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CLINICAL EPIDEMIOLOGICAL CHARACTERISTICS OF PARKINSON'S DISEASE IN A NATIONAL HOSPITAL OF THE PERUVIAN HIGHLANDS

CARACTERÍSTICAS CLÍNICO EPIDEMIOLÓGICAS DE LA ENFERMEDAD DE PARKINSON EN UN HOSPITAL NACIONAL DE LA SIERRA PERUANA

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ABSTRACT

Objective: To determine the main epidemiological and clinical characteristics of Parkinson's disease at the National Hospital "Ramiro Prialé Priale" in Huancayo. **Methods:** Observational, descriptive retrospective study of a serie of cases. 84 patients were studied between 2015 and 2017, treated in the outpatient clinic or hospitalization of Neurology and Internal Medicine, for which their medical records were reviewed, the sampling was non-probabilistic of the census type selected by the investigator's judgment. **Results:** The average age was 72.93 years, the male gender prevailed (58.3%), the degree of university education (50%) and the origin of Huancayo (77.4%). Decompensated arterial hypertension was the reason for hospitalization (19.1%), disease time ranged between 1-7 years (57.1%) and tremor at rest and bradykinesia was the most frequent motor symptom (23.8%) In non-motor symptoms, 38.1% had sleep disorders, 21.4% family history of Parkinson's disease and the most associated comorbidities were: depression (48.8%) and insomnia (41.7%). **Conclusion:** Parkinson's disease is a frequent pathology in older adults and males; The predominant motor symptom is resting tremor and bradykinesia, and the associated neuropsychiatric comorbidities are depression and insomnia.

Key words: Parkinson's disease; Hypokinesia; Disorders of onset and maintenance of sleep. (source: MeSH NLM)

RESUMEN

Objetivo: Determinar las principales características epidemiológicas y clínicas de la enfermedad de Parkinson en el Hospital Nacional "Ramiro Prialé Priale" de Huancayo. **Métodos:** Estudio observacional, descriptivo tipo retrospectivo de una serie de casos. Se estudió 84 pacientes entre los años 2015 y 2017, atendidos en la consulta externa u hospitalización de Neurología y Medicina interna, para ello se revisó sus historias clínicas, el muestreo fue no probabilístico de tipo censal seleccionados por juicio del investigador. **Resultados:** El promedio de edad fue 72,93 años, predominó el género masculino (58,3%), el grado de instrucción universitario (50%) y la procedencia de Huancayo (77,4%). La hipertensión arterial descompensada fue el motivo de hospitalización (19,1%), el tiempo de enfermedad tuvo un rango de 1-7 años (57,1%) y el temblor de reposo y bradicinesia fue el síntoma motor más frecuente (23,8%). En los síntomas no motores, 38,1% tuvieron alteraciones del sueño, 21,4% antecedentes familiares de enfermedad de Parkinson y las comorbilidades más asociadas fueron: depresión (48,8%) e insomnio (41,7%). **Conclusión:** La enfermedad de Parkinson es una patología frecuente en adultos mayores y en el sexo masculino; el síntoma motor que predomina es el temblor de reposo y bradicinesia, y las comorbilidades neuropsiquiátricas asociadas son la depresión e insomnio.

Palabras clave: Enfermedad de Parkinson; Hipocinesia; Trastornos del inicio y del mantenimiento del sueño. (fuente: DeCS BIREME)

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INTRODUCTION

According to WHO, the condition of Parkinson's disease was one person for every 100 people over 60 years in 2016, being in absolute figures 6.3 million people, and by 2030 there will be approximately 12 million people worldwide with this pathology[1]. In 2008, PAHO identified that patients with epilepsy, Parkinson's disease, and Alzheimer's disease together accounted for more than 6% of the global burden to medical institutions[2]. Parkinson's disease in the United States affects approximately more than one million people, the vast majority of whom are over 50 years[3].

In Peru, there are no official or exact figures, the National Institute of Neurological Sciences (INCN) estimated in 2014 that 1% of the population in general had Parkinson's disease, or approximately 300,000 people[4]. In Peru, it is estimated that by 2030 there will be 2,015,065 people with Parkinson's disease and a mortality rate of 25.45 per 100,000 people[5]. Every year between 2,000 and 3,000 new cases are reported in our country, and in the city of Lima there are approximately 10,000 people with this disease[6].

