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IS PARKINSONISM NOWADAYS A MAJOR MEDICAL DISORDER?

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Abstract:

Progressive chronic disorder, initially considered as being represented by dopaminergic neuronal loss, with predominantly motor symptoms, nowadays on the basis of modern technologies and procedures of diagnosis, the symptomatology extended by associating other different symptoms, many times being atypical, cognitive symptoms. Determining the diagnosis and framing it in a certain type of Parkinson's disease is not a very easy task and requires an interdepartmental complex study of the patient. The present work reviews the main elements which define this medical disorder and presents some epidemiological information at the level of Iași county in order to outline an image on the impact and the incidence which the problem of Parkinson's disease has today.

Keywords: Parkinson's disease, parkinsonism, epidemiology

Rezumat:

Afecțiune cronică progresivă, inițial considerată a fi reprezentată de pierdere de neuroni dopaminergici, cu simptomatologie preponderent motorie, la ora actuală, pe baza tehnologiilor și procedurilor moderne de diagnosticare, simptomatologia s-a extins prin asocierea de diverse alte simptome, de multe ori, atipice, cognitive. Stabilirea diagnosticului și încadrarea la un anumit tip de boală Parkinson nu este o sarcină tocmai ușoară și solicită un studiu complex interdepartamental al pacientului. Lucrarea de față trece în revistă principalele elemente ce definesc această condiție medicală și prezintă câteva informații epidemiologice la nivelul județului Iași, pentru a crea o imagine asupra impactului și incidenței pe care le are, la ora actuală, problematica Parkinson.

Cuvinte-cheie: boala Parkinson, parkinsonism, epidemiologie

INTRODUCTION

The collective outlook defines parkinsonism or Parkinson's disease as being the same medical disorder. Furthermore, about 10 – 20 years ago, even from the medical point of view, Parkinson's disease was seen as a disorder with a symptomatic representation of locomotor type. In general, the uncontrolled movements, the tremors and other problems from the same area shaped the same type of diagnosis in most of the cases. The problem of Parkinson's disease has become important over the past years due to the increase in the number of cases identified and reported. Considering the general conditions of its appearance, namely at about 55 – 60 years old, the increase in the quality of life at world level proposes a growing number of persons who are possible patients suffering from this type of disease. The main signs are exclusively related to locomotor aspects such as the resting tremors, the stiffness and the bradykinesia. At a greater distance in time in comparison with the moment of diagnosis or at least with that of the appearances of at least two signs of the three mentioned above, the postural instability can appear.

The treatments which are known at present are wrongly defined in this way due, in fact, to their real action. Taking into account the fact that it is a degenerative and irreversible disease, the concept of treatment cannot be applied in this case. However, the medication proposed aims at controlling the motor aspects. It is very difficult to diagnose a case at the initial stages. The modern technologies try to find some solutions in order to identify some methods of investigation which should allow to determine a diagnosis at an early stage (for example, correlations were drawn between the magnetic field generated by the brain and the status of a person who has Parkinson's disease (1).

As far as the non-motor aspects are concerned (2), (3), (4), they are associated with other different symptoms, most of the time they are atypical and it is difficult to determine a control methodology (for example, cognitive disorders appear in the case of one out of five patients (5):

- *Psychosis* – defined as a state of persistent loss of the sense of reality, it appears as a consequence of the false information received from the sense sensors and they propose to the patient a modified reality, hallucinations and sensations which are not in accordance with reality. Many patients suffering from Parkinson's disease also suffer from psychoses, hallucinations which usually appear especially at night time due to darkness (6);

- *Conduct disorder* – occurring in the form of an unjustified fear for the future, under the form of a sharp apathy etc. These types of disorders are often encountered in the persons suffering from Parkinson's disease (7);

- *Depression* – is a medical disorder which is tightly related to the presence of Parkinson's disease, it is a complex diagnosis very difficult to be determined (8);

- *Dementia* – a disease which has been sometimes reported to be associated with Parkinson's disease. The pathological bases of dementia in the case of Parkinson's disease are very unclear and are even associated with changes at the level of cortex, which are specific to Alzheimer's disease (9), etc.

