PLASMA HOMOCYSTEINE, VITAMIN B12 AND FOLATE LEVELS IN PATIENTS WITH PARKINSON'S DISEASE USING LEVODOPA AND LEVODOPA/ENTACAPONE

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In this study, we aimed to show levodopa or levodopa+ entacapone treatments effect on plasma homocysteine (hcy), vitamin B12 and folate levels in Parkinson's disease (PD). Twenty-two patients with PD receiving levodopa+ entacapone treatment, 52 patients with PD receiving levodopa treatment and 31 healthy subjects (control group) were included in this study.

We found that patients on levodopa showed significantly higher plasma levels of total plasma hcy and lower serum levels of vitamin B12 and folate than healthy group. The mean plasma hcy concentration in the subjects who have combination of levodopa+ entacapone was lower than that in the subjects who have levodopa, but there was no significant difference in these groups. There were no significant differences between levodopa or levodopa+ entacapone groups in mean concentrations of serum folate, vitamin B12 levels and demographic variables.

When we classified PD patients into two groups (Plasma Hcy level≤15 and 15), there were no significant difference between this groups in term of mean concentrations of serum folate, vitamin B12 levels, age, gender, initial age of PD, duration of PD.

There was no correlation between hcy levels and UPDRS score. There was correlation between entacapone treatment duration and UPDRS motor score, cognitive score, Hoehn-Yahr stage. Patients who use only levodopa showed positive correlation between hcy levels and levodopa dose.

In conclusion, levodopa causes hyperhomocysteinemia in PD patients, but patients who have combination therapy levodopa/entacapone have normal plasma folat and vitamin B12 levels. Mean concentration of Hcy did not differ between levodopa and levodopa+ entacapone groups.