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PROFILE OF THE CARE IN PATIENTS WITH DEMENTIA IN PRIMARY HEALTH CARE

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Abstract: Background. Dementia is a syndrome that cannot be considered a consequence of normal ageing. It is the main cause for disability and dependence among the elderly all over the world. Currently, there is no treatment that can cure or reverse the evolution of this disease. However, there are risk and protective factors that have a direct influence on the appearance of dementia This disease has a major impact, not only on the patients themselves, but also on their families, caregivers and the community at large. Consequently, it is essential to approach the management of those patients from the field of healthcare, both through medical consultation, with the detection, treatment and monitoring of the disease, and through nursing services, for control and monitoring. Primary care (PC) consultations are the first place where citizens with some kind of cognitive impairment go. Our objective is to analyze the assistance and profile received by these patients in Salamanca from the Primary Health Care teams. Methods. We performed a retrospective study from the year 2017 to the year 2019, using the computer software Medora 4 as a source for data. Our sample was created from 3483 registered patients, with ages between 0 and 98 years, with an average age of ± 79.88 years. Our results show that 76.7% of the patients are women with some type of dementia, and the most common diagnosis is Alzheimer's disease (AD). Statistically significant relationship was found between the diagnoses of depression and dementia.

Keywords: Dementia, primary care, nursing, health center, care.

INTRODUCTION

Neurological disorders are now responsible for the largest number of disability-adjusted life years (DALYs) (a combined index of early mortality and years spent in disability). They now account for 10% of the global burden of disease. Within the neurological disorders, dementia accounts for 10% (1) It is likely that dementia is being under-diagnosed, as in some parts of the world, patients with dementia (without diagnosis) never seek hospital care, as dementia is seen as an inevitable consequence of aging (2). The risk factors for dementia include modifiable and non-modifiable risk factors. The Lancet Commission's 2020 Report identified 12 modifiable risk factors that, with appropriate interventions, could prevent up to 40% of dementia cases worldwide (3). Education, obesity (3) hypertension, diabetes (3) smoking, air pollution (3), depression, social isolation (3) and physical inactivity (3) have been identified as potentially modifiable risk factors for dementia in old age. Regarding non-modifiable risk factors, genetic alterations specifically stand out, PSEN1, PSEN2 and APP mutations cause Alzheimer´s dissease dementia in virtually 100% of carriers (autosomal dominant AD) (4) with an average age of onset of dementia of 35 to 65 years (4) and a duration of symptoms of approximately 10 years (4). The forms of dementia are multiple and diverse. Alzheimer's disease is the most common form of dementia: it is estimated to account for 60% to 70% of cases. Other common forms include vascular dementia, dementia due to Lewy bodies (abnormal protein aggregates inside nerve cells) and a group of diseases that may contribute to frontotemporal dementia (degeneration of the frontal lobe of the brain) (5).

Alzheimer's disease represents one of the most significant and increasing burdens of care in the field of medical care. The World

Alzheimer Report updated the figures for the prevalence of AD in the period 2013-2050. According to this report, in the year 2030 approximately 76 million people all over the world will suffer some type of dementia, and particularly AD. This same report predicts that in the year 2050, the number of people with dementia will grow from 115 to 135 million (6). According to the data from the Permanent Register of the Spanish National Statistics Institute (SNSI), on January 1st, 2022, there were in Spain 9,3 million people over 65 years old, 19.6% of the total population (47,432,805). Life expectancy is also increasing, and it currently lies at 85,1 years for Spanish women and 79,6 years for men. The risk of developing this disease increases as the person grows older (7).

Spain is an aged country, and it has the third highest prevalence rate for dementia, with 6.3% of Spaniards over 60 years old, behind France (6.5%) and Italy (6.4%) according to the OECD report 'Health at a Glance'. These data are probably related to a higher life expectancy in Spain on a global scale. On the other hand, within Spain, one of the most aged regions is Castile and León. In this area, the prevalence of dementia in people over 65 years old, according to the Plan for Geriatric Healthcare, is 6.4%, and it affects approximately 43,500 people. This number keeps growing as a consequence of the progressive ageing of this population, since the percentage of people over 65 years old is the highest in Spain (21.9%) (8). It is necessary to add that nowadays dementia is still an underdiagnosed disease with rates that range from 25 to 80%. Therefore, an early diagnosis is still a determining factor, not only to get to know the actual incidence and prevalence of the disease, but also to adopt an early approach of the problem that may improve its prognosis (9, 10, 11).

