

Evaluation of the cognitive function of a hospitalized elderly population

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Abstract

Objectives: Evaluation of level of consciousness and cognitive function in an elderly population admitted in an Internal Medicine department.

Method: One hundred and fifty patients older than 65 years were studied, 88 males and 62 females, using the Mini-Mental State Examination.

Results: The number of male patients was higher than female patients (57.5% vs 42.5%). We found an elevated average age with 56.6% of patients in the 8th decade of life and 23.3% of patients older than 80 years. Sixty one percent of patients were illiterate. We detected a low or very low score correlated with the

presence of dementia in 44% of patients included in this study. This incidence was higher in female (51.6%) than male patients (40.9%).

Conclusions: This study shows that most patients admitted in an internal medicine department are illiterate, elderly, with loss of cognitive function and completely dependent. Dementia is a serious problem of public health and economic issues of modern societies.

Key words: cognitive function, dementia, elderly, mini-mental state examination, MMSE.

Introduction

Dementia is a clinical syndrome featured by a cognitive loss severe enough to interfere with an individual ability to perform daily tasks and quality of life. It occurs more often in a later stage of life. Prevalence is around 1% at 60 years of age and doubles every 5 years reaching 30 to 50% at 85 years of age.¹

Dementia is a growing problem, not only from a medical perspective but also social and economic.² It is known that dementia reduces the average life expectancy.³ Reason why it is so important its diagnosis at an early stage.

The authors made this study aiming to evaluate the level of consciousness and cognitive function in an elderly population admitted in a Medicine Service using a test widely used to track cognitive disorders compatible with dementia, the Mini-Mental State Examination (MMSE).⁴

Method

Patients: This study included 150 patients admitted in the Medicine Service, of both gender and aged 65 years or more.

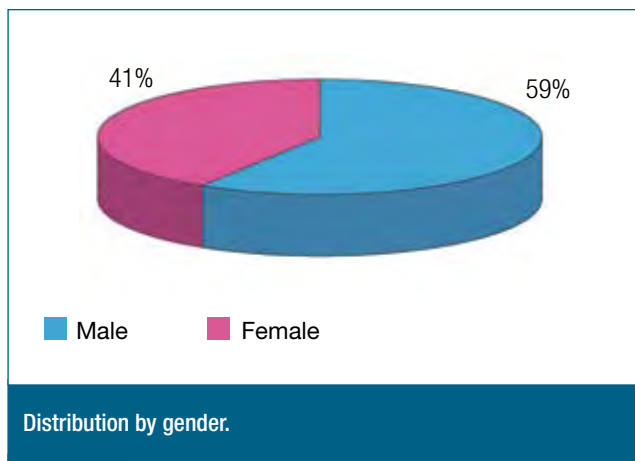
MMSE is a test used to evaluate cognitive disorders. The test is made in 6 parts aiming to evaluate the following areas: orientation, attention, speech, concentration, mental flexibility, short memory and praxis. It has 30 tasks and each one represents one point. The maximum score is 30 points. The test result suggest there is a cognitive dysfunction when illiterate patients get a score of 11 or less and literate patients, with a school background between 1 and 11 years, get a score of 27 or less. The patient age is also considered.

Exclusion criteria: All patients with severe acute metabolic alterations affecting their cognitive status were excluded.

Results

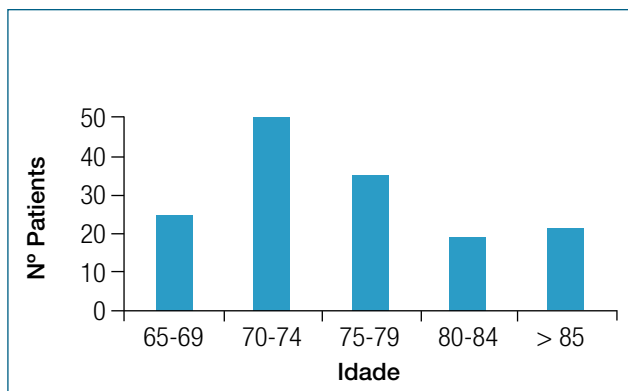
Patients included in this study were predominantly of male gender, about 59% (Fig. 1).

Patients average age was estimated at 75.8 years, with a 6.5 years standard deviation. Male population average age was 75.2 years, with a 6.1 years standard deviation, and the female population was 76.6 years, with a standard deviation of 7.1 years. A similar ratio between genders was kept for the different age ranges.



