Original Article / Çalışma - Araştırma

Diagnostic characteristics of geriatric patients admitted to an otorhinolaryngology clinic

Kulak burun boğaz polikliniklerine başvuran geriatrik hastaların tanısal özellikleri

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ABSTRACT

Objectives: This study aims to investigate the otorhinolaryngologic diagnostic characteristics of geriatric patients in terms of age, gender and the season of the year they were admitted in.

Patients and Methods: A total of 2,938 geriatric patients admitted to our Otorhinolaryngology Clinic between January 2012 and June 2014 were included in this study. The patients' charts were examined retrospectively to collect information concerning diagnosis, age, sex, and season at admission. Relationships between diagnoses and other characteristics were analyzed.

Results: Of 2,938 patients, 1,516 were females (mean age, 73.1±7.0 years) and 1,422 were males (mean age, 72.4±6.6 years) (range for all patients, 65-102 years). While impacted cerumen was more frequent in men, dizziness was significantly more frequent in women. Comparison of the patients aged 75 years and below (67.2%) and over 75 years (32.8%) revealed that infection (p<0.001), dizziness (p=0.011), and pain (p=0.017), tinnitus (p<0.001) were more frequent in patients 75 years and below. Hearing loss (p<0.001) and impacted cerumen (p=0.014) were more frequent in patients over 75 years. There were no significant differences in the frequency of other diseases between the groups. Patients of infectious diseases were admitted more frequently in winter (33%) and spring (31%) (p<0.001 each) when infectious diseases are more frequent. Impacted cerumen was more frequent in spring and summer (p<0.001), rhinitis and hearing loss were more frequent in winter (p<0.001 and p<0.001, respectively), and tinnitus was more frequent in spring (p<0.001).

Conclusion: Studies on geriatric age group are useful for planning healthcare services. The need for the otolaryngologists who deal with geriatric age group will increase along with the increasing number of geriatric patients.

Keywords: Diagnosis; geriatric population; otorhinolaryngology.

ÖZ

Amaç: Bu çalışmada geriatrik hastaların kulak burun boğaz tanıları yaş, cinsiyet ve başvurulan mevsim özelikleri açısından araştırıldı.

Hastalar ve Yöntemler: Ocak 2012 ve Haziran 2014 tarihleri arasında Kulak Burun Boğaz kliniğimize başvuran toplam 2,938 geriatrik hasta çalışmaya alındı. Hasta dosyalarındaki tanıları retrospektif olarak incelendi ve yaş, cinsiyet ve başvurdukları mevsimlere göre dağılımları incelendi. Tanılar ile diğer özellikler arasındaki ilişkiler analiz edildi.

Bulgular: 2.938 hastanın, 1.516'sı kadın (ort. yaş 73.1±7.0 yıl) ve 1.422'si erkek (ort. yaş 72.4±6.61 yıl) (dağılım tüm hatalar için, 65-102 yıl) idi. Tıkayıcı kulak kiri, erkeklerde daha sık iken, baş dönmesinin kadınlarda daha sık olduğu görüldü. Hastaları 75 yaş ve altı (%67.2) ve 75 yaş üstü (%32.8) olarak karşılaştırdığımızda; enfeksiyon (p<0.001), baş dönmesi (p=0.011) ve ağrı (p=0.017), kulak çınlaması (p<0.001) 75 yaş ve altı hastalarda daha sık gözlendi. İşitme kaybı (p<0.001) ve kulak kiri (p=0.014) 75 yaş üstü hastalarda daha sık olduğu gözlendi. Diğer hastalıklar açısından yaş grupları arasında anlamlı bir fark yoktu. Enfeksiyon hastalıklar için hastaların bulaşıcı hastalıkların daha yaygın olduğu kış (%33) ve ilkbaharda (%31) başvurdukları izlendi (her biri p<0.001). Tıkayıcı kulak kirinin daha çok ilkbahar ve yaz (p<0.001), rinitin (p<0.001) ve işitme kaybının (p<0.001) ise daha sık kış mevsiminde görüldüğünü ve tinnitusun daha sık ilkbaharda olduğu gözlendi (p<0.001).

