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Risk factors for cognitive impairment in patients with Parkinson's disease treated with Levodopa

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Background: Long-term levodopa therapy relieves the motor dysfunction associated with Parkinson's disease (PD), but it has variable effects on non-motor symptoms including cognitive dysfunction, hallucinations, and affective disorders and can worsen certain aspects of dementia-like cognitive dysfunction. Here, we investigated the relationship between levodopa treatment and the development of dementia in PD patients.

Methods: Seventy-six consecutive PD patients who took levodopa between 2011 and 2015 were included in this retrospective study. The participants were initially free of dementia and had initial daily levodopa doses of less than 600 mg. Patients who did and did not develop comorbid dementia were compared in terms of potential predictor variables including PD onset age, sex, levodopa doses, and non-dementia comorbidities.

Results: Of the 76 patients, 21 (27.6%) developed dementia, which was followed by hallucinations and insomnia. The independent predictors of incident dementia were PD onset age and second- and third-year average levodopa doses that were higher than the first-year average levodopa dose. Compared to the patients who did not develop dementia, those who did had significantly higher average daily levodopa doses and levodopa dose increases over the 6-year treatment period. In addition, the patients with higher levodopa doses were more likely to experience hallucinations.

Conclusion: These results suggest that increases in levodopa doses may be associated with greater risks of cognitive impairment in patients with PD. Therefore, motor and cognitive functions and levodopa dose increases should be regularly evaluated during long-term levodopa therapy in patients with PD.

Biography

Hyun Jeong Kim got her Baccalaureate degree in Bio-Medical Sciences from Cheong-Ju University. She is studying PhD in College of Pharmacy, Chungbuk National University. She has interest in Pharmacogenomics.

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