration ($P=0.02$), older age ($P=0.01$), advanced stage of glaucoma ($P=0.03$), longer frequency of follow up ($P=0.01$) However, Sex ($P=0.53$), level of education ($P=0.9$), and marital status ($P=0.81$) were not statistically significantly associated with non-adherence to anti-glaucoma drug treatment.

Conclusion: Almost one third of the studied patients were non adherent to medication. Patient education and adequate counseling may help in improving the patients' adherence to glaucoma medications.

Keyword: glaucoma, visual impairment, medication adherence, patient education

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Introduction

Glaucoma is a chronic disease necessitating a lifelong treatment in order to prevent the occurrence of irreversible blindness.¹ Glaucoma is the second leading cause of blindness in Nigeria² and the leading cause of irreversible blindness globally.³ The primary objective of glaucoma therapy is to prevent progressive vision loss and blindness. Lowering of intraocular pressure (IOP) is the only proven strategy that prevents the risk of glaucoma progression.^{4,5} Medical therapy, laser procedures, and incisional surgical treatment are reasonable options for the initial treatment of glaucoma (lowering intraocular pressure) and most patients initially receive topical ocular hypotensive drops.⁶ In the majority of cases topical therapy is beneficial if administered correctly. Poor patient adherence to chronic medical therapy has been well documented across the disease spectrum over the past several decades.⁶⁻⁸ Non adherences to medical treatments by glaucoma patients may lead to resultant visual impairment, blindness, and disabilities. Therefore, the outcome of therapy relies heavily on patient adherence to the treatment regimen.⁷ Successful outcomes of medical treatment for glaucoma requires proper and daily use of medication to prevent disease progression. According to the World Health Organization (WHO), adherence to long-term therapies among patients suffering from chronic diseases in the general population

is around 50% and is much lower in developing countries.⁸ Non-adherence among glaucoma patients has been reported to range as high as 80%.⁹ Patients with poor adherence to medication have worse outcomes with a higher rate of visual loss and increase health care costs.¹⁰ Adherence is defined as the degree to which a patient follows the instructions to take a prescribed treatment during a defined period of time.¹¹

In a hospital based study conducted in Ethiopia, 67.5% patients were non adherent to glaucoma therapy.⁶ Non adherence was associated with older age, advanced stage of glaucoma, longer frequency of follow up, and financial problem.⁶ Furthermore, in another hospital based study in Brazil, the rate of adherence to the glaucoma topical therapy was 54%, the age and number of drops and quality of vision were statistically significant for the inappropriate use of the therapy.¹² In a study of self-reported adherence rates in glaucoma patients in Southwest Nigeria,¹³ 27.2% of the study population reported 100% adherence while 72.8% were non-adherent. The identified factors for non-adherence were the inconvenience of using eye drops which disrupt daily routines, forgetfulness, and cost and lack of availability of drugs.¹³ Studies reported different levels of adherence to treatment; Schwartz and Quigley in a systematic review reported that 24% to 98% of patients in different studies are

adhering to prescribed treatments.¹⁴ Evidence showed that effective medical treatment of glaucoma can prevent up to 50% of blindness, while failure to comply with glaucoma therapy is a serious factor in the progression of glaucoma.¹⁵ Therefore, considering the crucial importance of adherence to medications in patients with glaucoma, identifying the causes of non-adherence can help a healthcare team to improve care plans and preserve patients' vision.¹⁰ The aim of this study is to determine the adherence to medication by glaucoma patients and identify factors associated with non-adherence in patients attended to in our hospital.

Methods

A cross-sectional study was conducted from March 2018 to Dec 2018 at Ekiti State university teaching hospital, Ado Ekiti. Consecutive patients diagnosed with glaucoma, aged 18 years and above, who have been on at least one topical glaucoma medication for a minimum of six months and were attending the glaucoma clinic during the study period were included. A questionnaire was used to gather data about patients' demographics, level of education, adherence to antiglaucoma eyedrops, number of eyedrops used, and factors affecting adherence to medical treatments. The Morisky Medication Adherence Scale¹⁶ was adapted, validated and used to evaluate the adherence to glaucoma medication. The questionnaire used for this study presented the Morisky scale that consists of 8 questions with dichotomous responses (yes/no), and the last with 5 answers that are: "never, hardly ever, sometimes often and always"¹²

Morisky medication adherence scale (MMAS-8)

1. Do you sometimes forget instilling your glaucoma medication? (1) Yes (2) No
2. In the last two weeks, was there some day you forgot instilling your eyedrops? (1) Yes (2) No
3. Have you ever stopped instilling your glaucoma eyedrops because you were feeling worse without telling your doctor? (1) Yes (2) No
4. When you travel or leave home, do you sometimes forget to take your eyedrops? (1) Yes (2) No
5. Did you instill your eyedrops yesterday? (1) Yes (2) No
6. When you feel better and feel that your eye problem is controlled, do you sometimes avoid instilling your eyedrops? (1) Yes (2) No
7. Have you ever felt bothered by forgetting any dose, forgetting to instill your eyedrops? (1) Yes (2) No
8. How often do you forget instilling these eyedrops? (1) Never (2) Hardly ever (3) Sometimes (4) Frequently (5) Always

Scoring and interpretation

Response from questions 1 to 4 scores 1 point if it is negative. Question 5 is however reversed, if the response is positive, the score is 1. Questions 6 & 7 are scored like question 1-4. Question 8, which is the last, is scored: 1.0, 0.75, 0.5 and 0.25 according to the response from (1-5).

