Antioxidant status in patients with Parkinson's disease

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Abstract

In order to determine the antioxidative status in Parkinson's disease (PD) patients, concentrations of antioxidant vitamins and the activity of antioxidant enzymes were measured in 26 PD patients (13 ♂, 13 ♀, mean age of 70 old) as well as the age- and sex-matched control subjects. All subjects were resided in Taipei area. There was no significant difference in plasma concentrations of vitamins A, C, and E between the 2 groups. However, the antioxidant activity of superoxide dismutase (SOD), glutathione peroxidase (GSHPx), and the total antioxidant status (TAS) were significant lower in the PD patient group than those in the control group ($P < 0.001$). Patients in advanced stage had significantly lower SOD activity than did early -stage patients ($P < 0.05$). There was no correlation between the severity or duration of Parkinson's disease and concentrations of antioxidant vitamins and other parameters. Only SOD activity was negatively correlated with the severity of PD ($r = -0.59$, $P < 0.05$), but it was not related with age or duration of the disease.