

Awareness Among Glaucoma Patients

Glokom Hastalarında Farkındalık

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ABSTRACT

Purpose: To assess the awareness of glaucoma among glaucoma patients.

Materials and Methods: Seventy-eight patients with primary open-angle glaucoma were administered a questionnaire to assess their awareness of glaucoma. Items included sociodemographics, knowledge about glaucoma and its treatment, compliance with therapy and need for information.

Results: The mean knowledge score was 52.4 ± 18 . Half of the patients had a score lower than 50. Ninety-one percent of the patients knew glaucoma could cause blindness, 64.1% stated that it caused visual field defects and 26.9% believed that it was a curable disease. Of 78 patients, 65.4% said that the chance of having glaucoma was higher if a family member had glaucoma, 24.4% were non-compliant with glaucoma treatment and 24.4% did not know their last intraocular pressure measurement. Sixteen percent of patients did not know whether the medications had any side-effects. Males, younger patients and the patients with family history for glaucoma had better scores of knowledge but the difference was not significant. Education and being aware of the names of the medications was significantly associated with knowledge of glaucoma. Location, working status, duration of glaucoma, the level of intraocular pressure, compliance with the treatment and the need for information about glaucoma were not significantly associated with knowledge of glaucoma.

Conclusions: Knowledge about glaucoma is inadequate in glaucoma patients. Increased knowledge may improve awareness of glaucoma but compliance with medication is based on not only knowledge but also behavioral aspects which should also be supported.

Key Words: Awareness, compliance, glaucoma.

ÖZ

Amaç: Glokom hastalarında glokomla ilgili farkındalık durumunun değerlendirilmesi

Gereç ve Yöntem: Glokomda farkındalık düzeyinin değerlendirilmesi amacıyla 78 primer açık açılı glokom hastasına anket uygulandı. Anket, sosyodemografik bulgular, glokom ve tedavisi ile ilgili bilgi, tedaviye uyum ve bilgi gereksinimi konularını içermektedir.

Bulgular: Ortalama bilgi skoru 52.4 ± 18 saptandı. Hastaların yarısının skoru 50'nin altındaydı. Hastaların %91'i glokomun körlüğe, %64.1'i görme alanı defektine sebep olduğunu, %26.9'u ise glokomun iyileşebilen bir hastalık olduğunu belirtti. Hastaların %65.4'ü aile bireylerinde glokom varsa, glokom ortaya çıkma ihtimalinin daha yüksek olduğunu, %24.4'ü glokom tedavisine uymadığını belirtti, %24.4'ü son göz içi basınç değerini hatırlamıyordu. Hastaların %16'sı kullandıkları ilaçların yan etkisi olup olmadığını bilmiyordu. İstatistiksel olarak anlamlı olmamakla birlikte erkeklerin, gençlerin ve ailede glokom öyküsü bulunanların bilgi skorlarının daha yüksek olduğu görüldü. Kullanılan ilaç isimlerinin bilinme oranının ve eğitim düzeyinin, glokom bilgisi düzeyiyle anlamlı bir ilişkisi olduğu izlendi. Yerleşim yeri, çalışma durumu, glokom süresi, göz içi basınç düzeyi, tedaviye uyum ve glokomla bilgi gereksinimi ile glokom bilgi düzeyi arasında anlamlı bir ilişki saptanmadı.

Sonuç: Glokom hastalarında glokomla ilgili bilgi düzeyi yeterli değildir. Bilgi artışı, glokomla ilgili farkındalığı artırabilir ancak tedaviye uyum sadece bilgiyle ilişkili değildir. Hastaların davranışsal faktörler açısından da desteklenmesi gereklidir.

Anahtar Kelimeler: Farkındalık, uyum, glokom.

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INTRODUCTION

Glaucoma is one of the leading causes of blindness all over the world.¹ Early diagnosis and treatment is sight saving in glaucoma but as it is mainly asymptomatic, late presentation is common. Dandona et al., reported that 51.9% of the patients had severe glaucomatous damage at presentation.²

There have been few studies demonstrating the association of late presentation of glaucoma with social factors and poor awareness.³⁻⁵ Screening programs are valuable efforts in term of prevention blindness secondary to glaucoma but if patients show poor compliance to follow-up care or glaucoma medication, the efforts won't be justified. Poor awareness and compliance about glaucoma still seem to be a problem for many countries.⁵⁻¹¹

Our aim in this study is to assess the awareness of glaucoma among glaucoma patients.

MATERIALS AND METHODS

The study enrolled 78 consecutive patients with primary open-angle glaucoma who were evaluated at the Department of Ophthalmology, University of Pamukkale. In order to learn the sociodemographics of the patients and to assess their awareness of glaucoma, each of the patients was administered a questionnaire after providing oral consent.

The questionnaires were divided into three parts, and the first part of the questionnaire included questions about sociodemographic status such as their gender, age, educational level, working status, and family history. The second part of the questionnaire contained 25 questions to assess their knowledge of glaucoma with possible answers "yes", "no" or "no opinion" (Appendix). Each correct answer provided 4 points and a "knowledge score" was calculated for each patient so that the lowest and highest possible scores are set at 0 and 100 points, respectively. The third part consisted of questions about their practice and compliance with treatment. A patient was regarded as non-compliant if he/she admitted to have missed one dose or more.