The first contact with a patient for an early diagnosis of the disease takes place in PC consultations. This is the moment in which a healthcare professional must suspect the diagnosis, when the patient shows the first symptoms of memory loss and cognitive impairment (12, 13).

It seems necessary to achieve an adequate coordination between PC professionals and other agents in different healthcare, social and community areas, so that they can provide an answer to the demands of dementia patients and their relatives (14). Most of the patients with dementia (between 65% and 90%) live in their own home, where they are generally assisted by an informal caregiver —usually a close relative—,and also by PC professionals. However, less than half of them (47%) die at home. The fact that most of the patients are transferred to a healthcare facility when they reach an advanced stage in their condition may be an indicator of the difficulties that families have to undertake their care in these stages, and it reflects a deficiency in the quality of the attention received by these patients when compared with other end-stage diseases (8).

Our primary objective in this study is to know the sociodemographic characteristics of people with dementia in the city of Salamanca, as well as to know what is the most common diagnosis of dementia in this population and the tests used for diagnosis.

As secondary objectives we want to know the relationship between the diagnosis of dementia and the diagnosis of depression, to know which professionals have been the most frequented, as well as the main reason why they come and what are the most common pathologies suffered by these patients. Finally, we want to know the social situation of patients and their families through the request for social reports.

METHODS

DESIGN

We carried out a retrospective study from the year 2017 to 2019 in the field of Primary Healthcare in all the Urban Healthcare Centers of Salamanca (Spain).

PARTICIPANTS

In order to select the sample, a list of patients who could be admitted into the study was obtained from the reports of the different clinical procedures associated to the diagnosis of dementia through the computer registration software used in the healthcare centers of the public health system of the region of Salamanca (Spain), Medora.

The inclusion criteria in Medora were that patients were in an age range from 0 to 150 years and that they had some type of diagnosis for dementia: dementia, alcohol-related dementia, Lewy body dementia, dementia of the Alzheimer type, primary degenerative dementia, mixed dementia, drug-induced dementia, senile dementia, vascular dementia, cognitive impairment, mild cognitive impairment, memory loss, and normal pressure hydrocephalus. A list with 3483 patients was compiled.

The study was approved by the Primary Care Office of Salamanca and the Spanish Agency of Medicines and Medical Devices (AEMPS), which classified it as a non-post-authorization study. It was also authorized by the Clinical Research Ethics Committee of Salamanca (CRECS)

On the other hand, patients who were dead by the time the data were collected and patients with missing information in their clinical history were excluded from the study.

A list was created with the entire population who could become part of the study and the patients were encoded by their name, surnames, history number, diagnosis, healthcare center, and a number associated with the study. After sampling the patients of the study, the data from the variables were compiled and organized in an Excel spreadsheet.

TEST AND QUESTIONNAIRE

Psychometric tests in Primary Care are essential to corroborate the suspicion of cognitive impairment. It will help us to find out the severity and evolution of the same. Among the multitude of existing tests we can find: Mini-Mental State Examination (MMSE), which is the test of choice, the clock test, the informant test, Pfeiffer's Short Portable Mental Status Questionnaire, etc.

PROCEDURE

First, a descriptive analysis was carried out with the social and demographic quantitative and qualitative variables. The statistical analysis used the software program Statistical Package for the Social Sciences SPSS© (version 21 for Windows, NY,USA, IBM Corp., Armonk)

Considering the study population, a simple random sample of 103 patients was selected with the program RStudio, based on an estimate of the proportion of patients in order to maximize the sample size of 0.5 (p=0.5). In addition, the sample was selected for a 95% confidence interval and an error of 5%.

The relationships between variables were determined with the Pearson correlation coefficient for qualitative variables and with contingency tables for quantitative variables.

RESULTS

SOCIODEMOGRAPHIC CHARACTERISTICS, MOST FREQUENT DIAGNOSES AND TESTS USED

A total of 103 patients created from the 3483 patients that were registered, with ages between 21 and 98 years and an average age of ± 79.88 years. There are few records in Medora 4 on the level of education and profession of the patients, however, the data analyzed show that 80% of the patients had intermediate education up to the age of 18 years, and their profession was factory workers with jobs that did not require intellectual demands.

The 76.7% of the sample corresponded to women who had some type of dementia, with Alzheimer's disease being the most frequent diagnosis, representing 35% of the total diagnosed; on the contrary, dementia caused by normal tension hydrocephalus is the diagnosis that was made less frequently.

