Which Drugs do You Use? Analysis of the Young and Elderly Regarding Medication Recalling in the Emergency Setting

Hangi İlacı Kullanıyorsunuz? Acil Serviste İlaçları Hatırlama Üzerine Genç ve Yaşlı Bireylerin Analizi?

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Abstract

Objective: This study is designed to analyse the ability of patients admitted to ED to recall drugs they were using for chronic diseases, and any effects of multiple drug use and age on recall.
Materials and Methods: The study was conducted in the University-based ED. A total of 150 patients with chronic diseases were enrolled in the study. The relationship between recalling the drugs and age groups was analyzed by X^2 test.
Results: Responses to the question for which indications the patients were prescribed the drugs, indicated that 41.3% patients in the elderly group remembered all of the indications of the drugs accurately, while the corresponding rate was 58.7% of young individuals (p=0.001). 34% patients in the elderly group and 66% of young individuals remembered all of the drug doses they used accurately (p=0.000). 29.1% patients in the elderly group, vs. 70.9% of young individuals were able to remember the trade names of the drugs they used (p=0.000).
Conclusion: Senility and usage of multiple drugs appear to have a negative effect on recall of drug names and dosages. *(JAEM 2011; 10: 65-8)*
Key words: Drug recalls, emergency medicine, aged

Özet

Amaç: Bu çalışma acil servise başvuran kronik hastalıkları için ilaç kullanan hastaların ilaçlarını hatırlayıp hatırlamadıklarını ve hatırlama üzerine çoklu ilaç kullanımının ve yaşın herhangi bir etkisi olup olmadığını araştırmak amacıyla düzenlenmiştir.
Gereç ve Yöntemler: Bu çalışma bir üniversite hastanesinde yapılmıştır. Çalışmaya kronik hastalığı olan toplam 150 hasta dahil edilmiştir. İlaçların hatırlanması ve yaş grupları arasındaki ilişki X^2 testi kullanılarak hesaplanmıştır.
Bulgular: Hastalara hangi endikasyon için ilaç kullanıyorsunuz diye sorulduğunda yaşlı gruptaki hastaların %41.3'ü, genç gruptaki hastaların %58.7'si tüm endikasyonları doğru olarak hatırladılar (p=0.001). Yaşlı gruptaki hastaların %34'ü, genç gruptaki hastaların %66'sı kullandıkları ilaçların dozlarının hepsini doğru olarak hatırladılar (p=0.000). Yaşlı gruptaki hastaların %29.1'i, genç gruptaki hastaların %70.9'u kullandıkları ilaçların özel isimlerinin tamamını doğru olarak hatırladılar (p=0.000).
Sonuç: Yaşlılık ve çoklu ilaç kullanımı ilaçların isimlerini ve dozlarını hatırlamada negatif bir etkiye sahip olduğu görünmektedir. *(JAEM 2011; 10: 65-8)*
Anahtar kelimeler: İlaç hatırlama, acil servis, yaşlılık

Introduction

By 2020, more than 1 billion people aged 60 years and older will be living in the world, more than 700 million of them in developing countries. The impact of increased elderly population will be felt in shifting lifestyles, health needs, social policy and family responsibilities. A large portion of today's aging population continues to live independently despite a variety of chronic health problems (1). Although age itself is not consistently a predictor of medication adherence or the ability to remember to take medications, the range of cognitive variation among those older than 65 is wide (2). In contrast, those in cognitive decline may show a very different profile and require targeted interventions. Cognitive variables play a large part in the elderly (3). Elderly people are more likely to live independently and many of them take care of themselves. Therefore, it is important for the elderly to remember medications and dosages correctly to support their quality of life and to prevent untoward complications due to misuse of drugs. The potential for catastrophe resulting from polypharmacy and elderly patients' misunderstanding and misuse of medication is most evident in emergency departments (4).

Hypothetically, elderly patients might have problems with recalling and thus adherence to their daily-administered medications more frequently than younger patients. In the present study, patients using medications for chronic diseases were evaluated whether they recalled their drugs and dosages or not and their recalling abilities were analysed with regard to the age groups.

Materials and Methods

This prospective study was conducted in the University-based Emergency Department (ED) in the 150-bed academic hospital between June and December 2008. One hundred and fifty consecu-

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tive patients with chronic diseases were enrolled in the study. Seventy-five patients under 65 years old (younger group) and 75 patients over 65 years old (elderly group) were included in the study. Patients were excluded if they had a Glasgow Coma Scale score under 15, visual pain score over 7/10, dementia, Alzheimer's disease, any psychiatric disease, dyspnea, speech disorders, or disorientation to time and place. Patients without a document or hospital record about chronic diseases were also excluded from the study. Patients living alone or using drugs given by another person were also discarded from the study. Likewise, patients carrying a list detailing their drug usage were not analyzed. Nonetheless, patients were enrolled if they were living with their relatives or an attendant and taking drugs by herself/himself.

