

The TSA ultrasound in patients with Parkinson's disease. A case-control study, preliminary results

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Background

The correlation between cerebrovascular disease and Parkinson's disease was studied in current literature with often conflicting results and no clear correlation.

	PD Patients	Control Subjects
Patients	19	18
Female	8	6
Male	11	12
Age	74,7	74,3
Subjects hypertension affected	5	6
Cholesterol Values	214 mg/dl	224 mg/dl

Materials and Methods

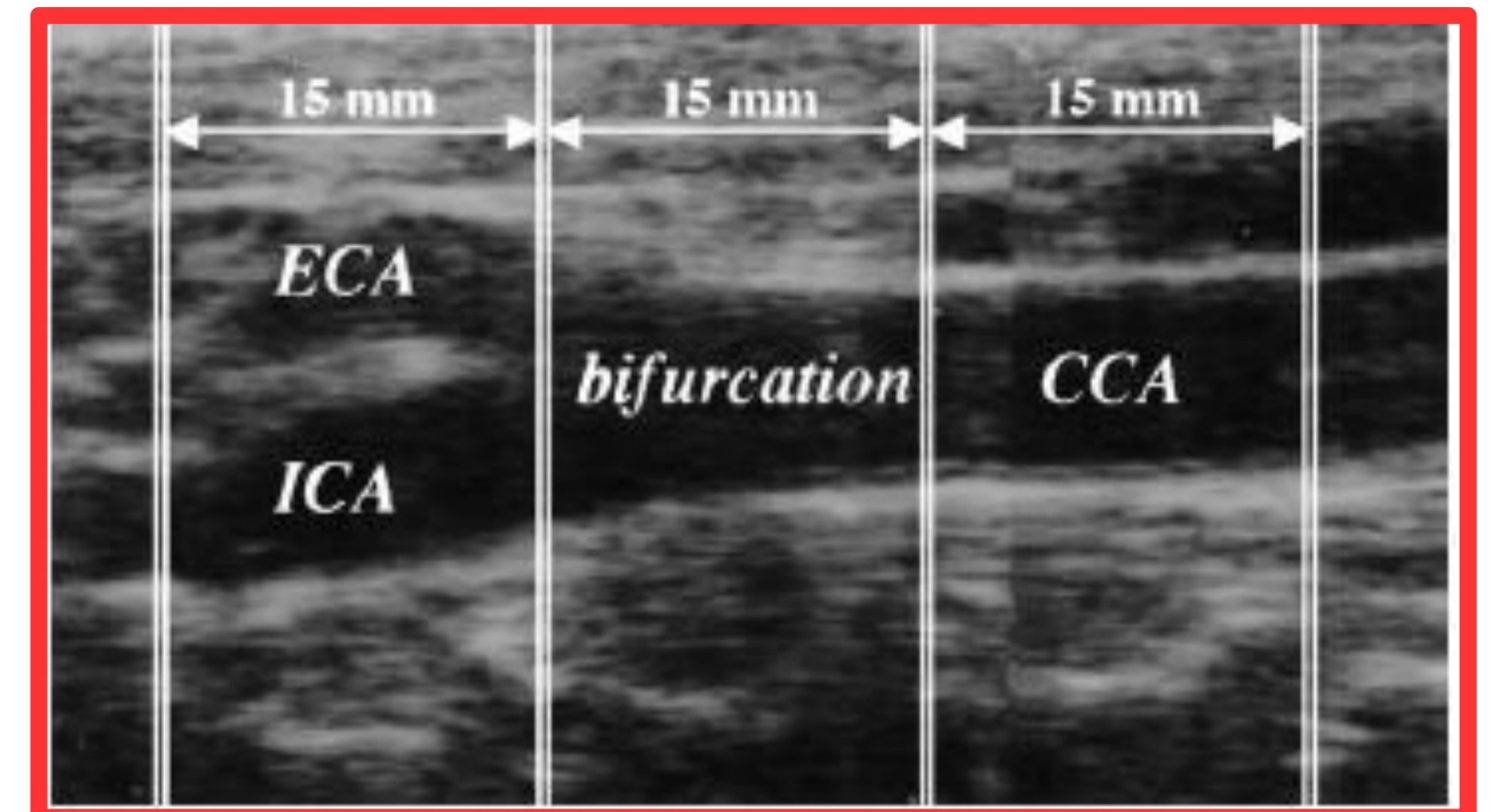
Patients with idiopathic Parkinson's disease (PD) between the ages of 70-80 years with a control group of similar characteristics. They selected 19 patients with PD (8 men and 11 women) and 18 controls (including 6 men and 12 women). All patients underwent ultrasound examination TSA full (myointimal hypertrophy measurement [IMs], parameters velocitometric tree carotid and vertebral artery, assessment of atherosclerotic plaques). For a length of 1 cm it was sampled the greatest possible number of measurements of the IMT (from a minimum of 10 to a maximum of 20 points) to minimize the error related to manual measurement. A plaque was defined as a Clearly Identified area with a thickness of 1.5 mm or blackberries.

Objective

The aim of our study was hence to assess the neurosonologic asset of a Parkinson's disease (PD) patients group and compared with a control group not suffering from PD and evaluate the potential risk of developing vascular disease in patients with PD than people not suffering from illness PD.