A member of the nursing staff was always available to assist the patients with the questionnaire. The study was conducted after institutional review board approval was obtained. One way ANOVA, Pearson's correlation and T-test were used for statistical analysis by using SPSS version 11. $P < 0.05$ was considered significant.

RESULTS

A total of 78 patients (38 men and 40 women) participated in the study. Fourteen percent of the patients were under 50 years of age and 17.9% were over 70. Thirty-five percent of the patients had an elementary school level education and 24.3% had better than high school level of education (Table). Seventy-five percent of the patients were located in urban setting.

Table: Data regarding the sociodemographics and knowledge scores of glaucoma in glaucoma patients.

	n=78	%
Gender		
Female	40	51.2
Male	38	48.7
Age (years)		
<50	11	14.1
50-59	29	37.1
60-69	24	30.7
>70	14	17.9
Marital status		
Single	16	3.7
Married	375	85.8
Widowed	39	8.9
Divorced	7	1.6
Educational level		
Illiterate/literate	8	10.2
Elementary school	28	35.8
Middle/high school	23	29.4
University	19	24.3
Work status		
Working	21	26.9
Not working	57	73.1
• House wife	22	28.2
• Not working due to disability	2	2.6
• Unemployed	1	1.3
• Retired	27	34.6
• Other	26	33.3
Knowledge score of glaucoma		
0-49	39	50
50-74	29	37.1
75-100	10	12.8

The mean duration of glaucoma was 6.5 ± 6.1 years. Of 78 patients, 27 (34.6%) had a family history of glaucoma and 4 (5.1%) had an intraocular pressure over 19 mmHg.

The mean knowledge score was 52.4 ± 18 . The lowest score was 0 (1 patient) and the highest score was 100 (1 patient). Half of the patients had a score lower than 50. Forty-nine (62.8%) patients told that glaucoma is associated with increased intraocular pressure and 38 (48.7%) knew the normal values of intraocular pressure. Seventy-one (91%) knew it could cause blindness, 50 (64.1%) stated that glaucoma caused visual field defects and 21 (26.9%) believed that it was a curable disease. Twenty-eight (35.9%) patients stated that visual impairment secondary to glaucoma could be repaired by treatment whereas a third of the patients had no opinion. Thirteen (16.7%) patients said that glaucoma was a painful disease whereas 64 (82.1%) told that glaucoma could exist without causing any complaints. Forty-six (59%) knew that glaucoma increased by aging, 51 (65.4%) said that the chance of having glaucoma was higher if a family member had glaucoma.

Of 78 patients, 19 (24.4%) were non-compliant with glaucoma treatment and 19 (24.4%) did not know their last intraocular pressure measurement. Sixty-seven (85.9%) patients knew the names of the anti-glaucomatous drugs they were using, 48 (61.5%) stated that they had problem with instillation of the medication properly, 69 (88.5%) told that they were not pressing on the puncta after instillation and 41 (52.6%) were waiting for a few minutes between two medications. Thirteen (16.7%) patients did not know whether the medications had any side-effects, 19 (24.4%) said that they could not use the medications on a regular basis and 3 (3.8%) told that they did not have regular eye examinations. Thirty-eight (48.7%) patients stated that they informed their internist or cardiologist about their glaucoma medications whereas 41 (52.6%) stated that they informed their ophthalmologist about their drugs for asthma, hypertension or cardiac diseases. Fifty-nine (75.6%) patients told that they would like to have education about glaucoma.

Males, younger patients and the patients with family history for glaucoma had better scores of knowledge but the difference was not significant. Education was significantly associated with knowledge, the patients with higher education had better scores ($p=0.012$). Location (urban or not), work status, duration of glaucoma, the level of intraocular pressure (whether it is regulated or not), knowing the level of intraocular pressure (awareness of the patient), compliance with the treatment and the need for learning more about glaucoma were not significantly associated with knowledge of glaucoma. Being aware of the names of the medications was significantly associated with knowledge of glaucoma ($p=0.013$). The patients, who were aware of the medications they were using, had better scores.

