Effect of Pain on Quality of Life in Patients with Parkinson's Disease

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Abstract: Objective: To analyze the impact of pain on the quality of life of patients with Parkinson's disease. Methods: 200 patients with primary Parkinson's disease admitted in the Shaanxi Provincial People's Hospital from August 2019 to November 2020 were selected for the experiment, and these patients were divided into pain group and non-pain group in turn. Among them, there were 98 patients in the pain group and 102 patients in the non-pain group. King's Parkinson's disease pain scale was used to evaluate the severity and type of pain, and then ess and HAMD-17 were used to evaluate patients' depression and daytime sleepiness. Results: the incidence of pain in patients with Parkinson's disease was about 49%, including 38% of wave related pain and 74% of musculoskeletal pain. The score of quality-of-life Scale-39 in the pain group was higher than that in the non-pain group, and the difference was statistically significant ($P < 0.01$). Conclusion: musculoskeletal pain is a common type of pain in patients with Parkinson's disease, followed by nocturnal pain and fluctuation related pain. Its pain will have a direct impact on the quality of life of patients with Parkinson's disease.

Keywords: Pain; Parkinson's Disease Patients; Quality of Life; Influence

Introduction

Parkinson's disease is a particularly common progressive neurodegenerative disease, which is accompanied by a series of symptoms such as autonomic dysfunction and dysphagia. The main reason for its symptoms is the selective loss of dopaminergic neurons in the dense part of the substantia nigra, which is related to dopamine depletion in the striatum. Among patients with Parkinson's disease, the incidence rate of pain is about 30% to 83%. Musculoskeletal pain and wave related pain are the most common two types of pain. There is no exact relationship between different types of pain and abnormal movement of Parkinson's disease. Pain is a kind of more complex emotional response, which will be associated with negative experience, and it will also be affected by many factors. Therefore, this study takes 200 patients treated in the Shaanxi Provincial People's Hospital in China as experimental objects and applies the king's Parkinson's pain scale to evaluate the distribution characteristics of pain types and whether there is pain in patients with Parkinson's disease and analyzes its impact on the quality of life of patients with Parkinson's disease.[1]

1. Object and method

1.1 Research object

The experiment was conducted on 200 patients with primary Parkinson's disease treated in the Shaanxi Provincial People's Hospital from August 2019 to November 2020, including 130 male patients and 70 female patients; The youngest is 42 years old and the oldest is 75 years old; The minimum length of education is 7 years, and the maximum length of education is 9 years; The lowest age of onset was 43 years old, and the highest age of onset was 62 years old; The shortest course of disease is 3 years and the longest is 10 years. Excluding Parkinson's syndrome, mental disease caused by encephalitis, trauma and other factors, or the patient's history of alcohol or drug abuse, combined with whether there are pain symptoms, they are divided into pain group and non-pain group, of which the minimum age of the pain group is 54 years old and the maximum age is 72 years old; The minimum age of onset was 42 years old, and the maximum age of onset was 67

years old; The shortest course of disease is 3 years and the longest is 7 years; The minimum length of education is 8 years, and the maximum length of education is 9 years. The minimum age of the group without pain was 52 years old, and the maximum age was 70 years old; The minimum age of onset was 43 years old, and the maximum age of onset was 66 years old; The shortest course of disease is 4 years and the longest is 6 years; The minimum length of education is 7 years, and the maximum length of education is 9 years. There was no significant difference in the age of onset and the time of education between the two experimental groups, and $P > 0.05$. All patients and their families who participated in the experiment signed the informed consent form.[2]

1.2 Research methods

Under quiet conditions, assign professional specialists to evaluate the patient's medical history and physical examination of nervous system, score all scales at one time, collect the patient's demographic and medical history information, and record the patient's status of taking anti Parkinson's drugs. The kpps scale is used to evaluate the pain experienced by patients with Parkinson's disease in different types and stages. The scale will have multiple items, including musculoskeletal pain, fluctuation related pain, nocturnal pain, etc. the severity of each item is (0 to 3) multiplied by the frequency (0 to 4), and then the total sub score is (0 to 168), which is the sum of the pain burden of patients with Parkinson's disease, Medical staff need to communicate with patients and ask them about the specific location and nature of pain.