Sonuç: Geriatrik yaş grubundaki araştırmalar sağlık hizmetlerinin planlanması için yararlıdır. Geriatrik yaş grubundaki hastaların artması ile bu hasta grubu ile ilgilenen KBB uzmanı ihtiyacı da artacaktır.

Anahtar Sözcükler: Tanı; geriatrik nüfus; kulak burun boğaz.

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The number of elderly people is gradually increasing in Turkey and many other countries.[1-3] The Turkish Statistical Institute reported that 3.9% of individuals were in the geriatric age group in 1935. However, address-based registry system records have indicated that 8% of the population was in the geriatric age group in 2014.[3] An increase in life expectancy and a decreased fertility rates are the reasons for increases in the number of elderly people. Age-related pathophysiological changes and complaints regarding the ear, nose, and throat are expected to occur more frequently in elderly people. Epidemiological studies focusing on the geriatric age group may help in planning treatment modalities and developing rehabilitative health services. In this study, we investigated otorhinolaryngological diagnostic characteristics of geriatric patients admitted to our Otorhinolaryngology Clinic. Relationships between diagnoses and age, gender, and season at admission were analyzed.

PATIENTS AND METHODS

A total of 2,938 geriatric patients admitted to the Ankara Yenimahalle Education and Research Hospital, 2nd Otorhinolaryngology Clinic, between January 2012 and June 2014 were included in this study. The same otolaryngologist examined all patients. The patients' charts were examined retrospectively, and the relationships between otorhinolaryngological diagnoses and other parameters, such as age, gender, and season at admission, were analyzed.

The institutional ethics committee of the Yıldırım Beyazıt University Yenimahale Education and Research Hospital approved the study protocol (decree no: 2015/02). A written informed consent was obtained from each patient.

Table 1. Frequencies of the diseases in males and females

Diseases	Gender				*Total*		
	Male		Female				
	n	%	n	%	n	%	*p*
Rhinological							
Pharyngitis, sinusitis	322	11.0	331	11.3	653	22.2	0.625
Rhinitis	136	4.6	94	3.2	230	7.8	0.001
Epistaxis	12	0.4	9	0.3	21	0.7	0.513
Other nasal and paranasal sinus diseases	33	1.1	32	1.1	65	2.2	0.709
Rhinological subtotal	503	35	466	30	970	33	0,235
Otological							
Hearing loss	284	9.7	317	10.8	601	20.5	0.552
Impacted cerumen	286	9.7	264	9.0	550	18.7	0.065
Tinnitus	99	3.4	108	3.7	207	7.0	0.885
Dizziness	62	2.1	144	4.9	206	7.0	0.00
Otological subtotal	731	51.4	833	54.9	1561	53.1	0.10
Head neck							
Swelling in the neck	16	0.5	40	1.4	56	1.9	0.003
Dysphagia/dysphonia	27	0.9	20	0.7	47	1.6	0.240
Head neck subtotal	43	1.4	60	2.0	103	3.5	0.94
Miscellaneous							
Dermatitis	44	1.5	42	1.4	86	2.9	0.662
Pain	32	1.1	43	1.5	75	2.6	0.350
Gastroesophageal reflux disease/gastritis	7	0.2	10	0.3	17	0.6	0.631
Other	62	2.1	62	2.1	124	4.2	0.783
Miscellaneous subtotal	145	4.9	157	5.3	302	10.2	0.49
Total	1422	100	1516	100	2938	100.0	0.83

The study was conducted in accordance with the principles of the Declaration of Helsinki.

Statistical analysis of the data was performed by using SPSS version 15.0 (SPSS Inc., Chicago, IL, USA) software. Numerical variables were expressed as medians and ranges (min-max). Nominal variables were expressed as the number of patients and percentages. Pearson's chi-square or Fisher's exact tests were used for comparisons, where appropriate. A p value of <0.05 was considered to indicate statistical significance.