DISCUSSION

Poor awareness of glaucoma is one of the reasons of late presentation of glaucoma. In a study conducted in India, it is reported that lack of education and awareness of glaucoma were major risk factors for late presentation and it might be more important than lack of transportation or access care in terms of regular medical care.¹²

Awareness level of glaucoma has been investigated in different countries. Costa et al., compared awareness of glaucoma in an American and Brazilian glaucoma population and showed significant difference between two groups.¹³ They suggested that the difference was, at least in part, secondary to disparity among educational levels. In a study conducted in India, Gogate et al., reported that the patients who were less educated and older were more likely to have poor awareness and late presentation of glaucoma.⁵ In Netherlands, the effect of educational level on awareness of glaucoma also has been reported by Hoevenaars et al.,¹⁰ They showed that patients from the low socioeconomic group (which was defined as lower level of education) less often knew that

glaucoma is associated with higher intraocular pressure, may be asymptomatic and early detection and treatment will slow down the course of glaucoma. They were also less aware of the fact that a family predisposition is a risk factor for glaucoma. In another study, they reported that the patients recruited from the public sector, which may be accepted as a surrogate measure of socioeconomic status, had a greater risk of being in the lowest quartile of the knowledge score.⁹ Education was also significantly associated with knowledge of glaucoma in our study. The patients with higher education, had better knowledge about glaucoma. Another significant factor positively associated with knowledge of glaucoma in our study was being aware of the medications. The patients, who were aware of the medications they were using, had better knowledge of glaucoma.

The importance of a positive family history of glaucoma in awareness of glaucoma has been reported previously.^{3,14} The patients who had a positive family history had higher awareness of glaucoma.⁵ In our study, the patients with a positive family history for glaucoma had slightly better knowledge than the others. Duration of glaucoma was not significantly associated with knowledge of glaucoma in our study. In the study of Danesh-Meyer et al., they showed that patients with established glaucoma had only slightly greater knowledge than newly diagnosed patients.⁹ In another study, Costa et al., demonstrated that duration of glaucoma was not significantly associated with knowledge about glaucoma.¹³

In our study, 17.9% of the patients did not know that glaucoma can exist without causing any complaints. In the study of Danesh-Meyer et al., 48% of the established glaucoma patients thought that they would have symptoms warning them of disease progression and this ratio was 66% for newly diagnosed patients.⁹ This may be a cause of poor adherence to follow-up visits or non-compliance with treatment. Eighty-six percent of our patients knew that treatment for glaucoma is lifelong; a similar finding has also been reported by Danesh-Meyer et al.,⁹ In our study, 51.3% did not know the normal range of intraocular pressure and 24.4% did not know their last intraocular pressure measurement. In the study of Costa et al., this ratio was 48% and 33% for American glaucoma patients and 80% and 75% respectively for Brazilian glaucoma patients.¹³ In our study, 9% of the patients did not know that glaucoma could cause blindness. This ratio is 8% for American glaucoma patients and 35% for Brazilian glaucoma patients. 13 Familial predisposition of glaucoma was known by 65.4% of our patients, this ratio was 61.7% in American and 7% in Brazilian glaucoma patients.¹³ The ratio of being unaware of the side-effects of the medications were 68%, 61%, 80% and 16.7% respectively in the studies conducted in Brazilia, USA, New Zealand and Turkey (current study).^{9,13} The lack of knowledge of side-effects of treatment may cause them to omit to mention it to their ophthalmologist and a delay in solving the problem.

Previously, Khandekar et al., reported that adequate knowledge about glaucoma was positively associated with compliance.¹⁵ Non-compliance of some type was found in 75.2% of glaucoma patients in their study. However, in our study, 24.4% of the patients were non-compliant with glaucoma treatment and non-compliance was not associated with knowledge level of glaucoma, a similar finding was reported by Hoevenaars et al.,¹⁶ Deokule et al., reported the ratio of non-compliance among glaucoma patients as 23% in a study in UK.¹¹ Non-compliance was found in 24.7%, 14% and 62% of subjects in three different studies conducted in USA and the former showed that non-compliance was strongly related to having fewer visits with an ophthalmologist during the study period.^{7,17,18} This wide variation could be a result of the differences in both the definition of non-compliance and the cultures of which the sample was taken.

In the light of previous findings, knowledge of glaucoma seems as only one factor affecting the compliance with treatment. It has been documented that daily dose frequency, forgetfulness, inconvenience, and unaffordability significantly affected compliance.^{19,20} Tsai et al., categorized the reasons of non-compliance and showed that 49% of these factors were situational/environmental factors such and 32% were about medication regimen.²¹

Communication between physicians and patients was also reported as an another important factor in compliance for glaucoma patients.²⁰ In the study of Sleath et al., nearly 1/5 of the patients stated that they did not have information about their glaucoma medication.²² The time spared by the ophthalmologists for informing the patients about their diseases and medications, might not be sufficient for the patients. It is suggested that nursing staff may contribute to compliance by informing the patients about the treatment of glaucoma.²³

In our study, 59 (75.6%) patients said that they wanted to have education about glaucoma. Pamphlets (38.4%) and having information during the visits (33.3%) were the most preferred methods. Also, in the study of Danesh-Meyer et al., a large proportion of glaucoma and control groups indicated that they would prefer to have information in the form of pamphlets.⁹

The first limitation of our study is its small sample size. The second one is that all our patients were glaucoma patients who were evaluated at a tertiary setting so it may reflect characteristics of the health-conscious patients coming for follow-up.

Briefly, it is clear that knowledge about glaucoma is inadequate. Increased knowledge may improve awareness of glaucoma and by the way contribute to early diagnosis and treatment. On the hand, it is important to emphasize that compliance with medication is based on not only knowledge but also behavioral aspects which should also be supported.

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