The method used in PC consultations for the assessment of cognitive impairment was the MMSE. We found that 31.7% of the patients to whom the test was applied had a score of less than 24 points, indicative of some type of cognitive impairment. 11.5% had a score of less than 24 points, indicative of some type of cognitive impairment. The 11.5% had a score of more than 24 points and 56.7% did not have this test. Only 20% were referred from the PC center to the neurology service, with CT being indicated in 57.3% of the patients as a complementary diagnostic test. The diagnosis most frequently indicated by this method was again Alzheimer's disease in 42.72% of cases (Figure 1).

RELATIONSHIP BETWEEN DIAGNOSIS OF DEMENTIA AND DEPRESSION

As for the relationship between a diagnosis of dementia and depression, we found a correlation between a previous diagnosis of depression (34%) and a subsequent diagnosis of dementia, being higher in women (70%), and again in this case the most common diagnosis of dementia was Alzheimer's disease.

PRIMARY CARE CENTERS VISITED, MAIN REASON FOR CONSULTATION AND MOST FREQUENT PATHOLOGIES

We studied the distribution of the sample according to the different PC centers, and found that 38.05% of patients diagnosed with Alzheimer's dementia were in the northwestern part of the city of Salamanca (La Alamedilla and Garrido Sur Health Centers), which indicates that there is a geographical area with a higher prevalence of the disease. If we look at this distribution of the disease according to gender, we see that the centers of La Alamedilla, Garrido Norte, Garrido Sur and San Juan have a greater number of female patients, while in the centers of Capuchinos, Garrido Sur and Universidad Centro there is a predominance of men with this pathology.

Our results show that 74.2% of dementia consultations in PC centers are made to the physician, followed by 23.2% to nursing consultations.

It is important to highlight from our results that the causes that lead patients with dementia to visit the PC physician's office are for prescription of medications as the most frequent cause of visits in 56.8% of all cases. These prescriptions were for the treatment of hypertension (12.1%), depression (7.7%), diabetes (4.4%), hypercholesterolemia (6.7%), Parkinson's disease (1%) and prevention of

cardiovascular events (5.7%), however, only 5.4% of the total prescriptions were specific to the treatment of dementia.

The causes of visits to the PC nursing office by these patients are focused on the control of vital signs with 19.8%, followed by somatometry with 10.5% and INR control with 7.9%. It should be noted that nursing is the one who makes the greatest number of home visits with 80.76%.

Our patients present a large number of diseases in addition to dementia.

SOCIAL SITUATION OF PATIENTS AND THEIR FAMILIES

It is important to note that 45.6% of the patients requested a social report in order to be beneficiaries of the dependency law. This indicates the need for social support that these patients need .

DISCUSIÓN

Salamanca is an aging province, dementia predominates in women, with a higher percentage of AD. The northwest of the city has a higher prevalence of the disease. The MMSE was used to assess cognitive impairment. Patients attend medical consultations more frequently than nursing consultations.

This is an aging population, as occurs within the Autonomous Community (Castilla y León) (15,16). The average age of diagnosis is 79.88 years. Most diagnoses occur in women. This may be because in our study we found 32% more women than men, this is because the predominant sex in old age is female (16), this is what we also found in other countries, where population with dementia is mostly elderly women (17).

In our study, Alzheimer's Disease was the most common dementia among the population; in other studies this is contrasted (18).

En relación con el método más usado para el cribado del deterioro cognitivo de pacientes con demencia es el MMSE. Se ha tomado como referencia en los Centros de AP de nuestro estudio por ser considerado el test con una mayor evidencia científica y más generalizado para este cribado. Aunque algunos estudios mostraron que la Evaluación Cognitiva de Montreal es superior a MMSE para discriminar entre individuos con deterioro cognitivo leve (19).

En nuestro estudio también hemos pretendido mostrar la relación existente entre la realización del MMSE y la petición de interconsulta con neurología. Debemos tener en cuenta que este test no está diseñado para un diagnóstico, de ahí la importancia de otras pruebas como reflejan otros estudios. (20-22)

In our study, the health centers in the northwest of the city have a greater number of sick patients, this area corresponds to an elderly population, the majority of whom are of a low socioeconomic level who immigrated from rural areas to the city. Some community epidemiological studies suggest an association between low socioeconomic status and a higher incidence of dementia, although there is insufficient evidence to support this statement (23,24).

