Abstract Book

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HOT TOPICS SESSIONS

1.HOT TOPICS SESSIONS ABSTRACTS.indd 1 10/28/13 5:41 PM

Objectives: Our study aims to determine the prevalence of depression, anxiety and dementia in a hospital cohort of patients followed for Parkinson's disease (PD) and to clarify their clinical and scalable features.
Methods: The analysis was conducted on 45 patients followed for PD in the department of neurology in Charles Nicolle hospital. It was performed in all patients a clinical examination, neuropsychological exploration and brain imaging.
Results: In our cohort, the rate of depression is estimated at 62%: major depressive episodes are about 28%. Depression precedes the onset of motors symptoms even by several years or occurs during the evolution of the disease. Anxiety is less common, corresponding to 6% of the population. Impaired cognitive functions are found in 46% of patients with various aspects of cognitive decline: mild cognitive impairment (6%), lighter (17%), moderate (2%), and severe dementia (4%). Depression and anxiety can improve under dopaminergic therapy, particularly when they occur during phases of low mobility. Parkinsonian dementia occurs several years after the onset of the disease, and includes leading difficulty in retrieving information, accompanied by disorders related to the planning and carrying out actions, as well as a deficit visual and spatial representation rather than memory impairment
Conclusions: The neurologist must be aware about non motor symptoms occurring in parkinsonian patient, especially depression and anxiety, to optimize the management at any stage of the disease
References
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No conflict of interest.

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SOME EEG FEATURES IN EARLY-STAGE PARKINSON'S DISEASE PATIENTS

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Objectives: Time-frequency EEG features of early-stages in Parkinson disease (PD) were investigated.
Methods: 54 untreated PD patients of the 1st stage of Hoehn-Yahr scale were examined. EEG (scheme 10 × 20) and measured by accelerometers tremor of both hands were registered. Quantitative estimation of EEG wavelet spectrograms was performed. It is based on analysis of wavelet spectrograms local extreme time-frequency distribution (Obukhov et al., 2013).
Results: Four main differences in EEG of PD patients were found in comparison to healthy volunteers. 1) Some slowing of EEG dominant frequency band was observed. Slowing of EEG dominant frequency band confirmed the data of the previous authors 2) Reliable disordering for the EEG wavelet spectrograms local extreme distribution in frequency range higher than ~6 Hz was shown. These data were observed for the first time in this work. 3) More powerful theta rhythm in contra lateral hemisphere was found in the case of one-sided tremor. The frequency synchronization of EEG theta rhythm and tremor was shown. 4) Increase of EEG extreme in beta frequency range was revealed especially in the frontal, central and parietal brain areas. This phenomenon can be a result of changes in excitation and inhibition processes in striatum during the early stage of PD.
Conclusions: Reliable differences in EEG of early-stages PD patients in comparison to healthy volunteers were revealed. They can be considered as early clinical markers of PD.
Reference
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No conflict of interest.

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CORTICAL ATROPHY IN PARKINSON'S DISEASE WITH AND WITHOUT MILD COGNITIVE IMPAIRMENT

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Objectives: Cognitive deficits are frequent manifestations of Parkinson's disease (PD), and the presence of mild cognitive impairment (MCI) is known to increase the risk of subsequent dementia. Our aim was to evaluate the presence of cortical degeneration as measured by cortical thinning according with the presence of MCI in PD patients using structural MRI.
Methods: Thirty-four healthy controls (HC) and 90 non-demented PD patients received high-resolution structural MRI scans. MCI was determined if Z scores for at least two tests in the three most-affected cognitive domains in PD (attention/executive, memory and visuospatial/visuoperceptual) fell below 1.5 points the expected score for age, sex and education. FreeSurfer was used to assess cortical thickness and perform group comparisons.
Results: Forty patients (44%) of PD patients were classified as having MCI. Group comparisons, correcting for age and education, revealed that, compared with controls, PD patients showed cortical thinning in posterior, predominantly parieto-temporal regions. Compared with non-MCI patients, MCI patients had reduced thickness in frontal and occipital areas. Global mean cortical thickness was significantly reduced in the collapsed PD patient group and in the MCI PD subgroup compared with HC.
Conclusions: Our findings show that PD is accompanied by global cortical atrophy that predominates in posterior regions and, in patients with cognitive impairment, also involves frontal areas.
No conflict of interest.

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HEART RATE VARIABILITY AND COGNITIVE PERFORMANCE

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Objectives: Parkinson's disease affects approximately 2% of those over 65 years, and is predicted to increase. Approximately 50–80% of Parkinson's disease patients eventually experience Parkinson's disease dementia, affecting cognitive domains such as recognition and word-finding. Literature suggests changes in autonomic activity may occur prior to detectable cognitive symptoms. Few studies assess autonomic nervous system activities (as measured by heart rate variability (HRV)) for predicting cognitive impairment. The present study aimed to address this gap in the literature by identifying relationships between HRV and cognition between sexes and over a range of ages (18–35 years, 36–50 years, and 51–65 years).
Methods: HRV was derived using 3-lead electrocardiogram recordings (10 minutes baseline and 10 minutes active cognitive task) (n = 191). Two psychometric assessment tools were administered (Mini-Mental State Examination and Cognistat).
Results: Different cognitive domains were linked to HRV parameters in the 3 age and sex groups. For example, in females 18–35 years, low frequency (sympathetic drive) during baseline was inversely related to calculation skill (r = −0.3359; p = 0.034). In males, 51–65 years, total HRV activity during baseline was inversely linked to memory performance (r = −0.4976; p = 0.036).
Conclusions: Findings suggest HRV is linked to performance in different cognitive domains for different age groups and between sexes. These and future findings may determine those at higher risk of cognitive impairment, prior to detectable cognitive symptoms seen in Parkinson's disease dementia. Intervention strategies can be applied sooner in life to delay cognitive decline progression.
No conflict of interest.

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INCREASED PERIPHERAL LEVELS OF SOLUBLE TUMOR NECROSIS FACTOR RECEPTORS ARE ASSOCIATED WITH POORER COGNITIVE PERFORMANCE IN PARKINSON'S DISEASE

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Objectives: The pathogenesis of the progressive loss of dopaminergic neurons in Parkinson's disease (PD) remains elusive. Accumulating evidence suggest the involvement of immune and/or inflammatory mechanisms. Non-motor symptoms experienced by PD patients - particularly cognitive impairment - are frequent and disabling. Inflammation has been associated to cognitive decline in a range of neuropsychiatry disorders. This study aimed to compare

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