FATIGUE IS NOT AN INDEPENDENT PREDICTOR OF MORTALITY IN PARKINSON'S DISEASE

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INTRODUCTION AND AIM: Fatigue is one of the most common non-motor symptoms of Parkinson's disease (PD), leading to worse quality of life. However, little is known about its relationship with mortality in PD patients. This study evaluated fatigue as a predictor of mortality, controlled for age, gender and disease severity.

MEASURES:

Sample

153 consecutive non-demented PD patients

Statistical Analysis

Cox regression analysis

Measures

socio-demographic background
UPDRS motor part
MFI general fatigue part
Mortality: 7.5 years of follow-up

RESULTS: Out of 153 patients, 45 (29.4%) have died during the follow up period. The average age at death was 80.2 years and mean time from disease diagnosis to death was 12.4 years. Independent predictors of mortality in our study were age (HR 1.98 for 10-years increase, 95%CI 1.44; 2.56, $p < 0.001$), UPDRS motor score (HR 1.48 for 10-point increase, 95%CI 1.18; 1.79, $p = 0.002$) and male sex (HR 2.04, 95%CI 1.10; 3.80, $p = 0.024$). General fatigue was a predictor of mortality on crude analysis when controlled for age and gender only, but failed to be an independent predictor of mortality when adjusted for age, gender and UPDRS motor score.

Table 1. Baseline characteristics of the study population (N = 153)

	Alive	Dead	Significant difference
Number of patients	108	45	
Gender (male/female)	52/56	28/17	p<0.05
Mean age at the end of study or at death	73,1	80,2	p<0.02
UPDRS motor part	13,52	21,38	p<0.001
MFI general fatigue	13,16	14,64	p<0.05

FIG. 1. Mean age at the end of follow-up or at death

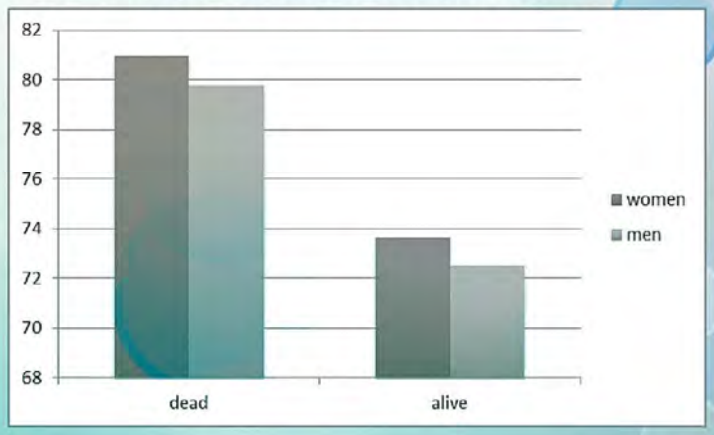
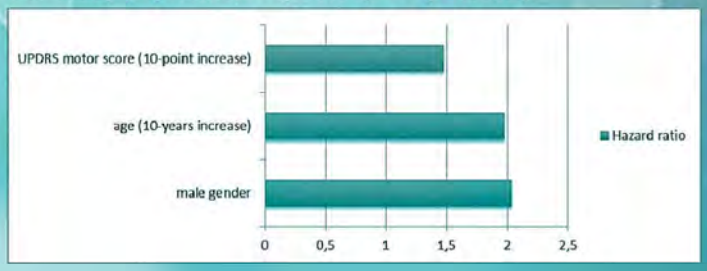


FIG.2. Hazard ratios of independent predictors of mortality in our study (* p<0.05, ** p<0.01, *** p<0.001)



CONCLUSION: Fatigue is not an independent predictor of mortality in Parkinson's disease

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This work was supported by the Slovak Research and Development Agency under contract No. APVV-20-038305 (20%) and APVV-0220-10 (60%). Furthermore, this work was partially supported by the Agency of the Slovak Ministry of the Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of the EU under project No. ITMS: 26220120058 (20%).