Interpretation

A score between 0 and 5.75 is considered Non adherent while a score between 6 and 8 is classified as Adherent¹⁶ Results were analyzed using SPSS version 18. Descriptive statistics and chi-square were used. p value<0.05 was significant.+

Result

The factors associated with non-adherence are; finance/cost of drugs 200(59.2%) (Tables 1&2), longer follow up 42(12.4%), advanced stage of glaucoma 36 (10.7%), side effect of drugs 29(8.6%) Old age 16 (4.7%), forgetfulness 15(4.4%) (Figures 1&2).

Table 1 Age and sex distribution of glaucoma patients, majority of the patients are below 60years (productive age group) and female preponderance

| Age range (years) | Male n(%) | Female (%) | Total |
|-------------------|-------------|-------------|-----------|
| 0-20 years | 11(3.3) | 9(2.7) | 20(6.0) |
| 21-40years | 29(8.6) | 31(9.2) | 60(17.8) |
| 41-60 years | 73(21.6) | 81(23.9) | 154(45.5) |
| 61-80 years | 40(11.7) | 42(12.4) | 82(24.1) |
| >81years | 10(3.0) | 12(3.6) | 22(6.6) |
| Total | 163 (48.2%) | 175 (51.8%) | 338(100%) |

Table 2 Occupation of respondents

| Occupation | n | % |
|-----------------|-----|------|
| Unemployed | 10 | 2.9 |
| Civil servant | 52 | 15.4 |
| Farmer | 89 | 26.4 |
| Artisans | 54 | 15.9 |
| Student | 32 | 9.5 |
| Trader/Business | 101 | 29.9 |
| Total | 338 | 100% |

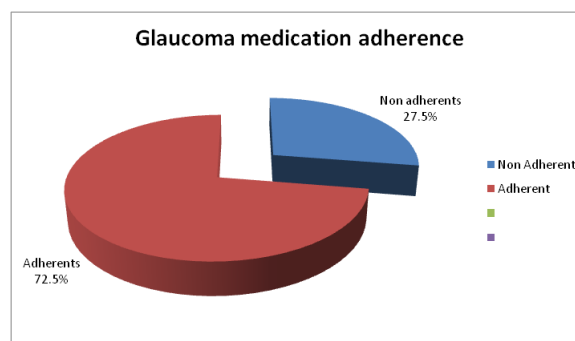


Figure 1 Glaucoma Medication Adherence, 245(72.5%) of the patients were adherent to glaucoma medications.

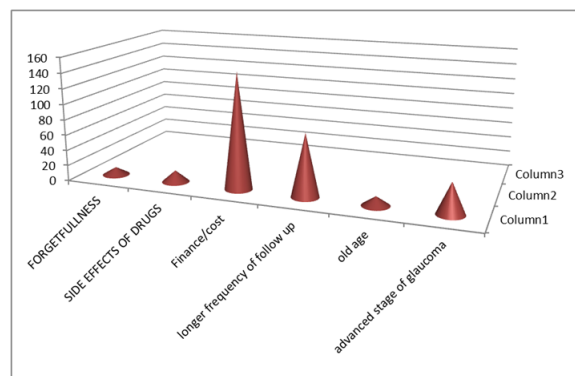


Figure 2 Factors associated with non adherence with glaucoma medication.

Discussion

It is important to emphasize that this study is based on patients' reported medication adherence attending an eye clinic, although the patients' report does not usually correlates to compliance, however, the data obtained can serve as templates for eye care planning and health education to improve patients' vision. Adherence to medication use is generally needed to stop or slow the progression of chronic diseases. Adherence to glaucoma medications reduces the likelihood of progressive visual loss and blindness. In this study, most of the patients are below 60years (productive age group) and there is a slight female preponderance. This is similar to earlier reports in South East Nigeria.¹⁷ This showed that glaucoma can affect the productive age group of a nation thereby having a negative impact on National economy. Educational status of the patients is expected to aid their understanding of the nature of the disease and promote compliance to medication. Furthermore, the occupation of the patients, when not so demanding in terms of time is expected to allow the patients to be adherent to the medication regimen and may influence positively the ability to procure the medication. However, in this study, more than half of the study population is traders and farmers and this does not influence their medication adherence, this is similar to a report by Onakoya and Mbadugha.¹³

72.5% of the patients in this study scored between 6 and 8 making them to be classified as adherent to glaucoma medication while 27.5% score between 0 and 5.75, classifying them as non-adherent to glaucoma medication. This is at variance with the Ethiopian study where a higher proportion of their study population 67.5% was non adherent. The reason for this disparity may be due to the fact that some factors such as clinic attendance, number of eyedrops use and number of years of treatment by the patients were considered which we did not consider in our study. Various factors have been identified by different authors to be responsible for non-adherence. Lack of finance and high cost of antiglaucoma drugs was the commonest barrier to adherence to medication (statistically significant). Other factors such as forgetfulness, old age and advance nature of disease as well as longer frequency of follow up were findings in our study which was similarly reported by other authors with varying levels of significance.^{6, 8, 10, 13} These identified factors should therefore be the core message of counseling and health education given to glaucoma patients with a view to curbing the menace of irreversible blindness which may arise from non-adherence. In general, economic condition of patient is a major limiting factor for access to healthcare globally.¹⁸ This is usually worse in developing countries. In this study, 128 (37.8%) of cases who mentioned financial hardship in obtaining medications were non-adherent and was statistically significant ($P = 0.001$). This means that cost of medication and financial capability of the patients should always be considered in deciding the mode of antiglaucoma therapy to be recommended.

Conclusion

Almost one third of the studied patients were non adherent to medication, this is an important clinical problem in the management of glaucoma. Patient education and adequate counseling may help in improving the patients' adherence to glaucoma medications.

Acknowledgments

None.

Conflicts of interest

Author declares that there is no conflict of interest.

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