RESULTS

Of 2,938 patients, 1,516 were females (mean age, 73.1±7.0 years) and 1,422 were males (mean age, 72.4±6.6 years) (range for all patients, 65-102 years). The otorhinolaryngological diagnoses of the patients were as follows: 653 patients (22.2%) had acute sinusitis and pharyngitis, 601 (20.5%) had hearing loss, 230 (7.8%) had rhinitis, 207 (7%) had tinnitus, 206 (7%) had dizziness, 86 (2.9%) had external auditory canal dermatitis, 75 (2.6%) had headache, 65 (2.2%) had nasal and paranasal sinus diseases, 56 (1.6%) had swelling in the neck, 47 (1.6%) had dysphagia, 21 (0.7%) had epistaxis, and 23 (0.9%) had miscellaneous diseases, including otitis, dysphonia, otalgia, tongue disorders, lesions of the mouth and skin, and sore throat.

The frequencies of the diseases for each gender are summarized in Table 1. Rhinitis was significantly more frequent in males (n=136, 4.6%) than in females (n=94, 3.2%) (p=0.001), whereas dizziness was significantly more frequent in females (n=144, 4.9%) than in males (n=62, 2.1%) (p<0.001). In addition, swelling in the neck was more frequent in females (n=40, 1.4%) than in males (n=16, 0.5%) (p=0.003). There were no

Table 2. Distribution of the diagnoses by age group

Diseases	Age groups						
	≤75 years		>75 years		*Total*		
	n	%	n	%	n	%	*p*
Rhinological							
Pharyngitis, sinusitis	481	24.3	172	17.8	653	22.2	0.00
Rhinitis	160	8.1	70	7.2	230	7.8	0.465
Epistaxis	15	0.7	6	0.6	21	0.7	0.817
Other nasal and paranasal sinus diseases	51	2.5	14	1.4	65	2.2	0.061
Rhinological subtotal	707	35.7	262	27.2	969	32.9	0.00
Otological							
Hearing loss	327	16.5	274	28.4	601	20.5	0.00
Impacted cerumen	345	17.4	205	21.2	550	18.7	0.014
Tinnitus	161	8.1	46	4.7	207	7.0	0.001
Dizziness	155	7.8	51	5.2	206	7.0	0.011
Otological subtotal	988	50.0	576	59.8	1564	53.2	0.00
Head neck							
Swelling in the neck	35	1.7	21	2.1	56	1.9	0.473
Dysphagia/dysphonia	35	1.7	12	1.2	47	1.6	0.348
Head neck subtotal	70	3.4	33	3.4	103	3.5)	0.00
Miscellaneous							
Dermatitis	60	3.0	26	2.6	86	2.9	0.643
Pain	60	3.0	15	1.5	75	2.6	0.017
Gastroesophageal reflux disease/gastritis	13	0.6	4	0.4	17	0.6	0.605
Other	77	3.8	47	4.8	124	4.2	0.241
Miscellaneous subtotal	210	10.6	92	9.5)	302	10.2	0.00
Total	1975	100	963	100	2938	100.0	0.00