Despite the numerous studies mentioned in literature (10), the problem of Parkinson's disease is far from being solved. In reality, treatments take into consideration a limitation of the effects of this disease and do not cure efficiently. What we wish to highlight is the importance of a diagnosis which should be as exact as possible and which should take into account even the non-motor symptoms. The problem of Parkinson's disease becomes thus complicated, much more complex than we were used to believe and obliges us to specific attitudes and complex treatments. All these treatments together substantiate the concept of management, superior to that of treatment.

We did analyze the data from the literature and from the hospital of neurology in our area (the information was correlated with the information from local medical authorities). On one hand, we provide an overview of the disease around the world. On the other hand, in order to assess the importance of Parkinson's disease in our area, we used two sources of information out of which we extracted information concerning the occurrence of parkinsonism at the level of the population and

namely, the hospital and the direction for public health for Iași county. The information identified in the registers of the neurology hospital covers a period of 3 years, namely 2008, 2009 and 2010.

This disease affects about 100 – 250 cases in 100,000 persons. In Europe were mentioned about 1,2 million patients suffering from Parkinson's disease, out of which about 16,000 were reported in Austria (11). In 2003, the disease affected about 1 million persons only in North America, accounting for about 1% of the people who are over 65 years old (12), (13). In 2006, also in the United States of America were reported about 1 million cases (14). About 50,000 patients are identified annually as suffering from Parkinson's disease.

In order to identify an appropriate therapeutic direction for this disease, research was conducted with a view to identifying some pathological models, associations and analogies between it and other medical diseases. The incidence of this disease was analysed and studied in order to isolate a population pattern which proves to be useful at a certain moment for the response to a certain medical treatment. Figures generally do not indicate a separation between different races, between genders or other different related criteria. As a general rule, this disease affects the old persons who are over 50 years old. There are controversies which relate the disease to persons who are under this age. Studies pointed out that the incidence among men is greater than the incidence among women. Generally speaking, due to abuses, the incidence of the disease among people of Black African descent was considered to be higher than the incidence in the case of white people (especially in Northern America, but this statement was based on a single study conducted on a population in Manhattan) (15). Nevertheless, as fig. 1 indicates, the distribution among white Hispanic people is the highest. The Latin Hispanic people are on the second place, at a very great distance, closely followed by Asian people and Black African people.

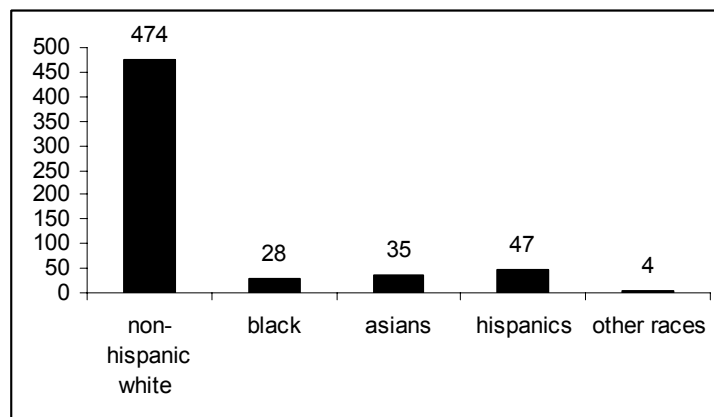


Fig. 1. The distribution of the cases of Parkinson's disease according to race (according to (15))

Fig. 2 presents the distribution of the cases of Parkinson's disease according to gender. We can notice that the scales are tipped towards men. Both the results in fig. 1, fig. 2 and those in fig. 3 were obtained for the period 1994 – 1995 among the members of MediCare Kaiser Permanent Programme in Northern California.