The social health insurance EsSalud tries to provide a more comprehensive care, from rehabilitation therapies to additional drugs in case of comorbidities and surgery for stimulation in severe cases (applied since 2007)[7].

A study was carried out on the prevalence of this disease, with the Junin region being the second place in terms of birth and origin after Lima Metropolitan area, and its relationship with toxins was also determined, especially with the use of some pesticides[8]. The objective of this research is to determine the main characteristics (clinics, epidemiological, treatment and comorbidities) of Parkinson's disease.

METHODS

Type and design

This is a retrospective observational study that analyzed a series of clinical cases. The place of execution was the Ramiro Prialé Prialé hospital of Huancayo.

Population and sample

Patients who met the criteria for Parkinson's disease, treated in the outpatient clinics and/or in the inpatient room of the neurology and/or internal medicine services, between July 2015 and July 2017, at the Ramiro Prialé Prialé hospital.

It was decided to study the entire available population, in this case of census type, which was approximately 120 patients that after the selection with the criteria proposed by the researchers remained 84. In addition, the sampling was non-probabilistic and was based on the criteria or judgment of the researchers[9,10]; We included the medical records of patients diagnosed with Parkinson's disease who were hospitalized in the internal medicine service and/or treated in the external neurology offices of the National Hospital "Ramiro Prialé Prialé" of Huancayo during the years 2015 and 2017, ruling out the clinical records have incomplete records.

Methods of analysis and data collection

A form was developed for each patient with Parkinson's disease, containing the parameters: epidemiological, clinical and comorbidity, validated by expert judgment, this validation by criterion or content by teachers of the Faculty of Human Medicine – UNCP, also a pilot test was done to see the reliability of the data collection form resulting in good reliability with a Cronbach's alpha 0.81.

Statistical analysis

First, descriptive statistics were used for quantitative data, central tendency and dispersion measures were used, so for qualitative or categorical variables frequencies and percentages, as well as the use of graphs such as the bar diagram. Statistical programs such as SPSS 24.0, Epi Info 4.0, Med Clac and Excel 2016 were used for the analysis. The collection and analysis was carried out by the authors who participated in this research.

Ethical considerations

The following research work was carried out with the authorization of the institution with the assurance that the data obtained will be used only for scientific purposes, preserving the anonymity of all patients, as well as the ethical guidelines for research promoted by the National Hospital "Ramiro Prialé Prialé" of Huancayo.

RESULTS

84 medical records that met the criteria for selection of researchers were reviewed, in Table 1, you can see the epidemiological characteristics, the average age was 72.93 years with a IC of 95%: (54.71- 91.15), with a standard deviation of 9.298 being the minimum 50 and maximum 90 years; Regarding gender, males were more frequent (58.3%), also married marital status predominated (69%), the degree of university education (50%) and Huancayo as place of origin (77.4%).

In the clinical characteristics, the reason for hospitalization was primarily for decompensated arterial hypertension (19.1%) followed by chronic cholecystitis (11.9%) (Table 2), the time of illness was between 1 year and 7 years; The most frequent motor symptoms were described as tremor and bradykinesia (23.8%), while the affected limbs (33.3%) were affected by all limbs (Table 2). In the autonomic symptoms the presence of sialorrhea (19%), in the urinary symptoms the urge to urinate (38.1%). Finally, 72.6% of sensory symptoms refer pain and 10.7% ageusia. The main treatment for Parkinson's disease is Levodopa-carbidopa (51.2%) and in the additional treatments the use of anticholinergics (60.7%) (Table 3). Regarding intrinsic factors, 21.4% reported having a family history of Parkinson's disease. Finally, the most frequent comorbidity was depression (48.8%) (Table 3 and Figure 1).

Table 1. Epidemiological characteristics of patients with Parkinson's disease at the Ramiro Prialé Prialé Hospital of Huancayo.

