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The effect of safinamide on axial symptoms in Parkinson's disease: a cross-sectional study

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Introduction: In Parkinson's disease (PD), dopaminergic therapy often has poor results with the "axial" symptoms. Disruptions in other neurotransmitter systems beyond the dopamine system, including the glutamatergic system, may underlie some of the axial symptoms in PD. As an example, left prefrontal glutamate levels evaluated with magnetic resonance imaging and spectroscopy were associated with difficulties in turning in bed [1]. A pilot study showed that a combination of memantine, an uncompetitive, partial antagonist of the open NMDA receptor, and L-dopa was associated with a slight, beneficial effect on axial impairment in advanced PD [2].

Objective: Exploring the effect of safinamide, a monoamine oxidase type-B inhibitor (MAOB-I) with anti-glutamatergic properties, on axial symptoms in PD patients, in comparison to other MAOB-I.

Methods: We enrolled 88 patients with PD receiving MAOB-I therapy for at least one year. We collected demographic and clinical characteristics and tests for balance and gait evaluation: the Short Physical performance battery (SPPB), the Timed up and go (TUG) test, and TUG under dual task, while executing a verbal fluency task. Continuous data were analyzed by a one-way Anova.

Results: In MAOB-I user cohort, approximately 29% (26 patients) were taking safinamide, 37% (33) rasagiline, and 33% (29) selegiline. As expected, according to the safinamide prescription's guidelines, these patients had longer disease duration ($p<0.001$), higher HY score ($p<0.001$) and higher MDS-UPDRS III score ($p<0.005$), compared to patients under rasagiline and selegiline. Safinamide patients showed higher MDS UPDRS IV score and mean LEDD with respect to patients under selegiline ($p<0.001$). SPPB, TUG and TUG dual task values were comparable between groups (p always > 0.05).

Conclusions: This exploratory study supports the hypothesis that safinamide may impact on axial symptoms in PD. These data need further exploration with a prospective study on the effect of MAO-B inhibitors on gait and balance performance.

References:

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