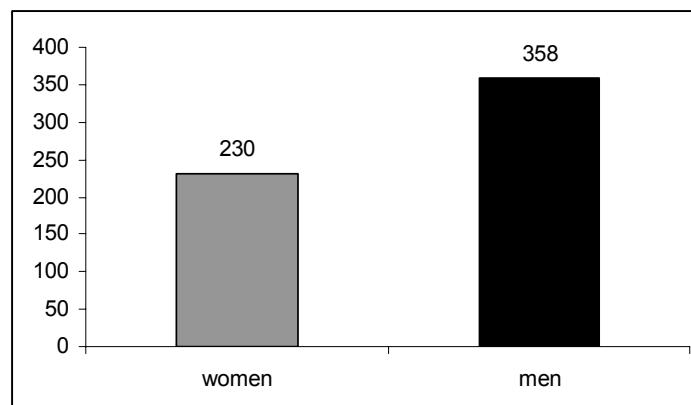


Fig. 2. The distribution of the cases of Parkinson's disease according to gender in 2003 (according to (15))

As it is mentioned in many specialty studies, the results in fig. 3 support the average age of the patients identified with Parkinson's syndrome, namely the patients who are over 50 years old, within the age range 60 – 80.

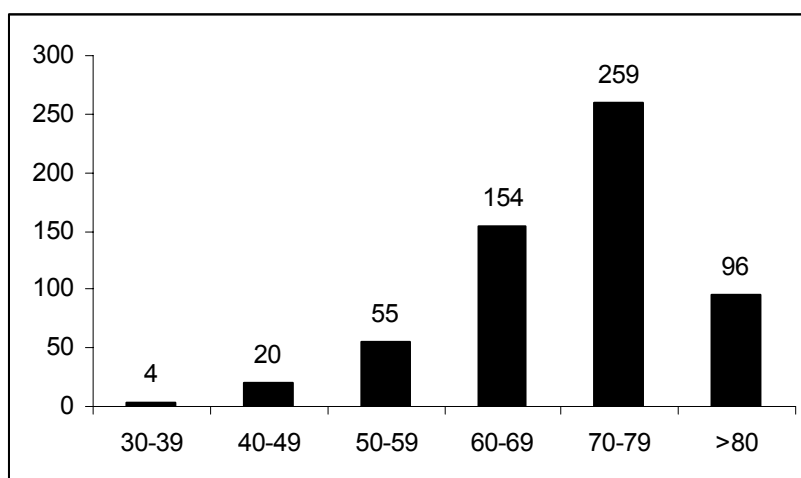


Fig. 3. The distribution of the cases of Parkinson's disease according to age (according to (15))

In the next paragraphs we will present information from our area. Fig. 4 presents the evolution of the number of Parkinson events according to age groups. I have to mention that by means of event I identify both diagnosing Parkinson symptoms and making a periodical appointment with the doctor. The diagram presents this evolution in a qualitative way. The distribution according to age categories of the occurrence of the problem of Parkinson's disease presents interest. We notice that the peak evolves around the age range 50 – 80. Cases of persons under 30 years old were not mentioned and there were very few cases of persons over 90 years old.