Distribution by gender.

FIG. 1



Distribution of the population studied by age.

FIG. 2

The age distribution showed a high average with 56.66% patients in their 8th decade of life and 23.33% over 80 years of age (Fig. 2).

The pathology distribution is shown on Fig. 3. On such distribution it should be highlighted the predominance of cerebrovascular disorders, followed by infections and cardiovascular diseases.

Regarding literacy, there is a clear predominance of illiterate patients, which are 61% of the studied population. Still to mention that about 31% patients have a literacy level below the 4th grade of basic education. (Fig. 4).

After applying MMSE we verified that the patients percentage with cognitive dysfunction, in the studied population was 44% (Fig. 5).

When we relate the cognitive dysfunction with the patient gender it seems there is a similar division in the female gender, while in the male gender there is a predominance of patients without cognitive dysfunction, around 59% (Fig. 6).

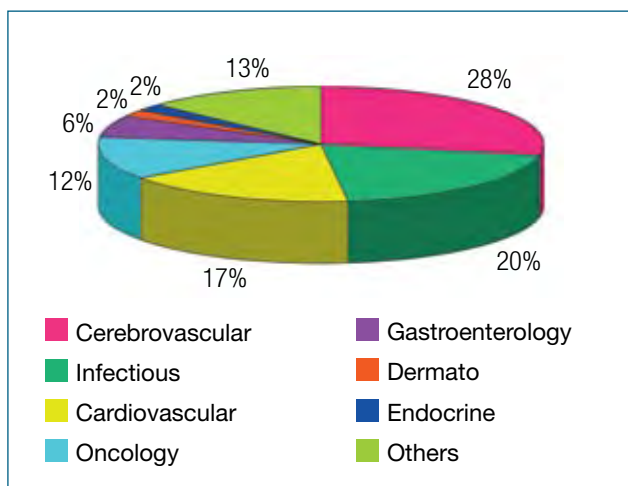
The average age was slightly higher in women, around 76.87 years, comparing with men, about 74.86 years.

The average score, by age range, is significantly reduced as age progresses (Fig. 7).

Discussion

The patients percentage, in this study, in which was detected a cognitive disorder compatible with dementia was of 44%. These results agree with the published literature.^{1,5}

It is important to ascertain the prevalence of this

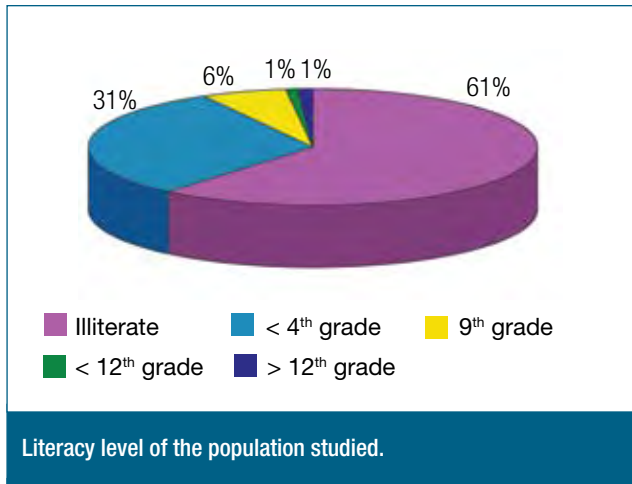


Patient distribution by pathological groups.

FIG. 3

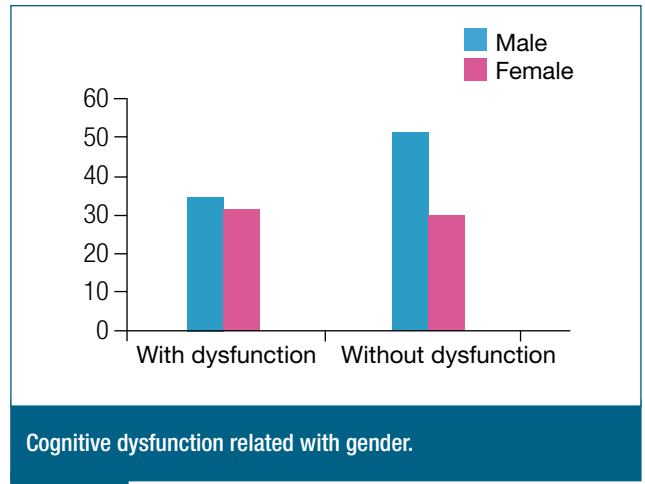
condition in the population in general. As therapeutic interventions became available for memory disorders, it was necessary a diagnosis at an early stage, to promote a better quality of life for patients and their relatives.⁶