On admission to the ED, triage nurses asked patients about their chronic diseases and then confirmed the data asking the accompanying persons if the patient had any chronic diseases. Nurses asked patients three questions about their medications: 1) For which indication you are using the drug? (Nurses gave some examples also: "for instance antihypertensives, antidiabetics, drugs related to thyroid diseases or heart diseases"); 2) How many times a day are you using the drug? Or: At what times are you using the drug? 3) Do you know their trade or generic names? According to answers, patients were classified as recalling all, some or none. Afterwards, this information was confirmed by their relatives, caretakers or from their hospital information system records written in previous admissions.

Statistical Analysis

The distributions of patients according to gender, drugs administered and accompanying systemic diseases were expressed as numbers and percentages. The relationship between the ability of "recalling the drugs" (i.e., recalling none of the drugs, recalling all of the drugs) and age groups (older than 65 or not) was analyzed by chi-squared test. A p-value less than 0.05 was considered as significant. SPSS version 13.0 (SPSS Inc, Chicago, IL, USA) was used for statistical analysis.

Results

Demographic and clinical characteristics of the patients were presented in Table 1. Table 2 shows the medications used by study population.

Responses to the question for which indications the patients were prescribed the drugs indicated that 41.3% patients in the elderly group, (n=43) remembered all of the indications for the drugs accurately, while the corresponding rate was 58.7% of young individuals (n=61). The difference was statistically significant (p=0.001). Meanwhile, 32 elderly individuals (69.6%) and 14 young individuals (30.4%) remembered some of the indications for which they used drugs (p=0.001) (Table 3).

As for responses to the question whether the patients remembered the dose of drugs, 33 patients in the elderly group (34%) and 64 young individuals (66%) remembered all of the drugs dose they used accurately. The difference was statistically significant (p=0.000). Thirty-three patients in the elderly group (73.3%); vs. 12 patients in the young group (26.7%) remembered a part of the drugs dose they used (p=0.000). While 9 patients in the elderly group (12.2%) were not able to remember drugs dose, there was no patient failing to remember the dose in the young group (Table 3).

When the patients in both groups were asked the trade names of the drugs used 23 patients in the elderly group (29.1%), vs. 56 young individuals (70.9%) were able to remember the trade names of the drugs they used (p=0.000). Nineteen patients in the elderly group (52.8%) and 17 patients in the young group (47.2%) were able to remember part of the drugs' trade names (p=0.000). Thirty-three patients in the elderly group (91.7%) and 3 patients in the young group (8.3%) did not remember any trade name (p=0.000) (Table 3). 53.3% of the elderly patients (n=40) and 33.3% of the young patients (n=25) used more than two drugs. Then the association of using more than two drugs with the ability to remember was analyzed. Firstly, the recalling capabilities of elderly and young groups were compared. It was found that young patients remember dosages and trade names accurately (p=0.0001). In patients using two and more drugs, it was found that elderly patients could not remember the dosages and the trade names. This finding is statistically significant (p=0.000) (Table 4).

The effect of current diseases and drugs used on the ability of patients to remember the names and doses of drugs were not significant in either groups (p>0.05).

Discussion

In the present study chronic diseases, drugs and dosages of patients admitted to ED were evaluated. These data were obtained from persons accompanying the patient or registries in the computer-based hospital information system routinely used in the hospital. Answers of patients and obtained data were compared.

Table 1. Distribution of patients according to diseases and sex

	<65 years old n (%)	>65 years old n (%)
M	24 (48.0%)	38 (50.7%)
F	26 (52.0%)	37 (49.3%)
Hypertension	55 (73.3%)	63 (84.0%)
Diabetes Mellitus	23 (30.7%)	21 (28%)
Coronary Artery Disease	12 (16.0%)	5 (6.7%)
Chronic Obstructive Pulmonary Disease	4 (5.3%)	4 (5.4%)
Congestive Heart Failure	4 (5.3%)	5 (6.7%)
Osteoporosis	1 (1.3%)	4 (5.3%)

