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RESEARCH

A STUDY ON THE DISEASES OF THE ELDERLY IN THE INTERNAL MEDICINE OUTPATIENT CLINIC OF A PRIVATE HOSPITAL

ABSTRACT

Introduction: The world's population is ageing and living a healthy life is becoming more important. The presence of multiple concurrent diseases has significant effects on quality of life, mortality, and healthcare utilization of elderly individuals. We aimed to examine the diseases in the elderly, the number of concurrent diseases, if the number of diseases increased with age and variation of the diseases by age and gender in an internal medicine outpatient clinic.

Materials and Method: In this study, medical records of all consecutive patients over 65 admitted to an internal medicine outpatient clinic between 2005 and 2006 were examined retrospectively.

Results: Six hundred and nineteen elderly patients were identified in this period, representing 14.2% of all patients. The mean age of the study population was 73.1±6.04 years (males; 73.81±6.45, and females; 72.53±5.64). Diseases of the cardiovascular system were the most prevalent diagnostic category (n=460, 74.3%). Only 27.6% of the elderly had a single diagnosable disease entity; the rest had at least two or more concurrent diseases. Regarding concurrent diseases, the younger elderly group (65-74 years) was not different from the elder elderly group (≥75 years) (p>0.05).

Conclusion: The risk of having multiple concurrent diseases did not differ significantly with age in this study population. It was noteworthy that mean age of men was higher than that of women.

Key words: Ageing, Co-morbidities, Chronic disease.

ARAŞTIRMA

ÖZEL BİR HASTANENİN DAHİLİYE POLİKLİNİĞİNDE YAŞLI HASTALIKLARI İLE İLGİLİ BİR ÇALIŞMA

ÖZ

Giriş: Dünya nüfusu yaşlanmakta ve sağlıklı uzun yaşam giderek daha önemli hale gelmektedir. Yaşlılıkta birçok hastalığın birlikte bulunmasının bireyin yaşam kalitesi, sağkalımı ve sağlık hizmetlerini kullanımı açısından önemli etkileri vardır. Bu çalışmada dâhiliye polikliniğine başvuran yaşlılardaki hastalıkları, birlikte bulunan hastalık sayısını, hastalık sayısının yaş arttıkça artıp artmadığını ve cinsiyetler arasındaki farkın araştırılması amaçlanmıştır.

Gereç ve Yöntem: Bu çalışmada 2005–2006 yılları arasında dahiliye polikliniğine başvuran 65 yaş ve üzerindeki ardışık tüm hastaların kayıtları retrospektif olarak incelenmiştir.

Bulgular: Bir yıllık süreçte bu polikliniğine başvuran 619 yaşlı hasta, tüm hastaların %14,2'sini oluşturuyordu. Tüm hastaların ortalama yaşı 73,1±6,04 iken erkek ve kadınların ortalama yaşları sırasıyla 73.81± 6.45 ve 72.53± 5.64 idi. En çok görülen hastalık grubu, kardiyovasküler sistem hastalıkları idi (n=460, %74,3). Hastaların %27,6'sında tek bir hastalık mevcutken, kalanların en az iki veya daha fazla hastalığı vardı. Genç-yaşlı (65-74 yaş) ve yaşlı-yaşlı (75 yaş ve üzeri) hasta grupları karşılaştırıldığında aralarında birden çok hastalığa sahip olma açısından anlamlı fark bulunmadı (p>0.05).

Sonuç: Bu çalışma grubunda yaşlanma ile, birden fazla hastalığa sahip olma riskinin arttığı saptanmamıştır. Çalışmanın kapsadığı yaşlı erkeklerin yaş ortalamasının kadınlarınkinden yüksek olması da dikkat çekici bir bulgudur.

Anahtar Sözcükler: Yaşlanma, Çoklu hastalık, Kronik hastalık

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INTRODUCTION

Dramatic changes in fertility and mortality rates during the 20th century ensured that the world would age rapidly during the 21st century (1,2). Since 1970, life expectancy at birth has risen by 5.5 years for women and almost 5 years for men in the European Union and is set to continue on this trend in coming years. Higher life expectancy also means living longer in good health and without disability (3). Because of this trend, some authors claim that the aging of Europe's population will be a crucial challenge for the 21st century. Increasing numbers of active older people demand new social structures and opportunities, increasing numbers of disabled older people require new interventions and improved health and social care with resulting economic consequences in the aging society (4).

