SEROTONIN MECHANISMS OF DEPRESSION AND COGNITIVE DECLINE IN PARKINSON'S DISEASE

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Objectives: Depression could be revealed in 35 up to 70 % of PD patient. The origin of the depression and cognitive decline in PD is discussing. It is known that not only dopamine changes are responsible for the symptoms of PD. Some of the symptoms occur due to the disturbances of serotonin mediation.

Methods: We examined 119 PD patients (48 males, 71 females) with the mean age 62,5. The average duration of the disease was 6,3 years. We used UPDRS, Hoehn and Yahr. We assessed emotional and cognitive status used standard scales. We determined quantity of blood serum serotonin by the Immune Assay method. 20 of depressed PD patients received SSRI antidepressant - fluoxetine 20 mg daily, another 20 - placebo for 8 weeks.

Results: Blood serotonin level was significantly lower in PD (189,14±80,63ng/ml) than in healthy's (271,98±92,86 ng/ml). And it was lower in depressed patients (166,75± 98,34 ng/ml). We found significant correlation of serotonin changes to the level of depression, severity of rigidity, and some cognitive symptoms. After the treatment depression level and severity of motor symptoms were decreased in the group of patients receiving fluoxetine vs placebo group. Blood serotonin level decreased even more after the treatment by fluoxetine and had no significant changes in the placebo group.

Conclusion: Serotonin level has strong correlation with the level of depression in PD patients. Thus depression in PD is just partly reactive and more endogenous, serotonin-dependent. Both depression and motor symptoms of PD can be successfully modified by SSRI.