



9th INTERNATIONAL CONFERENCE AD/PD 2009

Prague, Czech Republic, March 11-15, 2009

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Neuro- degenerative Diseases

ABSTRACTS

Advances, Concepts and New Challenges

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Guest Editors **Abraham Fisher**, Ness Ziona

Israel Hanin, Tucson, Ariz.

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Alzheimer's and Parkinson's Diseases: Advances, Concepts and New Challenges

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GENETIC MARKERS IN ALS PATIENTS WITH COGNITIVE IMPAIRMENT

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Background: The overlap between cognitive impairment and behavioral features in amyotrophic lateral sclerosis (ALS) and frontotemporal dementia is demonstrated in up to 50% of ALS patients. Behavioral features are mostly due to changes in serotonergic and catecholaminergic system.

Objective: To identify gene polymorphisms coding for proteins involved in serotonin and catecholamine metabolism and function, with the emphasis on executive function in ALS patients.

Materials and methods: In a prospective study, 16 ALS patients (10 male, 60.5±5.8 years) defined by El Escorial Criteria were investigated. Genetic markers: -1021 C/T polymorphism of DBH gene, 102 C/T polymorphism of 5-HT2A receptor gene, val¹⁵⁸met polymorphism of COMT gene and val⁶⁶met polymorphism of BDNF gene were correlated with two tests of executive functions, Controlled oral word association and Tower of London (TOL).

Results: The frequency of genotypes for particular gene polymorphism were: COMT (GG-33%, GA-53%, AA-14%), BDNF (GG-73%, GA-20%, AA-7%), DBH (CC-47%, CT-47%, TT-6%) and 5-HT2A (CC-30%, CT-60%, TT-10%). 57% of patients showed deficient word generation capability. 21% of patients were impaired on TOL Total move score and 33% of patients on TOL Total rules violation score. No significant relationship between genes polymorphism and variables of executive functional tests was found.

Conclusion: In this sample, we did not find correlations between gene polymorphisms and variables of executive functional tests. A sizable proportion of ALS patients' showed behavioral and cognitive changes within a spectrum of frontotemporal impairment. Further studies on a larger sample, however, are needed in order to confirm it.