

ORIGINAL
INVESTIGATION

Ophthalmopathy Consciousness Level in Graves Patients: Graves Ophthalmopathy

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ABSTRACT

Objective: We aimed to examine the knowledge and consciousness levels of participators about Graves orbitopathy (GO) by conducting an investigation of ophthalmopathy consciousness of Graves patients, providing coordination among all health institutions and ophthalmologists and giving information about the subject to patients.

Materials and Methods: A total of 50 Graves patients applying to the Ondokuz Mayıs University Endocrinology outpatient service were included in the study. Specially prepared questionnaire forms were used for the evaluation. The education levels of the patients were evaluated in four groups as illiterates and graduates of primary school, secondary school-high school, and university.

Results: Overall, 38.8% of the graduates of primary school, 71.4% of the graduates of secondary school-high school, and 63.6% of university graduates had GO consciousness. Although 24% of the patients had this consciousness, they were not going to regular eye check-ups; 86% of the patients had this GO information through their physicians. Also, 46% of the patients were smoking, and it was detected that just half of them were warned about smoking.

Conclusion: It was observed that although the patients who were followed up with Graves were seen by all healthcare centers, they were not adequately informed about eye involvement. Thus, these patients should be informed at the first visit, and regular ophthalmologic examinations should be provided for them.

Key words: Graves disease, graves orbitopathy, cigarette, training

INTRODUCTION

Graves disease is among the most common reasons of thyrotoxicosis, and its incidence varies between the rates of 1-10/100,000 (1). While ophthalmopathy is detected at between the rates of 10%-50% in Graves patients, when imaging methods are used, it may be detected in almost 100% of them (2, 3). The incidence of Graves orbitopathy (GO) peaks at the ages of 50-70, and it occurs more frequently in females than males (K/E: 2-5:1) (4). An increase in the intensity of disease is observed with age. The autoimmune response that is formed against the shared antigen of the thyroid and retro-orbital tissue is responsible for the pathogenesis. Hence, T lymphocyte infiltration and fat tissue hyperplasia develop in the preorbital region. The presence of thyroid-stimulating hormone receptor (TSHR) mRNA expression in retro-orbital fibroblasts supports this view.

Histopathologically, exophthalmos and optic nerve compression in severe cases may develop in association with the connective tissue behind the orbita and the increase in extraocular muscle mass. Fibrosis may form in extraocular muscles in cases with ophthalmopathy at the end stage (2). Advanced age, male gender, smoking, having been implemented with ablative treatment, stress, and high T3 levels before treatment are the factors that precipitate GO. The most important factor among them is smoking. Orbitopathy is seen more frequently in smokers, and the disease has a more severe course. It was detected in a study that the risk of GO increased 7 times. The symptoms of Graves orbitopathy are foreign body sensation, photophobia, and sensation of eye dryness. Pressure sensation and pain behind the eyes may occur. There may be delayed movements in the eyelids, blurred vision, diplopia, decreased color vision, loss of central vision, and ulceration and infection in the cornea when proptosis is advanced.

Endocrinologists and ophthalmologists should follow up Graves orbitopathy together. If the eye complaints and findings indicate GO, then the patient must be referred to an ophthalmologist by the physician who first examined the patient. We aimed to examine the knowledge and consciousness levels of participators about Graves orbitopathy (GO) by conducting an investigation of ophthalmopathy consciousness of Graves patients, providing coordination between all health institutions and ophthalmologists and giving information about the subject to patients.

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MATERIALS and METHODS

Fifty patients diagnosed with Graves disease were included in the study. The assessment forms, specially prepared for the study, were distributed to Graves patients who applied to the endocrinology outpatient clinic between January and March 2012 after obtaining written informed consent from them. The assessment forms included questions about personal features, comorbidity, treatments received, medications taken, and GO consciousness (Table 1). While the eye complaints were questioned, the findings in the clinical activity scores were also questioned, and the results were evaluated accordingly (6). The education levels of the patients were evaluated in four groups as illiterates and graduates of primary school, secondary school-high school, and university.

Statistical analysis

The results were interpreted by evaluation with SPSS for Windows.

RESULTS

The mean age of the patients was 39.4 years (min: 23, max: 63); 21 of the cases were female (42%), and 29 of them were male (58%).

