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### FEATURES OF THE QUALITY OF LIFE

### OF PATIENTS WITH PARKINSON'S DISEASE IN WOMEN

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**Abstract:** Biological sex is not only an important factor in the development of Parkinson's disease (PD), but also determines some of its clinical features. The purpose of the study was to determine the features of the clinical picture of the disease and social factors in patients with PD, as well as their impact on various domains of quality of life, depending on gender. The study included 103 patients with BP (48 men (46.6%), 55 women (53.4%); average age  $65.47 \pm 9.02$  years). The female gender was associated with more severe gait disorder and more pronounced postural disorders. In addition, women had more frequent nausea and vomiting (21.8 vs. 6.3%), frequent urination (72.7 vs. 45.8%), anxiety (47.3 vs. 16.7%) and difficulty falling asleep (45.5 vs. 18.8%). The level of quality of life was statistically significantly lower in women (91.0 [63.5; 112.0] versus 65.0 [44.3; 86.8] points; p < 0.001). So, female Gender was characterized by more pronounced impairments in mobility, daytime activity, emotional well-being, stigmatization, and communication. The analysis of social factors showed that among patients with PD, there are statistically significantly more unmarried (20.0 vs. 4.2%) and widows (29.1 vs. 6.3%). Correlation analysis showed that the main motor and non-motor manifestations of PD reduce the quality of life in men more than in women. It is concluded that social factors play a greater role in reducing the quality of life in women than clinical ones. The results of the study indicate that women with PD are more vulnerable to a decrease in the quality of life and more in need of psychological support to combat a serious progressive illness.

**Key words:** Parkinson's disease, quality of life, gender, non-motor symptoms.

INTRODUCTION Parkinson's disease is found everywhere, affects all ethnic groups, but its prevalence varies widely – from 22.6 to 436 per 100 thousand people, which is explained not only by various genetic and environmental factors, but also by the methodology of the research and the organization of specialized medical care. According to epidemiological studies, there is a higher incidence and prevalence of PD among men. So, according to the results of a meta-analysis that included 27 studies have revealed that, regardless of age, the incidence of PD is higher in men, and the maximum difference is observed in the age group of 60-69 years, in which this indicator is almost 2 times higher among men (58.22 versus 30.32 per 100,000 population per year). Another meta-analysis, which included 47 studies, revealed the highest prevalence of PD among men in all age groups, with the maximum difference observed in the age group of 50-59 years (134 versus 41 per 100,000 population). Biological sex is not only an important factor in the development of PD, but also determines some of its clinical features. Equally important is the assessment of the quality of life due to

# INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

the state of health in patients with PD, depending on gender, in terms of clinical manifestations (motor, cognitive, vegetative, etc.) and social aspects.

The aim of the study was to determine the features of the clinical picture and social factors in patients with PD, as well as their impact on various domains of quality of life, depending on gender.

### MATERIALS AND METHODS OF RESEARCH

The study included 103 patients with PD (48 men (46.6%), 55 women (53.4%); average age  $65.47 \pm 9.02$  years). Motor disorders were assessed part III of the unified Parkinson's Disease Rating Scale (UPDRS) in the "on" state, the stage of the disease was determined by a modified Heng–Yar scale, the Montreal Cognitive Assessment Scale (Montreal Cognitive Assessment Scale, MOKa) was used to assess cognitive functions, affective disorders were assessed by hospital anxiety and depression scale (hospital anxiety and Depression scale, HADS), a violation of the emotional state, to identify non–motor symptoms (non-motor The questionnaire of symptoms, NMSQ), the level of quality of life was determined by

a 39-point questionnaire for Parkinson's disease (a 39-point questionnaire for Parkinson's disease, PDQ-39). Statistical data processing was carried out in the SPSS Statistica 26.0 program. Since the distribution of most of the studied quantitative indicators differed from normal, their descriptive statistics are given in the form of Me [Q1; Q3] (median [25th and 75th quartiles]), and the Mann-Whitney U-test was used to compare 2 groups of quantitative data. Qualitative

data are presented in the form of frequencies, for comparison of binary data, the construction of a four-field table with the calculation of the Pearson criterion  $\chi 2$  or the exact criterion was used Fischer's depending on the estimated minimum values. To analyze the multinomial data, the construction of a multi-field table with the calculation of the Pearson criterion  $\chi 2$  was used. Spearman's criterion was used for correlation analysis. The differences were considered statistically significant at p < 0.05.

