Analysis of Related Factors in Patients with Parkinson's Disease and Osteoporosis

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Abstract: Parkinson's disease is a common degenerative neurological disease in the elderly. It will lead to an increase in the incidence of osteoporosis in the elderly, and more seriously will directly affect the quality of life of patients, living conditions and some psychological pressure. In addition, Parkinson's disease is highly correlated with osteoporosis, and the main cause of osteoporosis is the reduction of bone mineral density. Therefore, Parkinson's disease can reduce bone mineral density and induce osteoporosis. Patients with Parkinson's disease should be treated in time, strengthened nutrition, vitamin D supplementation, and appropriate exercise to reduce the incidence of osteoporosis.

1. Research background

1.1 Literature review

Parkinson's disease affects people's quality of life, which has been discussed in detail by many scholars. Xu Jiao et al. discussed the related risk of senile Parkinson's disease with osteoporosis, and concluded that vascular risk, serum bone metabolism, and human factors were correlated with the occurrence of Parkinson's disease with osteoporosis (Xu, 2019). Liu Hong jun and others studied the prevalence and influencing factors of Parkinson's disease with depression. The results showed that Parkinson's patients who were not cared for were more likely to develop into depressive patients, so we should pay attention to timely intervention treatment (Liu, 2008). Liu Zheng qin and others studied the related factors of the prevalence of apathy among Parkinson's patients. According to the survey, the incidence of apathy and depression is higher in Parkinson's disease patients, and the incidence of depression accompanied by apathy is higher than that of non-depression but apathy. Therefore, emotional apathy can also exist independently, and there is a correlation between emotional apathy and patients'physical activity, depression and education level (Liu, 2012). Feng Yan and others studied the relationship between cognitive function and serum uric acid in elderly patients with Parson's disease, and analyzed the related factors affecting cognitive function in elderly patients with PD. It was found that the cognitive function of elderly patients with PD was affected by depression, years of education, age and other factors. The cognitive function of elderly PD patients is related to serum uric acid, that is, the lower the cognitive function is, the lower the serum uric acid level is (Feng, 2011). Wang Yuechun and other studies found that Parkinson's disease patients with fatigue and related factors. Experiments show that sleep disorders and depression are the main factors affecting fatigue. The incidence of excessive fatigue in Parkinson's patients is high, which will affect the quality of life of patients (Wang, 2017). Zhang Xixu and others studied the related factors of osteoporosis in type 2 diabetes mellitus. Studies have found that poor islet function and diabetic nephropathy are risk factors for osteoporosis in type 2 diabetes mellitus (Zhang, 2013). Hoyanan et al. studied the relationship between sugar metabolism and bone metabolism in elderly men. It was found that besides the disorder of sugar metabolism, diabetes mellitus was accompanied by the disorder of protein metabolism. It is necessary to fully analyze whether the disorder of metabolism affects bone metabolism (Huo, 2011). Zhang Hui and others have studied the relationship between Parkinson's disease and osteoporosis, and concluded that Parkinson's disease is a risk group of osteoporosis, and Parkinson's disease is a common neurodegenerative disease in the elderly (Zhang, 2015).

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1.2 Research purposes

With the rapid development of society and the acceleration of population aging, the number of patients with Parkinson's disease and osteoporosis is increasing. According to incomplete statistics, the number of Parkinson's patients in China has reached 2.5 million and shows an increasing trend. However, there is still no medical treatment to cure Parkinson's disease. It is only through the control of neurological drugs, combined with surgery, and other assistant rehabilitation methods to alleviate symptoms, so that patients can have a good life. Some experts point out that the incidence of Parkinson's disease in the elderly over 65 years old in China has increased by 1.7%. Accordingly, it is estimated that the number of Parkinson's disease patients is increasing with the increasing aging of the population in China, and there is a trend of younger development. The purpose of this study is to explore the risk factors of senile Parkinson's disease with osteoporosis through survey data.