Table 3. Distribution of diagnoses by season at admission to the clinic

Diseases	Season										
	Autumn		Winter		Spring		Summer		Total		
	n	%	n	%	n	%	n	%	n	%	*p*
Rhinological											
Pharyngitis, sinusitis	125	4.3	203	6.9	209	7.1	116	3.9	653	22.2	0.00
Rhinitis	50	1.7	76	2.6	61	2.1	43	1.5	230	7.8	0.013
Epistaxis	4	0.1	6	0.2	8	0.3	3	0.1	21	0.7	0.422
Other nasal and paranasal sinus diseases	16	0.5	27	0.9	14	0.5	8	0.3	65	2.2	0.009
Rhinological subtotal	195	6.6	312	10.6	292	9.9	197	6.7	969	32.9	0.00
Otological											
Hearing loss	99	3.4	222	7.6	189	6.4	91	3.1	601	20.5	0.00
Impacted cerumen	89	3.0	185	6.3	180	6.1	96	3.3	550	18.7	0.00
Tinnitus	36	1.2	67	2.3	82	2.8	22	0.7	207	7.0	0.00
Dizziness	42	1.4	61	2.1	67	2.3	36	1.2	206	7.0	0.005
Otological subtotal	266	9.0	535	18.2	518	17.6	245	8.3	1564	53.2	0.00
Head neck											
Swelling in the neck	9	0.3	11	0.4	16	0.5	20	0.7	56	1.9	0.152
Dysphagia/dysphonia	4	0.1	11	0.4	17	0.6	15	0.5	47	1.6	0.038
Head neck subtotal	13	0.4	22	7.4	33	1.1	35	1.1	103	3.5	0.007
Miscellaneous											
Dermatitis	16	0.5	32	1.1	27	0.9	11	0.4	86	2.9	0.004
Pain	14	0.5	21	0.7	29	1.0	11	0.4	75	2.6	0.016
Gastroesophageal reflux disease/gastritis	5	0.2	3	0.1	6	0.2	3	0.1	17	0.6	0.943
Other	26	0.9	44	1.5	32	1.1	22	0.7	124	4.2	0.031
Miscellaneous subtotal	556	18.9	100	3.4	94	3.1	47	1.5	302	10.2	0.00
Total	535	18.2	969	33.0	937	31.9	497	16.9	2938	100	0.00

significant differences in the frequencies of other diseases between the male and female patients (p>0.05).

The distributions of the diagnoses in the patients aged ≤75 and >75 years were compared (Table 2); 62.7% patients were ≤75 years old and 32.8% were >75 years old. Infection (p<0.001), dizziness (p=0.011), and pain (p=0.017), tinnitus (p<0.001) were significantly more frequent in patients ≤75 years old, however hearing loss (p<0.001) and impacted cerumen (p=0.014) were significantly more frequent in patients >75 years old. There were no significant differences in the frequencies of other diseases between the age groups.

The incidences of diseases in each season at admission are presented in Table 3. The patients were admitted to the otorhinolaryngology clinic most frequently in winter (33%) and spring (31%), since infectious diseases are most widespread in these seasons (p<0.001). Impacted cerumen was significantly more frequently diagnosed in spring and winter (p<0.001). Rhinitis and hearing loss were significantly more frequently diagnosed in winter (p<0.001), and tinnitus was significantly more frequently diagnosed in spring (p<0.001).

DISCUSSION

The results of this study showed that 53.1% of the elderly patients admitted to our otorhinolaryngology clinic had otological complaints. Hearing loss was the most frequent otological diagnosis (20.5%) and was significantly more frequent in the patients >75 years old than in the patients ≤75 years old (p<0.001). On the other hand, upper respiratory infection, namely pharyngitis/sinusitis, was the most frequently encountered diagnosis in elderly (22.2%).

In 2002, the mean life expectancy at birth was 74.7 years for women, 70.5 years for men, and 72.5 years for both genders in Turkey.[4] However, according to 2013-2014 data, the mean life expectancy increased to 80.7 years in women, 75.3 years in men, and 78 years in both genders.[3] Women usually live longer than men. The mean

age of the elderly population in our study was 72.4±6.6 years, and there was no significant difference between men and women in the age distributions (p=0.465). In Turkey, various studies in different medical branches have reported mean ages to be between 69.8 and 74.5 years in geriatric patient groups.[4-6] Because of significantly increased life expectancy in our country, it is important to investigate the diagnostic characteristics of elderly people admitted to outpatient clinics.