Table 2. Distribution of patients according to medications they use

	<65 years old n (%)	>65 years old n (%)
Beta blocker agents	22 (29.3%)	22 (29.3%)
ACE inhibitors	38 (50.7%)	44 (58.7%)
Calcium channel blocker agents	12 (16.0%)	24 (32.0%)
Aspirin	40 (53.3%)	37 (49.3%)
Oral antidiabetic agents	21 (28.0%)	14 (18.7%)
Oral antilipidemic drugs	24 (32.0%)	5 (6.7%)
Diuretic drugs	4 (5.3%)	14 (18.7%)
Antiarrhythmic agents	2 (2.7%)	3 (4.0%)
Antidepressants	8 (16.0%)	31 (41.3%)
Nitrates	3 (4.0%)	14 (18.7%)
Warfarin	0 (0.00)	7 (9.3%)

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Table 3. Recalling indication for use, dosages and drug names

Recalling Drug names	Younger Group (n, %)	Elderly Group (n, %)	p value
Recalling the indication for use			
Recalling all indications	61 (58.7%)	43 (41.3%)	p=0.001
Recalling some indications	14 (30.4%)	32 (69.6%)	p=0.001
Recalling the drug dosages			
Recalling all	64 (66.0%)	33 (34.0%)	p=0.000
Recalling some dosages	12 (26.7%)	33 (73.3%)	p=0.000
Recalling none	0 (0.00)	9 (100%)	
Recalling the trade names of the drugs			
Recalling all	56 (70.9%)	23 (29.1%)	p=0.000
Recalling some	17 (47.2%)	19 (52.8%)	p=0.000
Recalling none	3 (8.3%)	33 (91.7%)	p=0.000

Table 4. Effects of using more than two drugs on recalling

Recalling Drug names	Younger Group (n, %)	Elderly Group (n, %)	p value
Recalling the indication for use			
Recalling all indications	20 (80.0%)	12 (30.0%)	p=0.0001
Recalling some indications	5 (20.0%)	28 (70.0%)	p=0.001
Recalling the drug dosages			
Recalling all	17 (68.0%)	2 (5.0%)	p=0.001
Recalling some dosages	8 (32.0%)	29 (72.5%)	p=0.003
Recalling none	0 (0.00)	9 (100%)	
Recalling the trade names of the drugs			
Recalling all	13 (52.0%)	2 (5.0%)	p=0.001
Recalling none	0 (0.00)	24 (60.0%)	p=0.000

Patients over the age of 65 were found to be less successful in recalling specific names, dosages of their drugs and indications for use than patients under the age of 65. The usage of more than two drugs was also shown to have a negative impact on recalling indication for use in all ages. Additionally, older age and using more than two drugs were detected to affect recall of specific drug names and drug dosages negatively. Physiologic and mental changes occuring with aging might have led to these findings.

Elderly patients consume a disproportionate share of prescription medications. It was reported that the elderly take a range of 2.2 to 8.1 prescription medications per capita (5). Several studies suggested that the elderly had poor knowledge of their medication dosage, and indication for use (6, 7). McCormack et al. (8). found that only 40% of patients followed in a hypertension outpatient clinic knew their medications. Similar results were found by Cleary et al. (9). When they surveyed dialysis patients at a university-based dialysis center, they found that only 39% of the hemodialysis patients and 57% of continuous ambulatory peritoneal dialysis patients could recall all of their mediations. Blenkiron (10) interviewed patients aged 75 years and older in office visits for surgery consultation or at home for routine check-up. They found that the elderly incorrectly stated the purpose of their medication in 28% of cases. As a different aspect from these studies, the present research showed a negative effect of using more than two drugs in recalling the indication for drug use. Both senility and using more than two drugs were also detected to affect recall of drug names and dosages. Failure to know a patient's medications may lead the physician to prescribe a treatment that could interact with a medication already being taken by the patient (11).

Compliance with treatment recommendations is a noteworthy key connection between medical care process and outcome. Failure to comply with the treatment causes untoward increases in healthcare costs due to unnecessary consumption of sources, long-term drug side effects and prolongation of disease period (12).

Since elderly people use more medications and have physiologic and mental changes, healthcare professionals should give more detailed instructions about their medications and diseases. Diseases and drugs play an important role during ED intervention especially in geriatric patients. For this reason private documents or cards concerning drugs and also probable consequences should be prepared and people should be instructed. Thereby metabolic effects of drugs are taken into consideration and drug interactions can be minimized. In this way, treatment of older people can be expeditiously and properly achieved in EDs.

In conclusion, by comparing young and elderly people, the present findings established that senility and using more than one drug adversely affect recalling of drug dosages and names. Therefore, scheduled reminiscent custom lists for drug use should be prepared for patients over 65 years who have chronic diseases. These lists should be kept within easy access for patients. The presence of these lists during admission to ED would be very useful and time-saving for the diagnosis and treatment of patients.

Conflict of Interest
No conflict of interest is declared by the authors.

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