Cognitive decline and dementia in elderly medical inpatients remain underestimated and underdiagnosed in a recently established university general hospital in Greece

Athanasios Douzenis [a], Ioannis Michopoulos [a], Rossetos Gournellis [a], Christos Christodoulou [a], Christina Kalkavoura [a], Panayiota G. Michalopoulou [a], Katerina Fineti [a], Paulos Patapis [b], Konstantinos Protopapas [c], Lefteris Lykouras [a,*]

[a] 2nd Department of Psychiatry, Athens University Medical School, "Attikon" University Hospital, 1 Rimini Street, 124 62, Athens, Greece
[b] 3rd Department of Surgery, Athens University Medical School, "Attikon" University Hospital, 1 Rimini Street, 124 62, Athens, Greece
[c] 4th Department of Internal Medicine, Athens University Medical School, "Attikon" University Hospital, 1 Rimini Street, 124 62, Athens, Greece

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ABSTRACT

The aim of this study was to report the prevalence of cognitive decline as well as its recognition rates in elderly inpatients in a general hospital in Greece. Two hundred randomly selected patients, 65 years old and over, hospitalized in surgery and internal medicine departments, were assessed for cognitive decline in a period of 12 months by means of structured clinical interview for DSM-IV axis-I disorders, clinical version (SCID-IV), mini-mental state examination (MMSE) and the clock drawing test (CDT). During the next 12 months the liaison calls were evaluated and the two periods were compared. During the first screening period, when psychiatric assessment was performed, 61 patients (30.5%) were diagnosed to present cognitive decline. During the second period, there were only 20 liaison calls from the same departments for patients over 65 years of age, from which 15 patients were found to present cognitive decline. Comparison between the two periods showed significant underestimation of cognitive decline. In the general hospital the cognitive decline of elderly inpatients remains still under-recognized.

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1. Introduction

Old age is naturally associated with greater morbidity and mortality. It is well established that health services are used mostly by elderly individuals. Campbell and Howe (1989) showed that 51% of all beds in a general hospital, at any given time are occupied by individuals aged 60 years or more. Depression and dementia as well as delirium are more common in elderly general hospital patients, compared to elderly individuals living in the community (Schuckit et al., 1975; Copeland et al., 1987).

Dementia is diagnosed with increasing frequency as the age increases (Neugoschl et al., 2005; Wang and Ding, 2008). Nevertheless, the epidemiology of dementia in Greek community-samples is not established since there are few community studies (Argyriadou et al., 2001). However, there is good empirical evidence that dementia largely remains undiscovered, whilst the absence of a developed network of services for these patients in the community means that the burden of care remains with the nearest relatives. This leads to an increasing burden of care, reduction of the quality of life and enhancement of individual psycho-pathology.

The detection and treatment of psychiatric disorders in elderly general-hospital patients presents a challenge for the psychiatrist. Some factors hinder this effort. Firstly, the patients might be unable to cooperate because of hearing or sight problems, but also because of forgetfulness and difficulties in concentration. Secondly, the urgent physical problems that led to admission can distract the physician from a comprehensive mental assessment. The differential diagnosis and follow-up on treatment have also many difficulties.

All these conditions emphasize the great and urgent need for training in old age psychiatry for the doctors of general hospitals. There is also a great need for the introduction of easy to use screening tools in order to facilitate detection of cognitive deficits thus assisting appropriate assessment and referral for treatment. Little is known about the care elderly patients with physical and psychiatric illnesses receive in the general hospitals. There are reports though that psychiatric condition leads to longer admissions and increased morbidity in the general hospital wards

(Campbell et al., 2004). Additionally the general hospital admission offers a good opportunity for diagnosing any uncovered psychiatric disorder through the psychiatric liaison services. If the diagnosis of mental illness is made during the admission for a physical problem, the person can be linked to the psychiatric services and followed up thereafter.

Our hypothesis was that cognitive decline and dementia in the elderly still remains underestimated. Thus the aim of this study was twofold: (a) firstly to report the prevalence of cognitive decline, and (b) to estimate its recognition rates in elderly inpatients in a general hospital in Greece.

2. Materials and methods

2.1. Population and setting

This was a two-phase study. Patients aged 65 years and over consecutively admitted in the 4th Department of Internal Medicine and in the 3rd Department of Surgery in "Attikon" University Hospital were included in the study. This general hospital is located in the West district of Athens' greater area, covering a population of more than 1,000,000.