Results

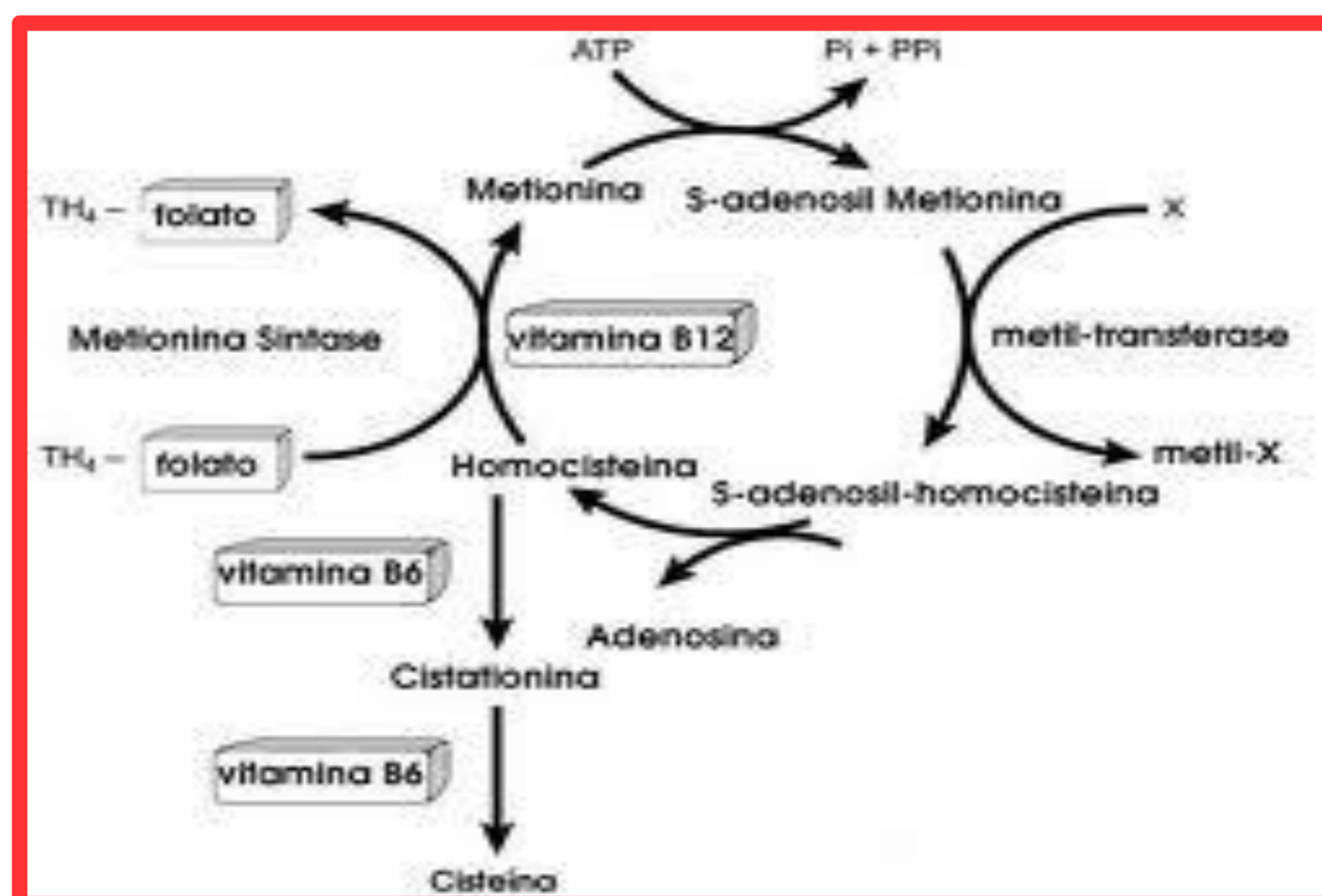
The average IMT and the IMT of each region of the carotid artery in the PD patients were not significantly higher than those in control subjects. The comparison of the IMT with the duration of L-DOPA treatment demonstrated several interesting findings. The IMTs in the PD patients ICA dx were significant correlation ($p < 0.05$) in patients treated with L-DOPA. However, individual patients of the PD group displayed either normal IMTs or hypertrophic IMTs. Also the correlation between score with HY and IMs was statistically significant ($p < 0.05$) otherwise than in controls.



Conclusion

Our study partially confirms what analyzed and evaluated in previous studies but with a new element was not detected difference values IMT and carotid atheromatous load among patients with Parkinson's disease and controls. Patients being treated with levodopa had an IMT greater control. The risk of developing vascular disease in patients with Parkinson's disease is not increased compared to controls. Patients being treated with levodopa had an IMT greater control. Interesting fact was the confirmation of the significant correlation between IMTs in ICA dx and therapy with L-Dopa, showing a strong correlation between thickening myointimal and therapy with L-Dopa and intimal thickening with motor impairment.

We expect to expand the sample to extend the data obtained and detect interesting new clinical correlations.



References

1. Nakaso K, Yasui K, Kowa H, Kusumi M, Ueda K, Yoshimoto Y, Takeshima T, Sasaki K, Nakashima K. Hypertrophy of IMC of carotid artery in Parkinson's disease in associated with L-DOPA, homocysteine, and MTHFR genotype. J Neurol Sci. 2003 Mar 15;207(1-2):19-23
2. Rektor I, Goldemund D, Sheardová K, Rektorová I, Michálková Z, Dufek M. Vascular pathology in patients with idiopathic Parkinson's disease Parkinsonism Relat Disord. 2009 Jan;15(1):24-9.
3. Oncel C, Ince B, Apaydin H, Ozekmekçi S, Uludüz D. Hypertrophy of intima media of the carotid artery due to L-dopa therapy in Parkinson's disease Adv Ther. 2008 Mar;25(3):201-7