

Research Paper (5)

Salivary alpha-synuclein (total and oligomeric form): potential biomarkers in Parkinson's disease

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Abstract

Background: Parkinson's disease (PD) is one of the most common degenerative diseases of the central nervous system (CNS). Alpha-synuclein (A-syn) plays a critical role in the pathogenesis of PD. The close relation between the salivary glands and the CNS could render the A-syn secretions in the saliva useful biomarkers for PD.

Aim of the work: To study the salivary A-syn levels in a cohort of PD Egyptian patients and to correlate these A-syn levels with the patients' clinical data and disease severity.

Patients and methods: Twenty-five PD patients and 15 age- and sex-matched healthy subjects, as a control group, were enrolled. Evaluation of PD patients was performed using the Unified Parkinson's Disease Rating Scale (UPDRS) and modified Hoehn and Yahr scale (HYS). Samples of the saliva were analyzed using the enzyme-linked immunosorbent assay (ELISA) technique for the specific anti A-syn total and anti A-syn oligomer (A-synolig).

Results: There was a statistically significant increase in A-synolig level and A-synolig/A-syn total ratio and a decrease in A-syn total level among PD patients. A statistically significant increase in A-synolig level was detected among patients having bradykinesia and rigidity as predominant symptoms. Also, there was a statistically significant positive correlation between A-synolig level and the disease duration. No statistically significant correlation was found between A-syn concentrations and disease severity.

Conclusion: Salivary A-syn total and A-synolig can be used as potential biomarkers for PD diagnosis.

Keywords: Parkinson's disease, Biomarkers, Salivary alpha-synuclein