2. Results

2.1 Pain assessment results of patients with Parkinson's disease

In this experiment, there will be 82 Parkinson's patients with kpps scores ranging from 1 to 36. 55 Parkinson's patients have only one type of pain, and Parkinson's patients have more than two types of pain symptoms, of which 2 patients will be accompanied by five different types of pain at the same time. Musculoskeletal pain is a particularly common type of pain, and its incidence is about 74%, the incidence of fluctuation related pain is about 38%, the incidence of nocturnal pain is about 28%, the incidence of orofacial pain is about 3.5%, and the incidence of limb burning is about 5.5%. 34 patients with Parkinson's disease with pain complained that pain had the characteristics of "switching period" and needed to take dopaminergic drugs to link the patient's pain.[3]

2.2 Comparison of PDQ-39 scores of 2 groups

Compared with the two experimental groups, the total scores of hama-14, PDQ-39 and other dimensions of Parkinson's disease patients in the pain group were increased, and the difference was statistically significant ($P < 0.05$). However, there was no significant difference between the two groups in the total dose of ledd, mds-updrs Ⅲ, MMSE, AHRS, ESS and PDQ-39 in daily activities, humiliation, social support, cognition and communication ($P > 0.05$).

2.3 Multiple linear regression analysis of influencing factors of quality of life in PD patients

Predictors of quality of life in PD patients: considering the age of onset, course of disease, and exercise and non-exercise variables may affect quality of life, stepwise multiple linear regression model was used to study the factors affecting quality of life. In the multiple linear regression model, demographic factors (onset age, levodopa equivalent daily dose, course of disease), motor symptoms (mds-updrs Part III, Hoehn Yahr stage) and non-motor symptoms variables that may affect the quality of life were included. Multiple linear regression analysis was used. Finally, the variables included in the equation were HAMD-17, Hoehn Yahr stage, ESS Kpps, age of onset ($P < 0.05$). The adjustment R2 of the whole model is 0.626, which shows that five factors such as HAMD-17 and pain can explain the variation of PDQ-39 score of about 62.6%, and it can be considered that the regression effect of the equation is better.[4]

3. Discussion

At this stage, there is no cure for Parkinson's disease. It will be treated in the form of improving exercise and non-exercise symptoms, to reduce the pain of patients and improve their quality of life. Although at this stage, the research content of the medical community on the quality of life of Parkinson's disease has begun to increase, there is only less literature to explore the impact of pain on Parkinson's patients. Pain is a common non motor symptom of Parkinson's disease, its nature is different, and the triggering factors are more complex. Therefore, this study will use kpps scale to classify and evaluate the pain symptoms of patients. Through experimental analysis, we can understand that musculoskeletal pain will have a greater impact on patients with Parkinson's disease, and it is the most common type of pain, but musculoskeletal pain is more common in Parkinson's disease, which does not mean arthritis. Wave related pain and nocturnal pain are also the main types of pain, and the rarest pain is limb burning pain. The incidence of Parkinson's disease combined with pain will be relatively high in women. The main reason for the formation of this gender difference may be that psychological and social factors work together, and sex hormones and different endogenous opioid systems will also have a certain impact. In addition, patients with Parkinson's disease with pain are likely to have more serious depressive symptoms, so emotional problems such as anxiety and depression may also affect the pain of patients.[5]

Conclusion

Pain is one of the important factors affecting the quality of life of PD patients. It is very common in Parkinson's disease and an important cause of disability. However, both doctors and patients have insufficient understanding of PD associated pain, resulting in insufficient clinical treatment. The evaluation of pain symptoms according to King's Parkinson's disease pain scale provides the possibility for accurate diagnosis and management.

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