The main consumers of health care are older people, who are the main sufferers of chronic disease and disability (3). It is a common fact that many physiological changes, psychomotor slowing, mental changes, nutrition disorders and many systematic diseases become more prevalent among older persons (1,5). The prevalence of chronic diseases increases with age, and as a result, the prevalence of concurrent chronic conditions also increases. Conversely, the healthcare needs and the associated societal burden of older adults with multiple chronic conditions (MCCs) are not adequately known. The presence of MCCs has important effects on prognosis, disability, quality of life, mortality, and healthcare utilization (6).

Levels of illness and disability among the elderly group far exceed those for other age groups, and that is the reason why the needs of this group are likely to increase substantially in the 21st century (1). The concurrence of chronic conditions may lead to faster disease progression, problems diagnosing new conditions, and treatment interactions causing adverse outcomes or altered responses and may also contribute to the complexity of patient care across settings and among care providers (6).

According to 2005 report of State Institute of Statistics, people who are at 65 years or older constitutes 6.9% of all population in Turkey (7). Life expectancy and healthy life expectancy at birth are 69.0 and 61.0 years for males and 74.0 and 63.0 years for females, respectively in 2002 in Turkey (8). Although population is aging in a similar way to the European countries, the prevalence of multiple diseases in elderly is not well documented in Turkey. In this research, we aimed to examine the diseases, which the elderly people have, number of concurrent diseases diagnosed and the risk in having multiple diseases by age and gender in an internal medicine outpatient clinic sample.

MATERIALS AND METHOD

This descriptive and retrospective study was conducted in an internal medicine outpatient clinic of a private hospital. The registry records from August 2005 to August 2006 were examined and all consecutive patients who were older than 65 years were recruited.

Internal medicine outpatient clinic in this private hospital setting is serving to a wide range of patient population and the medical records of the patients were well kept. All initial evaluations and physical examinations were made by the same physician in order to rule out the inconsistencies in diagnoses. Consultation notes or known diseases were taken into account. The registry records were investigated in terms of age, sex, and diagnosis. Repeated examinations for the same diseases of a patient eliminated. The patients were divided into two groups according to their ages. Young elderly means that the person is between 65 and 74 years of age, while the old elderly means that the age is 75 years and over.

By reason of patients who had more than one disease the number of diagnosis is larger than the number of patients. Case backgrounds, causative factors, medical histories, examination notes and the diseases noted as diagnose by the internist were noted. Due to the wide range of diagnosis encountered during examination, diseases were classified in main categories as; cardiovascular, respiratory, gastro-intestinal, genitourinary, neurological, psychiatric, metabolic diseases, infections and malignancies. Besides, concurrent diseases of each patient were noted.

Statistical analyses were performed using SPSS version 13.0 package software. Descriptive statistics (means, frequencies and percentages), Pearson's Chi-square for categorical variables and Student t-test for non-categorical variables were used. All of these tests were two tailed and were evaluated at the 0.05 significance level.

RESULTS

In the first elimination, 4344 patients were identified in the registry records and 3725 were eliminated because of age criteria. At the end during this one year period 619 elderly

were left over, representing 14.2% of the total patients who admitted to this outpatient clinic.

The mean age of the study population was 73.1±6.04 (min=65, max=100) years. While 55.6% (n=344) of the elderly were female, the 44.3% (n=275) were male. The median age of females' was 72 years with inter-quartile range of 65-90 years whilst males had median age of 73 years with inter-quartile range of 65 to 100 years. Table 1 presents the age and gender distribution of the study population. The mean age of men was significantly higher than the mean age of women (p= 0.009).

The young elderly group comprised 61.2% (n=379), and old elderly 38.8% (n=240) of the patients. The gender ratio did not differ between these age groups (p=0.12).

Diseases of the cardiovascular system were the most prevalent diagnosis group in all with hypertension as the highest. While endocrinologic-metabolic disease category was the second in mostly seen diseases category, malignancies was the least common diseases. The most common disease in the second group was diabetes mellitus. Table 2 shows all the diagnosed diseases and the disease classification of the study population.