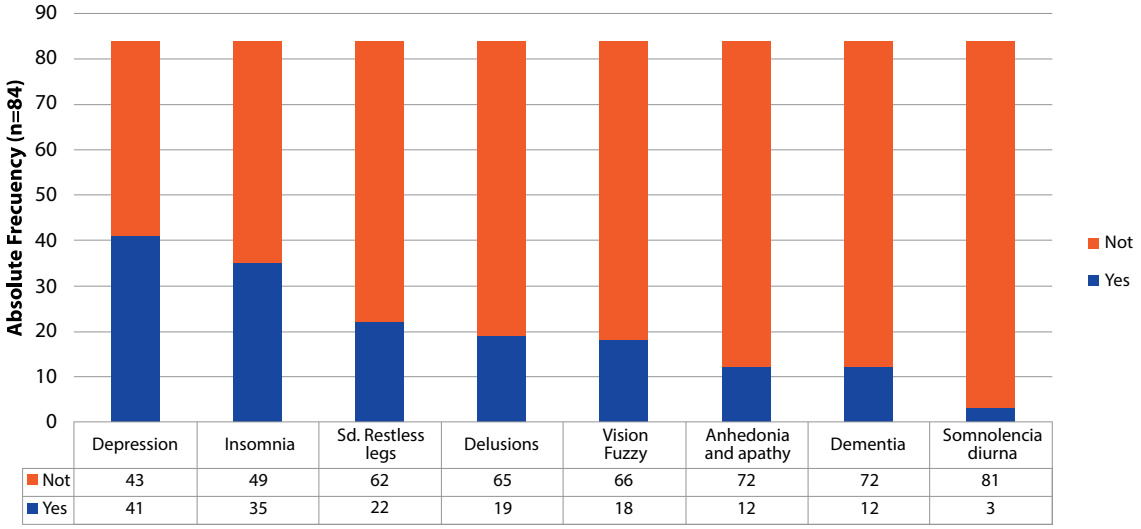
	Media	IC 95%
Age (n=84)	72,93±9,30	54,71- 91,15
Gender (n=84)	**(n)**	**(%)**
Male	49	58,3
Female	35	41,7
Marital Status (n=84)	**(n)**	**(%)**
Married	58	69,0
Single	19	22,6
Widower	6	7,1
Divorced	1	1,2
Level of instruction (n=84)	**(n)**	**(%)**
No education	3	3,6
Primary education	5	6,0
Secondary education	23	27,4
Non-university higher education	11	13,1
University degree	42	50,0
Origin (n=84)	**(n)**	**(%)**
Huancayo	65	77,4
Jauja	5	6,0
Concepción	3	3,6
Tarma	3	3,6
Yauli	1	1,2
Junín	1	1,2
Others	6	7,1

Table 2. Clinical characteristics of patients with Parkinson's disease from the Ramiro Prialé Prialé Hospital of Huancayo.

Reason for hospitalization (n=41)	**(n)**	**(%)**
Decompensated arterial hypertension	16	19,1
Chronic cholecystitis	10	11,9
Clavicle trauma	4	4,8
Olecranon trauma	3	3,6
Ventral hernia	2	2,4
Hip trauma	2	2,4
Pelvic trauma	2	2,4
Varicose veins	2	2,4
Disease time (n=84)	**(n)**	**(%)**
Between 1 - 7 years	48	57,1
Between 8 – 14 years	24	28,6
Over 14 years	9	10,7
Under 1 years	3	3,6
Disease time (n=78)	**(n)**	**(%)**
Tremor and bradykinesia	20	23,8
Tremor and stiffness	15	17,9
Tremor, bradykinesia, and facial expressiveness	12	14,3
Tremor, bradykinesia and postural instability	8	9,5
Tremor at rest and movement	7	8,3
Tremor of rest	5	6,0
Bradykinesia	5	6,0
Others	6	7,2
Affected limbs (n=84)		
All members	28	33,3
Right upper and lower limbs	16	19,0
Upper and lower left limbs	15	17,9
Both upper extremities	9	10,7
Left upper limb	6	7,1
Right upper limb	4	4,8
Upper right and lower left extremities	3	3,6
Others	3	3,6

Table 3. Non-motor symptoms and comorbidities of patients with Parkinson's disease from the Ramiro Prialé Prialé Hospital of Huancayo.