We have been able to observe that in our study the majority of our patients had secondary education up to the age of 18. These data correlate with other studies where there seems to be a relationship with the type of work and cognitive deterioration (23,25).

Other authors have observed a lower risk of suffering from this type of dementia in people with a high level of education, who carry out intellectual activity on a regular basis, which has been associated in various longitudinal studies with a reduced risk of suffering from dementia, especially in subjects who develop new tasks or those with which they are not familiar or who carry out more challenging and complex work, which would

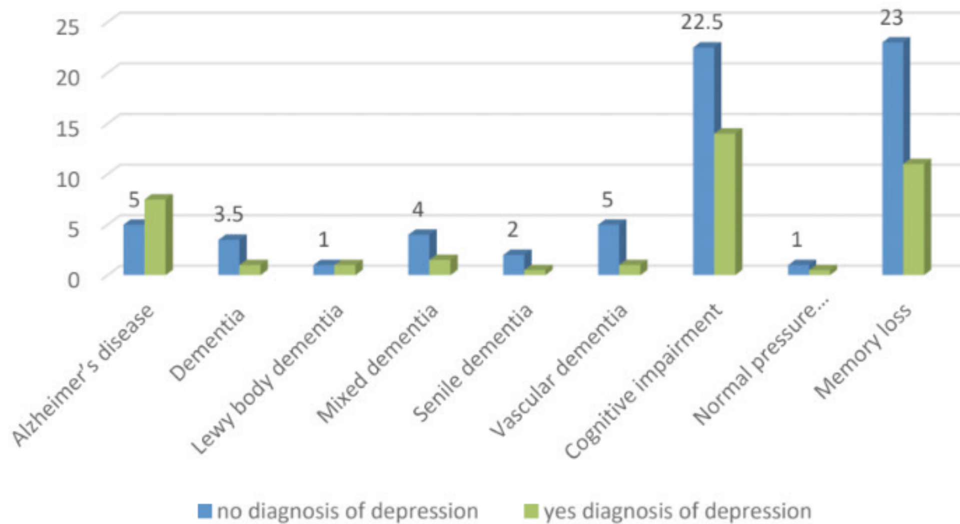

Figure 1. Principal diagnoses of dementia

Sociodemographic data		
Age years (mean)	79.88	13.50
Male n (%)	24	23
Female n (%)	79	77
Institutionalized n (%)	12	12
Socioeconomic level: hight n (%)	54	52.5
Socioeconomic level: low	49	47.5
Most frequent diagnoses n (%)A		
Alzheimer´s disease n (%)	13	12.6
demencia n (%)	4	3.9
Lewy body dementia	2	1.9
Mixed dementia	5	4.9
Senile dementia	2	1.9
Vascular dementia	6	5.8
Cognitive imparirment	36	35
Normal pressure hydrocephalus	1	1,0
Memory loss	34	33,0
Primary care centers visited n (%)		
Health centers no	68	66,0
Health center yes	35	34,0
Alamedilla	14	13,6
Capuchinos	5	4,9
Elena Ginel	5	4,9
Filiberto V	6	5,8
Garrido Norte	12	11,7
Garrido Sur	18	17,5
Miguel Armijo	10	9,7
Pizarrales	8	7,8

S. José	6	5,8
S. Juan	11	10,7
U. Centro	8	7,8
Dementia consultations: home visits	17	1,1
Dementia consultations:Nurse	363	23,2
Dementia consultations: Primarry attention Doctor	1163	74,2
Dementia consultations: Others	24	1,5
Anemia		2,5
Anxiety		12
Arthritis		1,4
Asthma		1
Ischemmic heart disease		4,3
Cholesterol		6,7
B12 deficiency		3,7
Depression		7,7
Diabetes		4,4
atrial fibrillation		3,7
Hyperthyroidism		1,3
Hypothyroidism		3,7
Arterial hypertension	12	
Heart failure	4	
Incontinence	11,1	
Chronic Venous Insufficiency	2,7	
Low back pain	4	
Osteoporosis	5,7	
Parkinson	1	
Social Report: no	56	54,4
Social Report: yes	47	45,6

Table 1.

have a protective effect. These studies justify this protective effect with the improvement of cognitive capacity associated with the cultural level and brain exercise. (22,25-28).

Another factor that they wanted to study to find out if their diagnosis was related to dementia is depression. We have found an association of this pathology with the previous existence of a diagnosis of depressive symptoms. We have also found a greater number of women who had previously suffered from depression. These results support studies by other authors who defend the relationship between the diagnosis of depression and dementia. Currently, there are numerous studies that support the hypothesis that geriatric depression constitutes a risk factor for the development of dementia (29,30).