2. Analysis of the causes of osteoporosis in parkinson's disease

2.1 There is a high correlation between Parkinson's disease and osteoporosis

The decline of skeletal strength and the incidence of fracture are osteoporosis, which is prone to have a negative impact on people's daily life. There is a close relationship between postural balance disorder and fracture, but fracture is related to the decrease of bone mineral density in Parkinson's patients. Parkinson is actually a fracture. Fractures of the femoral neck and neck belong to a high-risk group. Once a fracture occurs in this group, it is easy to incur very high medical costs, and may cause death. The decrease of bone mineral density is closely related to the fracture of Parkinson's patients. Some scholars compared the fracture rate of femoral neck between 62 Parkinson's patients and 5953 age-and gender-matched control group, and found that there was not much correlation between Parkinson's patients and the fall rate. Therefore, bone mineral density has a great influence on Parkinson's disease. If there is osteoporosis in Parkinson's patients, the rate of vertebral fracture in Parkinson's patients is relatively high, and only a quarter of vertebral fractures are caused by falls. Therefore, there is a high correlation between vertebral fracture and osteoporosis. In addition, the grade of Parkinson's disease (H-Y) is related to the decrease of bone mineral density and the severity of the disease. North American scholars also found that the incidence of male patients was higher than that of the control group. Meanwhile, the type of femoral neck in Parkinson's patients had an impact on bone mineral density. To sum up, Parkinson's disease is correlated with osteoporosis. Sex, age, body mass index and course of disease are correlated with the decrease of bone mineral density.

2.2 Osteoporosis is widespread in Parkinson's patients

One of the reasons for osteoporosis is that the reduction of limb activity in Parkinson's patients accelerates bone turnover. Therefore, the decrease of bone mineral density is correlated with the physical activity of Parkinson's patients. When the patient's limb activity decreases, it will rarely go outdoor activities, which will lead to insufficient exposure time to light, which will lead to calcium metabolism disorders. Studies have shown that a Parkinson's patient goes out to receive sunshine for more than 15 minutes a day, and after two years, the stock density increases significantly. Therefore, Parkinson's patients should often participate in outdoor activities, exercise properly every day, to ensure that they enjoy enough sunshine time every day, not only to effectively prevent osteoporosis, but also to improve bone mineral density, prevent the occurrence of fractures, thereby improving the quality of life.

2.3 There is a certain relationship between nutrient intake and nutrient intake

The incidence of fracture is related to malnutrition in Parkinson's patients. When a person is malnourished, it may be that the disease causes difficulty in swallowing. When patients suffer from malnutrition, BMI (body mass index) decreases, and the reduction of BMI increases the incidence of fracture. Therefore, the decrease of BMI color is related to BMI. Vitamin D deficiency is a high-risk factor for fracture, but most of the Parkinson's acquaintances lack vitamin D. Vitamin D

deficiency in Parkinson's patients is caused by malnutrition. Therefore, if Parkinson's patients want to solve the problem of vitamin D deficiency, they should first solve the problem of malnutrition, improve their swallowing function and supplement enough vitamin D. To prevent osteoporosis in Parkinson's patients.

Osteoporosis is a common phenomenon in Parkinson's disease. Osteoporosis is related to the severity and course of the disease. Parkinson's disease is a major cause of fracture. In order to reduce the incidence of fracture, Parkinson's patients need to be encouraged to engage in more outdoor activities, to supplement adequate vitamin D, and to exercise properly to improve their malnutrition. Family members of patients should take extra care of patients so as to avoid unnecessary occurrence and minimize the risk of fracture.

3. Analysis of the correlation between parkinson's disease and osteoporosis

Osteoporosis shows an increasing trend with increasing age. The occurrence of fractures is more and more, and it has a negative impact on the quality of sleep of patients, and it will also reduce the quality of life of patients. Once the patient has a fracture of a dangerous part such as the femur and neck bone, the disability rate, mortality rate, and medical expenses will be significantly improved.