Non-motor symptoms (n=56)	(n)	(%)
Sleep disturbances	32	38,1
Thought disturbances	9	10,7
Thought and sleep disturbances	8	9,5
Language alterations	3	3,6
Thought alterations, sleep and language	2	2,4
Memory disorders	2	2,4
Autonomic symptoms (n=27)		
Sialorrhea	16	19,0
Gastrointestinal disorders	7	8,3
Orthostatic hypotension	4	4,8
Urinary symptoms (n=58)		
Urge to urinate	32	38,1
Nocturia	21	25,0
Increase in frequency	5	6,0
Sensory symptoms (n=84)		
Pain	61	72,6
Ageusia	9	10,7
Pain and akatisia	6	7,1
Pain and paresthesia	4	4,8
Paresthesia	4	4,8
Treatment (n=80)		
Levodopa - carbidopa	43	51,2
Levodopa	37	44,0
Additional treatments (n=81)		
Anticholinergics	51	60,7
Anticholinergics and selegiline	11	13,1
Selegiline and/or other antidepressants	8	9,5
Anticholinergics and dopaminergic agonists	7	8,3
Dopaminergic agonists and selegiline	4	4,8
Family history of Parkinson's disease (n=84)	18	21,4



	Depression	Insomnia	Sd. Restless legs	Delusions	Vision Fuzzy	Anhedonia and apathy	Dementia	Somnolencia diurna
Not	43	49	62	65	66	72	72	81
Yes	41	35	22	19	18	12	12	3

Figure 1. Comorbidities present in patients with Parkinson's disease at the Ramiro Prialé Prialé Hospital of Huancayo (Absolute frequencies).

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DISCUSSION

EIn our study the average age was 72.93 years, the most frequent gender was male (58.3%) and the most prevalent levels were the degree of university education (50%) and secondary (27.4%). Similar results were found in Ecuador, the average age was 62.3 years and predominated in males (53.8%)[11]. In Chile, it also predominated in the male gender (58.73%) and the average age was 71.77 years, but we found a difference regarding the level of education, where patients without higher education represented 58.73%[12]. In another study carried out in Peru, there were important statistical differences in terms of the frequencies found with respect to the male gender (28.6%) and the average age (55.95 years)[8].

In the clinical characteristics, we identified that regarding the duration of the disease, more than half had between 1 and 7 years.The most frequent motor symptoms were described as tremor at rest and bradykinesia. According to Martín[13], he determined that the length of illness of patients with Parkinson's disease was 7.36 years. The National Institute of Neurologic Sciences (INCN) established that 42.86% had a time of illness between 5-9 years and that the most prevalent motor symptoms in order of highest to lowest frequency were: bradykinesia (87.3%), stiffness (84.16%), tremor (79.37%) and postural alteration (74.6%)[14]. In the same line Cuba J, et al., in the characterization of motor symptoms the condition in patients who were younger than 40 years had a unilateral alteration, being the condition of the upper limb (65.30%), and the lower limb (34.7%)[8].

Nuñez-Peralta[15], reports that the most frequent motor symptoms are stiffness (69.4%), tremor (64.2%) and bradykinesia (42.5%) and non-motor symptoms sleep disorders (38.1%) and urge to urinate (38.1%). In addition, the use of anticholinergics predominates (60.7%); 21.4% reported having a family history of Parkinson's disease and the most frequent comorbidities were depression (48.8%) and insomnia (41.7%).

According to Navarro[16], in the pharmacological treatment of these patients, the combination of dopamine and other antiparkinkinin drugs was present in 52.5%. Regarding the history of Parkinson's disease, there were differences with the study conducted in Chile, where possibly being a specialized institution they determined that 100% of their patients had a family background[12], in our study only a fifth had a history (21.4%), it is important to study the "Mitochondrial Dynamics" in certain patients, Although it is generally known that in the vast majority of patients with Parkinson's disease there is a multifactorial component[17,18].

Regarding the neuropsychiatric comorbidities associated with Parkinson's disease, Martin[13] identified in his study the presence of dementia (12%), sleep disorders (81.36%) and depression (37.1%). In our country it was identified that among the complications that these patients develop depression is very frequent (42.85%)[8,19,20]; Nuñez-Peralta[15] determined, in the non-motor symptoms, that depression was present in 26.9% of the patients.

The limitation of our research work is that being an observational, retrospective and case series study, we only describe the characteristics of this group of patients with Parkinson's disease, which probably does not generate evidence that allows us to alter clinical practice, except its epidemiological surveillance and know the clinical picture, moreover be able to evaluate the best methodology for further research.

CONCLUSION

It was determined that Parkinson's disease is a pathology that mainly affects older males, the most characteristic motor symptom is tremor and bradykinesia and non-motor symptoms sleep disorders such as insomnia and depression.

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