Although the 27.6% percent of the patient had only one diagnosed disease, the rest of the patient population had at least two or more co-morbidities. Young elderly group did not different from the old elderly group in terms of number of the concurrent diseases (p>0.05). Table 3 presents the number of co-morbid diseases per patient in young elderly and elder elderly group.

Males were more likely to have only one diagnosable disease (p=0.001), while females were more likely to have more than one, reaching to a statistical significance among the patients who had four concurrent diseases (p=0.001). Suffering from five or more co-morbid diseases was seemed to be higher in men and young elderly patients than women and old elderly patients but the difference was not significant (p>0.05). Table 4 gives the comparison of the male and female patients according to concurrent diseases they had.

The hospitalization rate was 2.9% (n=18) in all elderly patients in this study population.

Discussion

As compared with other European countries, Turkey has a younger population. Life expectancy at birth and healthy life expectancy are lower than developed countries (2,3). But according to WHO expectations, aging will be a problem for especially developing countries like Turkey, which have younger populations (4,8,9). Because of these expectations, this study is important although it is a representative of a limited group.

Many authors pointed out the considerable gender differences in ageing. In Europe women live 6 years longer than men. In the age group of 60 years and over, there are 50%

Tablo 1— Age and gender distribution of the study population.

Characteristics of Patients	Number	%	Mean Age (year)	p
Age			73.10±6.04	
65-74				
Male	159	25.7		
Female	220	35.5		
Total	379	61.2	73.81±6.45	
≥75			72.53±5.64	0.12*
Male	116	18.7		
Female	124	20.0		
Total	240	38.8		
Gender				
Male	275	55.6		**0.009***
Female	344	44.4		

* The difference of genders in age accor ing to chi-square.

** The difference of mean ages in gender according to t-test.

Tablo 2— Classification of all diagnosed diseases seen in the study population.

Classification of the Diseases		Number	%	Total Number of Diagnose*	%**
Cardiovascular Disease	Hypertension	338	54.6		
	Atherosclerotic Heart Disease	56	9.0	460	74.3
	Heart Failure	36	5.8		
	Aritmias	30	4.8		
Endocrinologic- Metabolic Diseases	Diabetes Mellitus	129	20.8	214	34.5
	Dyslipidemia	53	8.5		
	Hypothyroidism	6	0.9		
	Hyperthyroidism	10	1.6		
	Obesity	8	1.2		
	Guitar	6	0.9		
	Osteoporosis	8	1.2		
Gastrointestinal System Diseases	Peptic Ulcers	70	11.3		
	Gastritis	38	6.1	209	33.7
	Kolelithiazis	33	5.3		
	Gastro-esophageal Reflux	9	1.4		
	Irritable Bowel Disease	18	2.9		
	Dyspepsia	23	3.7		
	Liver Hemangioma	6	0.9		
	GIS Bleeding	1	0.1		
	Esophagitis	7	1.1		
	Liver Function Tests Abnormality	1	0.1		
	Pyloric Stenosis	1	0.1		
	Hepatosteatosis	2	0.3		
Genitourinary Diseases	Benign Prostate Hypertrophy	23	3.7		
	Urinary System Stones	11	1.7	66	10.6
	Kidney Failure	24	3.8		
	Stress Incontinence	8	1.2		
Neurologic-Psychiatric Diseases	Vertigo	12	1.9		
	Parkinson Disease	4	0.6	34	5.4
	Cerebro Vascular Diseases	15	2.4		
	Psychiatric Diseases	2	0.3		
	Alzheimer Disease	1	0.1		
Respiratory System Diseases	Asthma	44	7.1		
	COPD	92	14.8	148	23.9
	Pulmonary Hypertension	8	1.2		
	Interstitial Pulmonary Diseases	4	0.6		
Infections	Acute gastroenteritis	25	4.0		
	Urinary Tract Infections	12	1.9	99	15.9
	Respiratory Tract Infections	43	6.9		
	Brucellosis	6	0.9		
	Chronic Hepatitis B Infection	5	0.8		
	Hepatitis C Infection	2	0.3		
	Zona Zoster	4	0.6		
	Hydatic Cyst	2	0.3		
Malignancies	Rectum Cancer	5	0.8		
	Lung Cancer	2	0.3	22	3.5
	Intracranial Tumor	1	0.1		
	Liver Cancer	1	0.1		
	Breast Cancer	2	0.3		
	Endometrial Cancer	2	0.3		
	Prostate Cancer	2	0.3		
	Lymphoma	1	0.1		
	Bladder Cancer	2	0.3		
	Stomach Cancer	2	0.3		
	Leukemia	1	0.1		
	Kidney Cancer	1	0.1		
Musculosycletal System Diseases	Arthrozis	41	6.6		
	Chronic Arthritis	8	1.2	50	8.0
	Spondylolystesis	1	0.1		
Hematologic Diseases	Iron Deficiency Anemia	30	4.8		
	Megaloblastic Anemia	8	1.2	39	6.3
	Thrombocytopenia	1	0.1		
TOTAL		**1341**	**216**	**1341**	**216**