Table 1. Form on eye consciousness of patients diagnosed with graves disease

Name-Surname-Age of the patient:

Education Level:

1. Do you know that Graves disease will affect the eyes?
2. If you know, how did you learn it?
 - a. Physician
 - b. Mass media, like television and papers
 - c. Internet
 - d. Other (neighbor, other relatives of the patients, etc.)
3. Did they tell you at the center where you were diagnosed with Graves disease that you have to get an eye examination?
4. What are the complaints of your eyes?
 - a. Pain behind the eye, pressure sensation
 - b. Eye redness
 - c. Redness in eyelids and distention
 - d. Pain with eye movements
 - e. Dysfunction (reduced eye movements for at least 1-2 months or reduced visual acuity for 1-3 months)
5. Have you had an eye examination considering this?
6. Were you told that your eye was affected from thyroid disease?
7. Did your ophthalmologist initiate treatment?
8. Do you go regularly for eye check-ups?
9. Do you smoke?
10. Were you told the negative effects of smoking?
11. Were you told that it was necessary to quit smoking?

Eighteen of the patients (36%) were primary school graduates, 21 of them (42%) were secondary-high school graduates, and 11 of them were university graduates (22%). It was detected that 7 of the primary school (38.8%), 15 of the secondary-high school (71.4%), and 7 of the university graduates (63.6%) had information that Graves disease was a disease that could affect the eyes. It was learned despite this information that 7 patients (24.1%) did not go to eye check-ups. It was observed that 25 patients (86.2%) got this information from a physician working at any healthcare center, 3 patients got this information from visual and written media, and 1 patient got this information from his circle of friends. When the symptoms were questioned, it was learned that 13 patients (26%) had GO symptoms. It was learned that 5 of the 6 patients (83%) who got information from their physicians that Graves disease could affect the eyes and had eye-related complaints were referred to an ophthalmologist. It was learned that there was exposure in the eyes of 14 of the 27 patients (51.8%) associated with Graves disease. Six of the patients (46%) who were diagnosed with Graves ophthalmopathy were active smokers. It was found that 1 of the 3 of the treated patients was operated on; the other 2 patients initiated lubricant and low-dose steroid topical treatment, and they were called for regular control.

Twenty-three of the patients (46%) were actively smoking. It was found that only 12 patients (52.1%) were warned that smoking could trigger or intensify the orbitopathy. All of the patients having orbitopathy and who were smokers were warned that they had to quit smoking.

DISCUSSION

Graves patients should be followed by the coordination of endocrinologists and ophthalmologists. In Graves orbitopathy, the treatment should be personal and should initiate with the control of thyroid disease. The European Graves Orbitopathy Group (EUGOGO) reached a consensus on the follow-up and treatment approach (7). According to this consensus, the patients who were to be referred to eye centers were determined, and some of those with the mildest symptoms have to be referred to an advanced thyroid-eye clinic (Table 2, 3). It was indicated in a study that even though Graves patients had no symptoms, they had orbitopathy at a rate of 10%-50% (2). In another study, it was shown that this rate was 100% by using advanced imaging methods.

Although mild symptoms in Graves orbitopathy may recover by themselves, medical treatment may be necessary to improve eyelid and visual functions. For almost 10% of patients, advanced treatments, such as systemic glucocorticoids, cyclosporine, or orbital radiotherapy, are necessary. Orbital decompression surgery is used in cases when there is a danger of visual loss or if medical treatment falls short (8). The ophthalmologist should determine the symptoms and findings according to the NOSPECS classification and assess the disease activity by clinical activity score (Table 4, 5) (9). Activity score assessment is important in the choice of treatment. It was observed in our study that 51.8% of the patients were diagnosed with GO in eye clinics that they were referred to; however, they were not informed about its activity and intensity.

Smoking has absolute contraindication in the EUGOGO criteria. There are studies indicating that smoking deteriorates Graves disease and GO (10). There is a relationship between the rate of

Table 2. EUGOGO Graves ophthalmopathy follow-up and treatment consensus

The physician diagnosing the patient may be a general practitioner, family physician, or general internal disease specialist. Unless they have sufficient knowledge and experience in GO treatment, they have to refer the patient to a center having the necessary specialty (mild cases may be excluded).

GO centers have endocrinologists experienced in ophthalmopathy treatment and eye clinics experienced in this field.

The patient has to be brought to a euthyroid state rapidly.

The treatment should not be delayed.

Table 3. Patients being suspected of GO who have to be referred to GO-eye Centers

If any of the following symptoms occurs, the patient has to be referred to a GO-eye center.