In our study we found a greater number of women who had suffered depression compared to men; this does not occur in other studies carried out, where the association between depression and gender is greater in men than in women (P = 0.006) (31).

We have seen that our most demanding patients are over 65 years of age and that they go to their primary care doctor's consultations more frequently, in greater numbers than to nursing consultations, although it is precisely

the latter that go most frequently to home visits. Our data are close to the national and regional average in terms of assistance by PC members since doctors attend to a greater number of consultations than nursing (32).

According to data from the Ministry of Health, the activity carried out during 2015 in AP was 241 million consultations for Medicine (5.3 consultations per inhabitant and year) and 132 million for nursing (2.9 consultations per inhabitant and year), within the which home visits were 3.4 million for medicine and 9.9 million for nursing, with more than 85% of the patients who requested to come to their homes being over 65 years of age (32).

However, as shown in some studies, only 4% of neurological consultations attended by the family doctor deal with the diagnosis or monitoring of this disease (33).

If we focus on the activity in Castilla y León, the latest report from the Board, currently in the community there are a total of 2,478,079 inhabitants, of which 2,380,167 have a health card, total coverage is 96%. Focusing on Primary Care (PC), it is important to know that care is provided in consultation (91.9%), at home (1.6%) and through emergencies (6.4%). During 2015, there were 30,806,354 visits to AP, 0.56% more than the previous year. In the consultations, 60.5% of the visits are attended by the family doctor, 32.7% by nursing, and at home it is nursing who receives the highest number of visits with 74.9%.

More specifically in Salamanca, there is a total population of 180,667 inhabitants distributed among eleven health centers. The number of visits per patient per year is 10.21. In nursing, the care pressure is centered on 13.23 patients per day and the number of visits per patient per year is 2.80 (32).

This hyper-frequent attendance at consultations is due to the multiple pathologies suffered by these patients, which shows that health systems are not prepared to address all the needs of these patients and highlights the need to change the way we approach health and illness. (3. 4).

Our results show the high level of attendance at PC consultations, because one of the main reasons in both medicine and nursing is medication prescriptions. As mentioned above, there is a great etiological variety; however, it is notable that in the majority of patients the medication is associated with their HTN pathology. Cross-sectional studies, and especially population-based ones, have linked the presence of high blood pressure levels with the presence of cognitive decline and dementia, but not only dementia in its vascular forms but also Alzheimer's dementia(35,36).

It is important to highlight, as we explained previously, the significant percentage of patients with medications for depression and anxiety, which supports the diagnostic relationship between depression and dementia, which is also included in some studies that have linked depression with a greater risk of dementia in all patients. educational levels and especially in men than in women. (37-39).

However, according to some studies, depression does not increase mortality (31,40).

Other pathologies that our patients present are hypercholesterolemia and diabetes. These associated pathologies in the patients in our study support the proposals of other authors who emphasize the risk factors associated with dementia (18,39).

Likewise, various studies have shown that high cholesterol levels are a risk factor in middle age, but not at advanced ages (41-43). It is important to note studies that indicate that lipid reduction may be useful for preventing dementia, but not for its treatment (44).

On the other hand, other risk factors are diabetes; various studies suggest that the

duration of DM was associated with lower baseline cognitive performance and an increased risk of cognitive deterioration at 2 years, and that treatment of DM would reduce this risk. Furthermore, hyperinsulinemia appears to increase the risk of AD (45-47).

Another reason our patients consult is to request the social assistance report. This type of request can be considered a reflection of the level of help needs on the part of the families. Furthermore, it is notable that only a minority of the total patients studied were institutionalized. There is a large percentage that may suffer from loneliness or need greater attention in their care, a percentage that, like the number of patients, continues to increase and is expected to continue doing so in the future (48).

LIMITATIONS

The Medora 4 program does not allow creating a database directly of each of the histories of the patients studied, so data collection entails detailed work to be able to support and analyze the data.

FUTURE LINES OF RESEARCH

As future lines of research, the possibility of designing, based on participatory methodologies together with PC professionals, a base protocol for patients with dementia from PC consultations is proposed.

IMPLICATIONS

Thanks to the results obtained in our study we have been able to observe the great need for help and social support that these patients and their families need. In view of the conclusions we have been able to draw, the importance of comprehensive care is clear.

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