*The number of the diagnoses is higher than the number of patients because of concurrent diseases seen in one patient.
**The total of the percentage was higher than 100.0% because the percentage was calculated according to number of diagnose per number of patients.

Tablo 3— Comparison of young elderly and elder elderly groups according to the number of diagnosed diseases

	Age				Total		p
	64-74 Years		≥75 Years		n*	%**	
Number of Diagnosed Disease	n	%	n	%/			
1	107	17.3	64	10.3	171	27.6	0.671
2	136	22.0	84	13.6	220	35.6	0.823
3	89	14.4	64	10.3	153	24.7	0.371
4	34	5.5	22	3.6	56	9.0	0.934
5 and over more	13	2.1	6	1.0	19	3.1	0.513
TOTAL	**379**	**61.2**	**240**	**38.8**	**619**	**100.0**	

*Shows the total of column.
**Shows the percentage of column in total.
***The total of the line as number and percentage.

Tablo 4— Comparison of male and female patients according to the number of diagnosed diseases

	Gender				Total		p
	Male		Female		n*	%**	
Number of Diagnosed Disease	n	%	n	%/			
1	95	15.3	76	12.3	171	27.6	**0.001**
2	95	15.3	125	20.2	220	35.6	0.673
3	61	9.9	92	14.9	153	24.7	0.223
4	13	2.1	43	6.9	56	9.0	**0.001**
5 an over	11	1.8	8	1.3	19	3.1	0.249
TOTAL	**275**	**44.4**	**344**	**55.6**	**619**	**100.0**	

*Shows the total of column.
**Shows the percentage of column in total.
***The total of the line as number and percentage.

more women than men. Approximately three forth of the people who are living alone at the age of 75 years and over are women (9). In healthy women with normal weight at age 65, life expectancy is reported as 22.1 years (10). The female predominance in the study population we reported was consistent with the previous studies, however, in the old elderly group, number of males and females were nearly same (8-12). Unlike the previous studies, the mean age of men was significantly higher than the mean age of women in this study.

The European Health Report, 2005 and State Institute of Statistics reported elderly population ratio as 5.9% and 6.9%, respectively, in Turkey (2,7). Similarly, in a recent study, in two district of Ankara in Turkey, the elderly population was founded to be 5.9% and 8.8% (13). In this study, elderly population was 14.2 percent of all patients. The rate was twice as high as previous reports but this higher rate, in fact, can be attributed to the study population, which was representing all ill individuals, we issued.

In terms of ageing, although women live longer than men, they tend to experience more disabling diseases as they grow older compared with men of the same age (14). Besides, needs for municipal care and services are significantly higher in women with older ages compared to men at the same ages (11). Our results were generally similar to the previous findings except the observed number of diagnosed diseases in men, which was more than that of female at the same age considering four concurrent diseases. At the same time male- female ratio became approximately the same by ageing.

With the increases in the prevalence of chronic diseases with age, potential prevalence of concurrent chronic conditi-

ons also increases; four of every five older Americans live with at least one chronic condition, and 48% of Medicare beneficiaries aged 65 and older have three or more chronic conditions and 21% have five or more (6). The prevalence of chronic disease was reported as 66.5% in elderly population in a study in Turkey (12). In a study by Yılmaz et al. (15), the prevalence of the accompanying illnesses in elderly patients of trauma has been reported to be 81.2%. Özdemir et al.(16) noted that 78.8% of the elderly people have at least one chronic disease according to their findings. According to Lüleci et al (17), the ratio of having two chronic diseases at the same time in nursing home residents was 14.0%. In this study we found that 35.5% of the patients were suffering from at least two concurrent diseases. The different percentages reported in different studies may be attributed to the study population and the study settings.