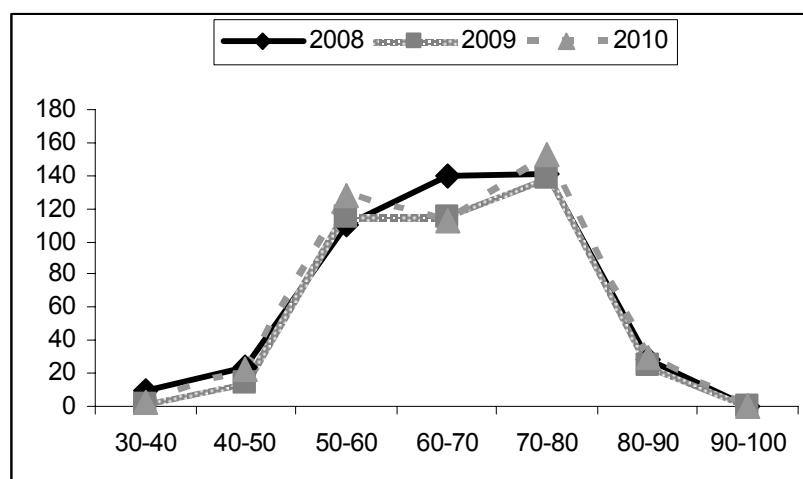


Fig. 4. The number of cases according to age groups, according to years

A high incidence of Parkinson's disease in the case of men in comparison with that of women was noticed. Fig. 5 indicates a relatively constant ratio for each of the three years.

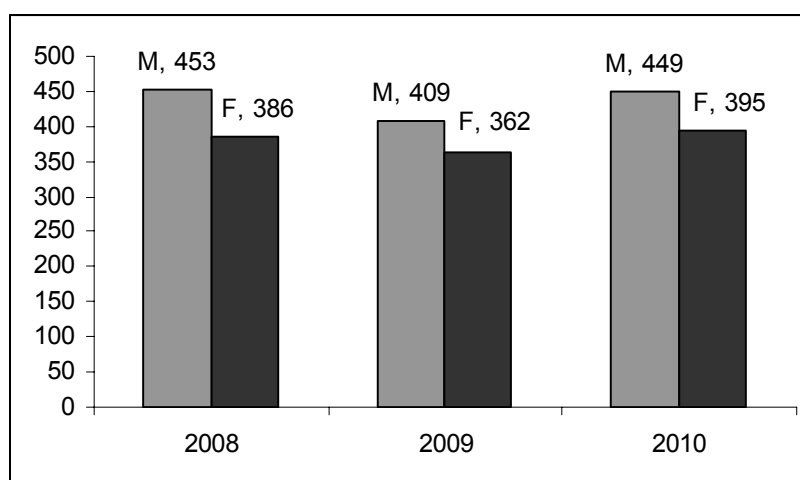


Fig. 5. Number of cases according to years, according to gender

The differentiation according to age groups between men and women identifies a growing incidence within the group made of men, which supports the previous mention on this tendency. This statement is also supported by the literature which mentions the growing incidence in the case of men. Even a masculine protein was identified which would favour the incidence of Parkinson's symptomatology for this gender group.

The information on the casuistry at the level of the neurology hospital has a restrictive character, creating only suppositions which should be checked for a larger population. Considering the population of Iași county, which is sufficient at present, fig. 6 presents reports at the level of the county concerning Parkinson's disorder for the period 2006 – 2010. With a maximum number of cases in 2009, Parkinson's disorders which were reported as an average for each year, evolve at about 250 cases, which among a population of about 825 thousand inhabitants (Tab. I), which is a small enough number in order not to create worries, but a large enough number in order to raise problems connected with assigning resources for administering and managing this disease.

Table I. The population of Iași county (demographic information)

year/gender	MEN	WOMEN	TOTAL
2006	406349	417734	824083
2007	407161	417939	825100
2008	407739	419113	826552
2009	409170	420803	829973
2010	407434	418337	825779