2.2. Phase I: screening

During this first screening period 956 elderly patients were admitted. The study period lasted 12 months. Every fourth patient was examined within 3 days following admission, totally 200 patients were included in the study. This represents 25% of the total admissions of the units that participated in. According to the protocol, surgical patients were psychiatrically examined three days after their operation (if it was classified as a minor one) or 5 days later if the operation was classified as "major surgery" by the responsible surgeon. Patients who refused or were unable to participate due to mental (e.g., delirium, acute psychotic reaction, severe cognitive impairment) or general medical conditions (e.g., low level of consciousness, severe pain) were excluded. A total of 24 patients were excluded.

All patients were examined by a psychiatrist (focusing on dementia, psychotic, mood and anxiety disorders) using SCID-I/P (First et al., 1997). All patients were screened for cognitive deficits by the MMSE (Folstein et al., 1975), and the CDT (Shulman et al., 1986) which was administered to all the patients assessed with the exception of a small percentage of patients who could not draw because of their post-operation physical state. Cognitive decline was diagnosed in patients scoring 24 or less on the MMSE.

2.3. Phase II: liaison

After the initial phase was completed, the liaison referrals from the same Departments for the next 12 months were evaluated. The liaison referrals concerning patients over 65 years of age were assessed. The patients were examined by a psychiatrist and cognitive decline was measured with the same instruments. During the second period of this study 1189 elderly patients were admitted in the same departments. The screening findings and liaison findings were compared.

2.4. Data analysis

The following tests were used for the statistical analysis of the data: Pearson's χ^2 test for comparison of percentages and the t-test for comparison of means of the variables. Correlation was tested by the Pearson r coefficient.

3. Results

3.1. Phase I: screening findings

Two hundred of the total 936 geriatric admissions were examined. The demographic data of our sample were as follows: 106 were male (53%), 94 female (47%), 133 lived with family or spouse (66.7%) and 67 alone (32.8%), the mean age of the patients was 74.0 ± 6.7 years ($\pm$S.D.) and the mean duration of their education lasted 6.4 ± 3.9 years, their mean length of stay (LOS) in the hospital (was 18.8 ± 13.6 days. The sample's mean MMSE total score was 24.5 ± 5.6 and clock test 5.0 ± 3.1.

From the total of 200 patients examined, 61 were diagnosed as suffering from cognitive decline according to MMSE. This represents 30.5% of the patients examined. Based on this result, we calculated that 285 patients from the total 936 admissions should have presented cognitive decline as defined. Patients with cognitive decline showed statistically significant differences compared to those without in all demographic categories except living status (Table 1). Male and female patients with cognitive decline did not differ in age (73.5 vs. 74.6 years, t-test, ns).

The LOD compared: 20.1 days for patients with cognitive decline vs. 18.2 days for patients without, i.e., no significant difference. Living alone or living with others did not interfere with the length of admission (18.0 vs. 19.2 days, t-test, ns). Both tests used to assess cognitive decline showed high correlation to each other: $r = 0.443$, $p < 0.001$.

3.2. Phase II: liaison findings

The liaison referrals for patients over 65 years of age for the next 12 months were evaluated. From the total of 1189 geriatric admissions there were only 20 referrals (1.68%), from which 15 (1.26%) patients were found to suffer from cognitive decline. The comparison between phase 1 screening findings (285 from 936 patients diagnosed with cognitive decline) and phase 2 liaison findings (15 from 1189 patients diagnosed with cognitive decline) showed a highly significant underdiagnosis of cognitive decline (Pearson's $\chi^2 = 32.8$, $p < 0.001$).

Table 1
Sociodemographic data and clinical characteristics of the patients compared, mean $\pm$ S.D.

	Patients with cognitive decline	Patients without cognitive decline	p
Number	61	139	
Age (years)	76.8 ± 6.7	72.7 ± 6.4	<0.001
Years of education	4.1 ± 2.4	7.4 ± 4.0	<0.001
Male/female	24/37	82/57	=0.014
Living with family/alone	37/26	97/40	ns
Internal medicine/Surgical department	35/29	67/69	ns
MMSE	18.0 ± 6.0	27.4 ± 2.0	<0.001
Clock test	3.8 ± 4.5	5.5 ± 2.1	=0.019
Length of stay (days)	20.1 ± 13.4	18.2 ± 13.7	ns

ns = not significant.