



Ophthalmologic evaluation in geriatric patients: Assessment of consistency between patients' complaints and ocular diagnoses



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ABSTRACT

Purpose: This study aimed to assess the consistency between patients' complaints and their eye diseases.

Design: Cross-sectional study.

Methods:

- Setting: Institutional.
- Study population: 1084 eyes of 544 elderly (≥ 65 years) patients.
- Observation procedure: The eyes of the patients who had only ocular surface complaints were classified as group 1, those who wanted to renew their glasses and had no other complaints were classified as group 2, and those who complained about decrease in vision were classified as group 3.
- Main outcome measures: Frequency of visual impairment and visually important ocular diseases.

Results: The frequencies of at least one newly diagnosed visually important ocular disease were 25.9%, 27.0%, and 45.3% in groups 1, 2, and 3, respectively ($p < 0.001$). The same frequencies were significantly higher in patients >75 years of age compared with the younger group (59.1% vs. 22.0%, $p < 0.001$). Although these values were statistically significant in patients ≤ 75 years of age ($p < 0.001$), they were insignificant in patients >75 years of age according to type of complaints ($p = 0.773$). Patients with diabetes mellitus exhibited significantly lower vision, higher rate of visually important ocular diseases, and higher intraocular pressure readings than patients without diabetes mellitus ($p = 0.009, 0.015, \text{ and } 0.002$, respectively).

Conclusions: Visually important ocular diseases were diagnosed approximately in a quarter of patients who had no complaints about decrease in vision and in more than half of the oldest geriatric patients (>75 years) irrespective of the type of complaints.

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1. Introduction

The population of the world is getting older, and projections show that the percentage of the geriatric population (aged ≥ 65 years) will increase (United Nations, 2015). Worldwide estimates show a 181% increase in the geriatric population from 2010 to 2050 (United Nations, 2015). In line with this growth, projections about the Turkish population indicate an increase in the geriatric population from 7.5% in 2012 to 10.2% in 2023, 20.8% in 2050, and 27.7% in 2075 (Turkish Statistical Institution, 2013). With the

aging of the population, more time and effort will be needed for the management of diseases in the elderly.

Visual acuity is closely associated with the quality of life (Scott et al., 1994). Visual impairment can cause reduced functional status (Lee, Spitzer, & Hays, 1997; West et al., 1997; Bergman and Sjöstrand, 1992), low social contact (Bergman and Sjöstrand, 1992), depression, (Rovner, Zisselman, & Shmuelly-Dulitzki, 1996) falls, and hip fractures (Dargent-Molina et al., 1996; Grisso, Kelsey, & Strom, 1991). With age, visual impairment is observed more frequently (Bergman & Sjöstrand, 2002; Buch, Vinding, & Nielsen, 2001; Hirvelä & Laatikainen, 1995; Attebo, Mitchell, & Smith, 1996; Klein, Klein, Linton, & De Mets, 1991; Tielsch, Sommer, Witt, Katz, & Royall, 1990; Rubin et al., 1997; Salive et al., 1992). Age-related maculopathy (ARM), cataract, and glaucoma are the most frequent

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causes of visual impairment in the elderly, and their prevalence increases with age (Buch et al., 2001; Hirvelä & Laatikainen, 1995; Attebo et al., 1996; Reidy, Minassian, & Vafidis, 1998; Rahmani et al., 1996; Klein, Wang, Klein, Moss, & Meuer, 1995). Early diagnosis, proper treatment, and regular follow up are crucial in these diseases to prevent visual loss and improve the quality of life. Some studies have suggested a considerable amount of undetected, potentially remediable ocular diseases in the elderly community (Reidy et al., 1998; Wormald, Wright, Courtney, Beaumont, & Haines, 1992). Several patients are unaware of their sight-threatening diseases during the early stages or have relatively healthy other eye. In routine ophthalmologic examinations, some sight-threatening diseases can be diagnosed incidentally in patients who have complaints other than visual loss or can be overlooked because of the complaint-based examination by the practitioner.

Multiple population-based studies have been conducted on the prevalence and causes of visual impairment (Buch et al., 2001; Hirvelä & Laatikainen, 1995; Attebo et al., 1996; Klein et al., 1991; Tielsch et al., 1990; Rubin et al., 1997; Salive et al., 1992; Reidy et al., 1998; Rahmani et al., 1996). However, studies about the consistency between patients' complaints and their ocular diseases are lacking. The present study aimed to analyze the profile of the elderly patients admitted to our outpatient ophthalmology clinic, investigate the frequency of sight-threatening diseases, and evaluate the consistency between patients' complaints and ocular diagnosis.