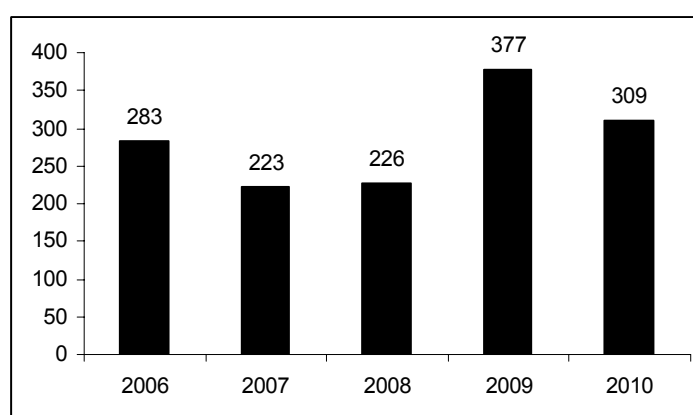


Fig. 6. Reports for Parkinson's disorders at the level of Iași county

The information available from this source permitted to identify the patients suffering either from Parkinson's disease or from secondary Parkinson's syndrome. Fig. 7 indicates this distribution for Parkinson's disease. Furthermore, we could separate the cases according to the types of area where the patient lives, namely the rural or the urban area. We can notice a high incidence of the cases in the urban area in comparison with the cases in the rural area.

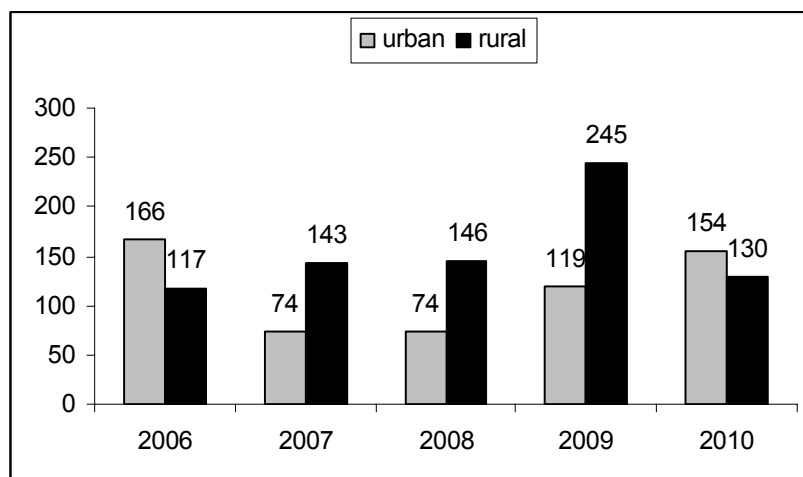


Fig. 7. Cases of Parkinson's disease reported at county level (Iași)

The problem of Parkinson's disease is defined most of the time as being related to motor disorders. The experience which has been acquired over the past years points out that cognitive phenomena are also associated with the disease. What we must take into account at the moment of diagnosing the non-motor signs in the case of such a patient is also the involvement of the social elements, of the family factor, not only at a superficial, informal level, but we must insist on and consider to a great extent the help offered by its members towards shaping the real medical state. It is evident that such a diagnosis requires a considerable effort on the part of the doctor, but we must take into consideration the fact that, considering the irreversible character of the disease, a non-motor cognitive diagnosis will always affect the life of the patient. A positive false diagnosis will anathemize, will lead to isolation and finally to desocialization. Hence also appear problems related to the patient's autonomy who will not have the same social mobility any longer. Material costs also appear indirectly on the part of the government who will have to carry out social programmes intended for such persons.

A fact which is worthy of being considered is that the treatment for Parkinson's disease requires a whole strategy and must cumulate all the medical and social factors, which enter the relation with a patient suffering from this disease. Furthermore, the management problems are also related to the necessity for treatment, for assigning resources, for controlling this disease. Nevertheless, the control does not mean the reduction in incidence at the population level if we take into account the fact that this disease is not a communicable one, does not involve a social risk, it is not a contagious disease. However, it is present, it affects those who suffer from it, their families and it has a social impact which cannot be ignored. The data obtained from studying the sources mentioned in the specific chapter (hospital and the Public Health Direction) support the necessity for a mechanism of control for Parkinson's disease, of social integration of those who suffer from this disease even though, however, the incidence at the level of population (either of a single county as Iași county) is about 0,3 – 0,5%.

Acknowledgments and disclosure

The authors declare that they have no potential conflicts of interest to disclose.

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