The European health report 2005 points out that hypertension is responsible for 20.7% of deaths as the first cause of death in Turkey (2). In a study in Sweden, the most common diagnosis group was that of diseases in the circulatory system, which was affecting 50.8% of the elderly (11). Similarly, as representative of relatively very small population cardiovascular system diseases were the leading factors in this research. In another point of view, as Inoue et al.(18) called attention the cardiovascular disease and blood pressure disorders are the main causative factors of suicides of the elderly.

In different population based studies, the hypertension prevalence in geriatric patients (≥65 years), was 75.1% and 61.8%, and 60.9%, respectively (16,19,20). In the present study hypertension, prevalence was 54.6%. The explanation for this lower rate may be the limited population of this study, which could not be the representative of general population. Özdemir et al.(16) reported that 19.7% of individuals were diabetic in an elderly population. Consistent with previous findings we observed diabetes mellitus in 20.8% of the elderly patients in this study.

Suffering from physical illness causes many people to commit suicide, particularly those in the elderly group. Cardiovascular diseases, orthopedic disorders, and digestive organ diseases among physical illnesses other than malignant neoplasm were frequently reported as the causes of suicide (18). Suicides of the elderly made up 7–15% of all the suicides of suggesting an association between multiple physical illnesses and a history of depression (21). In terms of frequent attendees, multiple complaints and multiple medical disorders should lead clinicians to consider the possibility of depression particularly in older patients (22). Those who were frequently admitted to hospital was characterized by a high degree of multi-morbidity since they had several registered diagnoses that represent different organ systems, and they also had a higher share receiving municipal care and services. Although they were seemingly a small group (15%), they consumed as much as one-third of inpatient care (35%) (11). The presence of multiple chronic conditions (MCCs) has important effects on prognosis, disability; quality of life, mortality, and healthcare utilization (6). The elderly are reported as an increasing population in overcrowded emergency departments with multiple health problems and blamed for consuming more time and resources than younger patients (23, 24). It is a common fact that many physiological changes, psychological and motor slowing, mental changes, nutritional disorders and many systematic diseases become more prevalent among older persons. Age related alterations in metabolism and the excretion of medications increase the risk of adverse drug events in the elderly (1). As another important point of the matter, the effects of polypharmacy due to concurrent diseases must not be forgotten. Tunca (25) noted that antihypertensive, antihiperlipidemic, antidepressant, anti-platelet agents, anti-diabetics, non-steroid anti-inflammatory drugs, antacids, antipsychotics and anti-epileptics are the most frequently and regularly utilized drug groups which may interact with each other and other drugs and certain foods and beverages in elderly.

There are number of limitations in this study which should be noted. The results of this study should only be a representative of this study setting and should not be generalized to other health care settings and general population. Patients who issued in this study were all ill elderly and the results may be overly favorable when compared with the general population. Registry records as a source of information and retrospective design of the study may be a limitation factor. Future investigations by different sources of information via prospective studies can overcome this limitation.

In conclusion, we found that nearly one of the seven patient referred to the internist was an elderly and nearly three of every four patient had at least two or more diseases. Higher ages than expected in this study population may be consistent with the theory that living longer means to experience more disabling diseases when compared to younger patients. But the risk of having multiple concurrent diseases with aging in

elderly was not noteworthy and the mean age of men was significantly higher then the mean age of women in this study population. Our study is important in that we analyzed results from a sample that represents nearly the full spectrum of the diseases, which may be seen in an elderly by a physician in a primary care except some specialties like dermatology, neurology, orthopedics or surgery. All subjects were evaluated with a structured diagnostic interview by the same internist. Moreover, our study shows the number of concurrent diseases while previous studies have focused on evaluation some diseases seen in elderly, apart. We believe that, this study sheds light on the needs for planning for this vulnerable population, and on planning the needs of all the population in future.

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