### THE RESULTS AND THEIR DISCUSSION

The patients of both groups did not differ statistically significantly in age, length of service, stage and form of the disease. Although the severity of the motor deficit in Part III of UPDRS was comparable in patients of both groups, an analysis of individual items revealed that the female sex was associated with a more severe gait disorder (2.0 [1.0; 2.3] vs. 1.0 [1.0; 2.0] points; p = 0.016) and more pronounced postural disorders (2.0 [1.0; 3.0] vs. 1.0 [0.8; 2.0] points; p = 0.004).

The frequency of taking levodopa drugs and the equivalent The daily dose of levodopa was comparable in both groups, and there were no differences in the frequency of drug dyskinesia and motor fluctuations. There were no gender differences in the assessment of cognitive functions and daytime sleepiness. The absolute number of non-motor disorders according to NMSQ significantly prevailed in women: 9.0 [5.0; 13.0] versus 6.0 [3.0; 9.0] symptoms (p = 0.01). The female sex was associated with frequent nausea and vomiting (21.8 vs. 6.3%), frequent urination (72.7 vs. 45.8%), anxiety (47.3 vs. 16.7%) and

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difficulties with falling asleep (45.5 vs. 18.8%). No prevailing non-motor symptoms were found in men. The study revealed a more pronounced decrease in the quality of life in women (91.0 [63.5; 112.0] versus 65.0 [44.3; 86.8] points; p < 0.001). Thus, the female sex was characterized by more pronounced disorders of mobility, daytime activity, emotional well-being, stigmatization and communication. At the same time, the level of social support did not differ by gender. The analysis of social factors revealed that among patients with PD, unmarried women were statistically significantly more than unmarried men (20.0 vs. 4.2%), the same distribution was observed relative to widows and widowers (29.1 vs. 6.3%). In addition, women lived alone more often than men (29.1 vs. 8.3%). An analysis of the quality of life by marital status showed that among women, widows have the greatest decrease (105.0 [69.8; 121.8] points), whereas among men – unmarried (93.0 [79.0; 93.0] points). Correlation analysis showed that the main motor and non-motor manifestations of PD reduce the quality of life in men to a greater extent than in women. Consequently, social factors play a greater role in reducing the quality of life in women than clinical ones. The results of our study indicate a greater burden of PD in women, with social factors such as the absence of a spouse, loss of a husband, loneliness contributing more than the clinical signs of the disease. Unfortunately, due to the design, our study cannot answer the question of whether the loss of a husband or his absence is a risk factor for PD, since this requires longterm studies, but the high frequency of these factors in patients with PD is alarming. BP plays a key role in gender differences estrogens, which appear to have neuroprotective effects. Thus, estradiol increases the synthesis, release and reuptake of dopamine in animals, promotes the survival of dopaminergic neurons, and has antioxidant and anti-inflammatory properties. Male gender is a risk factor for the development of moderate cognitive impairment in those patients with PD who initially do not have cognitive deficits, as well as a predictor of their progression to the level of dementia. Women have better indicators of cognitive functions, but they are more likely to develop motor fluctuations and have a greater number of non-motor symptoms. In women, the severity of postural disorders was higher, while men had more severe rigidity. In one of the studies, a predominance of tremor at the onset was revealed in women PD regardless of age (67 vs. 48%) and a milder course of the disease, as well as a higher level of dopamine binding in the striatum, which the authors explained by the estrogenic status. However, with the expanded stages BP gender differences were not found. There are no differences in the rate of progression of PD in men and women. In our study, we also identified more pronounced postural disorders in women, but we did not find statistically significant differences in the level of cognitive decline and complications of levodopathotherapy. As for non-motor symptoms, women with PD They are more likely to suffer from fatigue, anxiety, sadness, constipation, restless legs syndrome and pain, while men daytime drowsiness, salivation, and sexual disorders are more often bothered. The results of our study are consistent with these data.

### **CONCLUSIONS**

Thus, the results of our study indicate that women with PD are more vulnerable to

a decrease in the quality of life and more in need of psychological support to combat a serious progressive illness.

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