2. Patients and methods

This cross-sectional study recruited 544 elderly patients who were examined as outpatients in the tertiary ophthalmology clinic of Ankara Training and Research Hospital from January 2014 to June 2014. Ethical approval for the study was obtained from the Institutional Review Board of the hospital. The protocol of the study adhered to the tenets of Helsinki Declaration.

The demographic characteristics, current systemic diseases, complaints about each eye, current and previous ocular diseases, and previous ocular surgeries were noted. History was taken simultaneously from patients and their accompanying person when existed. Complaints such as itching, burning, stinging, redness, secretion, and watery eyes were classified as ocular surface complaints. History was obtained by an ophthalmologist (MY), who also conducted the ophthalmological examination.

A complete ophthalmological examination was performed, including best corrected distance visual acuity (BCVA) with subjective refraction via Snellen charts, intraocular pressure

(IOP) measurements with Goldmann applanation tonometer, anterior segment evaluation with slit-lamp biomicroscope, and fundoscopic evaluation with a Volk aspheric +90 dioptre lens. Fundoscopic assessment could not be performed in 40 eyes because of optic media opacities in 26 eyes and patients' denial in 14 eyes. Further ophthalmologic and systemic imaging techniques were used when indicated. All of the findings of both of the eyes were noted in previously prepared standard forms.

Cataract was defined as having any type of lens opacities. (Livingstone, Carson, & Taylor, 1995) Cataract surgery was recommended when the BCVA was ≤ 0.4 and no other pathology caused visual loss. In the patients whose BCVA was ≤ 0.4 and had cataract with an accompanying ocular disease causing visual loss, cataract surgery was also recommended if surgery was considered to provide additional benefit to visual acuity.

Glaucoma diagnosis and classification were made with an algorithm based on the biomicroscopic anterior segment findings, presence of glaucomatous optic disc changes, visual field test findings, retinal nerve fiber layer analyses with optic coherence tomography, measurement of IOP, gonioscopy, and corneal pachymetry.

Age-related maculopathy (ARM) was classified as early ARM and late ARM. Early ARM was diagnosed in eyes that displayed pigment epithelial changes (hypopigmentation or hyperpigmentation) and/or hard or soft drusen but no signs of late ARM. Late ARM was diagnosed in eyes with geographic atrophy (dry type ARM) or exudative age-related macular degeneration (wet type ARM). Other posterior segment pathologies including diabetic retinopathy (DR), epiretinal membrane, macular hole, degenerative myopia, tumors, retinal vascular occlusions, retinal breaks and detachments, and non-glaucomatous optic disc pathologies were recorded.

The eyes of the patients were classified as having visual impairment ($BCVA \leq 0.5$) or no visual impairment ($BCVA > 0.5$). Any type of ocular diseases causing visual impairment or having the potential of severe, irreversible visual loss but actually not causing visual impairment (like early phases of glaucoma, ARM, DR, or retinal vascular occlusions not involving macula) was classified as visually important ocular diseases that need treatment and/or regular follow up. The eyes were also classified according to patients' complaints, age, gender, type of admission to the clinic, and having systemic diseases. Visually important eye disease frequencies were assessed in each group, and statistically significant findings were noted.

Three main classes of eyes were created according to the most frequent complaints. A total of 266 eyes (24.5%) of 133 patients who had "only" ocular surface complaints were classified as group

Table 1
Demographics of the patients.

	No. patients	Age Mean \pm SD, Median (Range)	Previous admissions Mean \pm SD, Median (Range)	Gender		Place of residence				Type of admission			
				male n %	female n %	within the province n %		out of the province n %		alone n %		accompanied n %	
Overall	544	72.65 \pm 5.91 71 (65–92)	2.60 \pm 6.03 1 (0–101)	251 46.1	293 53.9	504 92.7	40 7.3	324 59.6	220 40.4				
Group 1	133	71.88 \pm 5.52 71 (65–85)	2.98 \pm 4.20 2 (0–23)	61 45.9	72 54.1	132 99.2	1 0.7	87 65.4	46 34.6				
Group 2	115	71.47 \pm 5.27 70 (65–82)	2.33 \pm 5.43 1 (0–52)	67 58.3	48 41.7	110 95.7	5 4.3	84 73.0	31 27.0				
Group 3	169	73.95 \pm 6.35 73 (65–92)	2.45 \pm 8.27 1 (0–101)	65 38.5	104 61.5	149 88.2	20 11.8	72 42.6	97 57.4				
p value		<0.001	0.003	0.004		<0.001				<0.001			

Group 1 represents the patients who had ocular surface complaints only; Group 2 represents the patients the patients who only wanted to renew their glasses and had no other complaints.

Group 3 represents the patients who complained about decrease in vision. P values show the significance of difference between group 1, 2 and 3.

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