Several studies show that the existence of frequent cognitive activities, with intellectual stimulation throughout life, is associated to a risk reduction to develop this cognitive disorder.⁷ However, if we consider that over 60% of the studied population is illiterate, we understand that this disease, in this kind of population is a social problem with a difficult short term solution. It is also important to mention that a cognitive disorder implies a high degree of de-



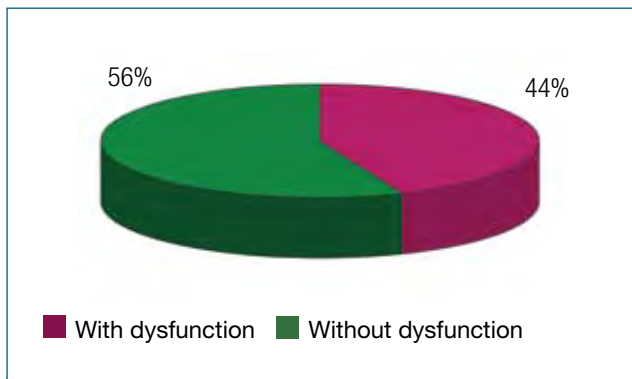
Literacy level of the population studied.

FIG. 4



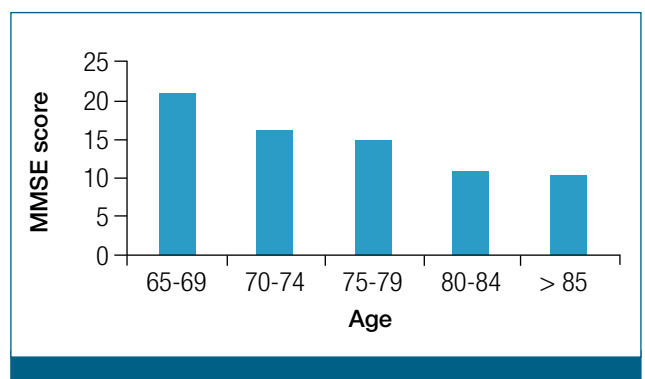
Cognitive dysfunction related with gender.

FIG. 6



Cognitive dysfunction prevalence in the population studied.

FIG. 5



Cognitive function deterioration related with age.

FIG. 7

pendency. This factor is responsible for the social and economical deterioration related with this problem, affecting not only the patient, but his entourage and, ultimately, the whole society.

It can be seen in this study there was a reduction on the average score as the age range progresses. This result agrees with the international literature, predicting an increase on the number of dementia cases with ageing.^{1,5}

We saw that the average group age was very high, with 56.66% of patients in their 8th decade of life, and 23.33% were over 80 years of age. It was seen a small variation in the average age between the female and male gender, which does not explain, however, the difference found regarding the cognitive disorder, less frequent in the male gender, which has emerged as an unexpected findings in this study.

We think that when dealing with an ageing and rural population, the female gender negative discrimination with restricted access to culture and information, even in an environment of a predominantly low educational level, ends up reflecting itself in this study results.

MMSE is a quick use and easy application tool. On the other hand, it shows some setbacks when it is performed in a sequential manner and must be only used as an initial screening test. When a cognitive disorder is detected it should be assessed with other tests specific to the cognitive area.

Conclusions

Dementia is a serious public health matter as well as a social and economic one in modern societies. As life conditions improve and there is an increase in

life expectancy, it is anticipated that the number of patients with cognitive disorders also increases.

This study shows that cognitive changes are common in elderly in-patients, whose profile is featured by advanced age and illiteracy, being by all these reasons, rather dependent.

This matter must be approached in a more decisive and effective manner, mainly in terms of prevention but also in the diagnosis at an early stage. More screening methods, simple and easy to use, must be developed in a way of being widely used to detect this situation. In the case of being diagnosed a cognitive disorder all diagnosis resources must be used in order to identify the cause of this deficit, implementing, if possible an effective treatment.¹ If at all impossible to identify and treat the cause, the course of therapy must be implemented in order to avoid the disease to evolve or to promote a slower evolution.

It is important, also, to identify all individuals with cognitive disorder, in order to take all steps needed to manage the potential related with rehabilitation, social support and their social inclusion. ■

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