In the geriatric population, hearing loss is the third most frequent disease following arthritis and hypertension.[7] It has been reported that hearing loss may be encountered in 33% of patients >60 years, and this ratio may increase up to 50% by the age of 80 years.[8] In our study, hearing loss was seen in 20.5% of the study population. Hearing loss was seen in 327 (16.5%) of 1975 patients ≤75 years old and in 274 patients of 963 patients (28.4%) >75 years. Although the rates of hearing loss in our study were smaller than those reported in the aforementioned study, the rate was significantly higher in the geriatric age group. It is clear that hearing rehabilitation with hearing aids is needed for the elderly. On the other hand, it has been reported that 93% of the elderly population with vision problems used glasses regularly, but only 20% with hearing loss applied for medical care.[9]

In our study, 18.7% of the patients had impacted cerumen, and there was no significant difference between the males and females (p=0.065). However, impacted cerumen was significantly more frequent in the patients aged >75 years than in the patients aged ≤75 years (p=0.014). In addition, the incidence of impacted cerumen was significantly higher in spring and winter than in other seasons (p<0.001). In 1987, Mahoney reported that the prevalence of impacted cerumen was 34% in 134 patients.[10] The generally reported prevalence of cerumen plug is 6%; nevertheless, the prevalence ranges between 8% and 35% in elderly people.[11,12] The rate found in the present study was higher than the rates reported in the literature.

The incidence of subjective tinnitus is approximately 9% in patients >65 years old.[13] In our study, 207 patients were diagnosed with subjective tinnitus, which accounted for about 7% of all geriatric patients. Tinnitus was significantly more frequent in the patients aged ≤75 years than in the patients aged >75 years (p<0.001). The patients complaining of tinnitus were admitted significantly more frequently during spring than during other seasons (p<0.001).

In our study, 206 patients (7%) had dizziness (vertigo). Of those patients, 46 (22.3%) were diagnosed with benign paroxysmal positional vertigo (BPPV). Dizziness was evident in 155 patients aged ≤75 years and in 51 patients aged >75 years, and this difference was statistically significant (p=0.011). In 1994, a retrospective study by Katsarkas that included 1,194 patients with balance problems demonstrated that 39% of the patients had BPPV.[14]

The most frequent diagnosis was acute sinusitis and pharyngitis, which was encountered in 653 patients (22.2%) in our study. Otorhinolaryngological infectious diseases cause significant health problems in all age groups. The incidence of infectious diseases has been increasing in the geriatric age group because of deterioration of immune functions, nutritional deficiencies, and inadequate daily personal care.[15] In our study, infectious diseases were equally prevalent in males and females (p=0.625), but they were significantly more frequent in patients aged ≤75 years (p<0.001). We suppose that patients aged ≤75 years had more active social lives and were in crowded places more frequently. In addition, infectious diseases were more frequent in winter and spring (p<0.001).

The prevalence of rhinitis was 7.8% in our study population. Rhinitis is one of the more frequent nasal diseases. Rhinitis may be related to a number of conditions, such as allergies, and use of medications. Since geriatric patients usually have more than one chronic systemic disease, it is possible that the medications used for those diseases could cause drug-induced rhinitis. The patients complaining of rhinitis were admitted to our department more frequently in winter than in other seasons (p<0.001). In a study on geriatric patients, the prevalence of rhinitis was reported to be 29.8%; among these patients, 38.7% was diagnosed with a systemic disease requiring a systemic medication.[16] Rhinitis frequency was lower in our study, and its increased incidence in winter may be related to exacerbated symptoms because of infections.

Our study had some limitations. First, this was a single-center study and our patient population consisted of patients living in one big city in Turkey: Ankara. Consequently, the diagnostic characteristics of the geriatric patients may be different than other geriatric patients in other geographic locations. Secondly, multicenter studies are needed to further describe the diagnostic characteristics of the elderly population in Turkey.

In conclusion, epidemiological studies of geriatric patients may be useful in planning healthcare services. With this point of view, in this study, we characterized the problems of geriatric patients regarding ear, nose and throat diseases. The need for otolaryngologists to treat geriatric patients will increase along with the increasing number of people in the general population.

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