Symptoms

- An unexplained visual impairment
- A change in colorful vision quality in one or two eyes
- The patient saying that his eyes pop out of their place

Findings

- Apparent corneal opacity
 - When the eyes are closed, they are able to close completely
- Optic disc swelling
- Situations when referral is necessary but not emergent

If there is any of the following, the patient has to be referred to a GO-eye center without delay.

Symptoms

- Sensitivity to light for the last 1-2 months
- Extreme stinging in the eye for 1 week despite eye drops
- Pain in or behind the eyes for 1-2 months
- Increasing changes in the eye or eyelids for 1-2 months
- The patient's telling that his eye shape changes
- The patient's telling that he sees double

Findings

- Eyelid retraction
- Swelling and redness in eyelids and conjunctiva
- Restriction in eye movements and constant squint development
- Necessity to raise the head for single vision

cigarettes smoked per day and GO development (11). Smoking also affects the prognosis of treatments for GO negatively (12).

In our study, 23 of the patients were smoking actively. It was found out that only 12 patients (52.1%) were warned that smoking could

Table 4. American thyroid association graves ophthalmopathy classification (NOSPECS)

Class	Description
0	No symptoms and findings.
1	No symptoms; there is only spasm in the upper eyelid, eye opening increased.
2	Swelling in the preorbital soft tissue.
3	Proptosis (exophthalmos)
4	Involvement in extraocular eye muscles.
5	Corneal involvement
6	Optic nerve involvement, visual loss in various levels.

Table 5. Clinical activity score (CAS) symptoms and findings

Spontaneous retrobulbar pain
 Pain with eye movements
 Eyelid erythema
 Infection of the conjunctiva
 Chemosis
 Swelling in the caruncle
 Edema or fullness of the eyelid

trigger or intensify the orbitopathy. All of the patients having orbitopathy and who were smokers were warned that they had to quit smoking. Even though this rate overlapped with the EUGOGO criteria and although the patients' awareness was successfully and adequately raised, when the orbitopathy risk in patients with Graves, between 70%-100%, is considered, we are of the opinion that it is necessary to warn all patients to stop smoking.

It may be expected that people having a high level of education attach more importance to regular health controls, since their socioeconomic level and general health consciousness is high. It may be admitted that people who have applied to healthcare institutions compared to those who have not applied have a higher level of health consciousness. For this reason, it may be thought that planning studies that investigate the knowledge level of people about a disease as a field study will be a good strategy. When the relationship between education level and GO consciousness is considered, it is observed, as expected, that consciousness is lower in primary school graduates. For this reason, it is necessary to put special emphasis on raising the awareness of people with a low level of education. In a literature survey, we have not found a study indicating the consciousness levels of patients about Graves disease and GO in our country.

In a study conducted for the purpose of evaluating the effects of training and exercises given to patients with healthy lifestyle behaviors and sleep problems, ophthalmopathy symptoms, sleep, physical activity, dietary habit, spiritual development, relationships among people, and stress management were significantly high compared to the control group. As a result of the study, the effectiveness of training for relieving eye symptoms in GO patients

was emphasized, developing healthy lifestyle behaviors and recovering sleep problems (13). In the psychoanalytic evaluations carried out for Graves orbitopathy patients, it was shown that orbitopathy considerably affected physical and spiritual health and led to stress. It was indicated that this stress level affected the psychology and daily and professional life of patients, depending on the degree of visual loss, orbital disease, and exophthalmos. It was pointed out that there could be a recovery of emotional stress with training on ophthalmopathy and early treatment, and the close relationship between the ophthalmologist and endocrinologist was emphasized.

In our study, that the majority of patients who were aware that eye involvement is associated with Graves disease reached this information through a general practitioner and/or internal disease specialist makes us think that the training and awareness in this respect are sufficient. In our study, it was detected that only 3 patients (6%) got the information about GO through written and visual media. Moreover, 24% of the patients having this information were not under control of an ophthalmologist when the EUGOGO criteria were taken into consideration, making us think that there is an insufficiency in communication between ophthalmologists and endocrinologists, social health policies, and patient training. As a result of the study, we are of the opinion that the rate of recognizing GO as a part of Graves disease is especially low in patients having a low level of education, and in raising awareness, in addition to physician training, media as a significant means of communication and education should play a more active role in training patients.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Samsun Training and Research Hospital.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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Authors' Contributions: Conceived and designed the experiments or case: EKK, EK, RÇ. Performed the experiments or case: EKK, EK, GCE, ÇTB. Analyzed the data: GCE, RÇ. Wrote the paper: EKK. All authors have read and approved the final manuscript.

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