3.1 Age problem

Similarly, in a trial of fractures in Parkinson's age- and sex-matched population, it was found that Parkinson's patients had a significantly lower fall rate than the general population. Even if the fall factor of Parkinson's patients is improved, the fracture probability is still higher than the general population. Therefore, it can be further explained that the level of bone density is directly related to the fracture rate of Parkinson's patients.

According to the clinical data of the hospital, vertebrae and osteoporosis are also highly correlated. Among them, one-third of the probability is caused by a fall, which further indicates that not all vertebrae and osteoporosis are caused by Parkinson's disease with osteoporosis. At the same time, the probability of fracture in Parkinson's patients is much higher than that of the normal control group. This conclusion once again proves that patients with Parkinson's disease are more likely to induce osteoporosis. In addition, a control group was compared in the same age group. It is found that age growth is a key risk factor for Parkinson's disease with osteoporosis. As we age, the bone content and nutrient intake in the human body will decrease year by year, and the secretion of sex hormones will gradually decrease with the increase of age. In addition, another key factor can lead to osteoporosis, that is, the imbalance of calcium ions and some other trace elements will cause secretion disorders, which will lead to bone metabolism disorder and increase the incidence of osteoporosis. Coupled with China's large population, the problem of aging is becoming more and more serious, and Parkinson's patients will gradually increase. It is estimated that the number of osteoporosis patients in China will increase to more than 400 million in 2022, accounting for more than half of the world's osteoporosis patients. Therefore, solving the problem of population aging is particularly important in the field of Parkinson's disease with osteoporosis.

3.2 Gender factors

The age of onset of Parkinson's patients is mostly concentrated between 50 and 60 years old. Therefore, patients with Parkinson should pay attention to living habits and life behaviors to avoid high-risk situations. The survey found that there is still a difference in the incidence of male and female in middle-aged and elderly people. Among them, the incidence of osteoporosis in middle-aged women is much higher than that in men. Some scholars and other studies have shown that the incidence rate of women is 6.2%, while that of middle-aged men is only 2.6%. For female subjects, age increases lead to lower levels of estrogen in the body and lower bone density. At this time, it is most likely to induce diseases such as osteoporosis. At the same time, a large number of studies have shown that compared with estrogen, the body's male hormones increase, which can promote bone formation. It also maintains bone mass and regulates bone metabolism by inhibiting bone resorption. Due to the different physiological structures of men and women, women will have

menopause after reaching a certain age. After menopause, plasma estrogen will decline significantly, and ovarian reproductive function will decline, which will affect the changes in bone mass and bone structure. Therefore, it can be concluded that the incidence of Parkinson's disease in women with osteoporosis is higher than that in men.

3.3 Nutritional status

Malnutrition is also one of the causes of Parkinson's disease with osteoporosis. In moderate malnutrition, patients with Parkinson's dysphagia, drug side effects, etc. are associated with inadequate nutrient intake. In addition, because Parkinson's patients are inconvenient to fall, and other reasons, it will cause less exercise, poor nutritional status, greatly reduced muscle capacity, and reduced body quality. These problems will ultimately affect the reduction of bone density. At the same time, some minor symptoms in daily life should cause the patient's attention. For example, the body is stiff, the hair of the bones is loud, and the long-term exposure to sunlight does not affect the loss of bone density. Especially for a long time without receiving sunlight, it will shorten the synthesis and growth rate of vitamin D3, and also affect the intake of calcium ions and other trace elements in the body, thereby increasing the incidence of osteoporosis.

4. Conclusion

For the above reasons, the biggest reason for the correlation between Parkinson's disease and osteoporosis may be that the increase in age leads to an increase in the incidence of Parkinson's disease with osteoporosis. Patients with Parkinson's disease are more likely to induce osteoporosis than their peers. Among them, it will be accompanied by a decrease in bone density, which will lead to patients with difficult life and a higher rate of fall than their peers. The survey will find that in men and women with Parkinson's disease with osteoporosis. The incidence of women is much higher than that of men. Due to differences in physiological structure, especially after menopause, the various functions of the body have changed. Therefore, in the same case of Parkinson's disease, women have a much higher incidence of osteoporosis than men.

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