Volume 18 Supplement 1 Parkinsonism
January 2012 & Related Disorders

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Contact details for questions arising after acceptance of an article, especially those relating to proofs, are provided after registration of an article for publication.

Publication information: *Parkinsonism & Related Disorders* (ISSN 1353-8020). For 2011, volume 17 is scheduled for publication. Subscription prices are available upon request from the Publisher or from the Customer Service Department nearest you or from this journal's website (http://www.elsevier.com/locate/parkreldis). Further information is available on this journal and other Elsevier products through Elsevier's website: (http//www.elsevier.com). Subscriptions are accepted on a prepaid basis only and are entered on a calendar year basis. Issues are sent by standard mail (surface within Europe, air delivery outside Europe). Priority rates are available upon request. Claims for missing issues should be made within six months of the date of dispatch.

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Printed in China

PD (LBP), were enrolled in the study. Pain intensity by visual analog scale (VAS), electrical pain thresholds (PTh) and the NFRTh, were determined. K-ratio (PTh/NFRTh) was analyzed. Patients undergone clinical examination before and after dopamine administration. Patients had no significant differences in the duration, Hoehn & Yahr staging or motor symptoms PD and therapy

Results: Patients PD+PP had significantly ($p < 0.05$) higher pain intensity (7.25±1.76 VAS) then PD+LBP (6.73±1.39 VAS), without significantly different with LBP (7.38±1.50 VAS). Patients PD+PP had significantly ($p < 0.05$) more types and localizations of pain (2.75±1.48), then PD+LBP (1.63±0.67) and LBP (1.12±0.38). NFRTh was significantly ($p < 0.05$) higher in PD+PP (19.25±6.21), and PD+LBP (18.31±4.76), PD-P (17.32±5.87), then in LBP (18.3±4.76). Ratio K was significantly ($p < 0.05$) lower in PD+PP (0.76±0.25) and PD+LBP (0.74±0.21) then in other groups. After dopamine administration all PD patients showed a decrease of pain intensity ($p < 0.05$). It was more significant ($p < 0.05$) in PD+PP (5.1±1.72 VAS). NFRTh significantly ($p < 0.05$) decrease (14.37±4.78) and ratio K is normalized (0.93±0.15).

Conclusion: PP in PD is an example of dopaminergic-assosiated pain due to dopaminergic dysfunction.

1.045
EVALUATION OF REACTION TIME IN PARKINSON DISEASE

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Introduction: At present, the evaluation of Parkinson's disease (PD) relies on clinical scales, mainly Unified Parkinson's Disease Rating Scale (UPDRS); however, other objective methods have been considered including timed tests, functional imaging and reaction time (RT).

Objective: To evaluate RT in a group of patients with PD.

Patients and Methods: We studied RT of 27 patients with PD (18 male, 9 female; age 62.7±10 years; age at onset 54.0±13 years) and of 24 healthy controls of similar age (age 56.3±5). Motor evaluation comprised UPDRS and RT. Clinical evaluation was performed in "on" medication.

RT was measured by the time the patients/controls take to push the keyboard once a visual signal randomly appeared on the computer screen. A computer software directly calculated the RT for each patient. RT was repeated 40 times on both sides (rigth/left hand) for every patient/control. Mean RT for both sides was calculated in.

Results and Conclusions: RT discriminated between patients and controls (average RT for patients with PD: for controls: $p > 0.02$). However no correlation was found between RT with age, age at onset, evaluation in years, UPDRSS (total and motor UPDRS).

In summary RT may be useful to discriminate PD from controls, but it does not correlate with clinical parameters.

1.046
CLINICAL CORRELATES OF APATHY IN EARLY PARKINSON DISEASE: THE ANIMO STUDY

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Objective: Little is known about apathy in Parkinson's disease (PD). We determined the clinical correlates of apathy in a large representative sample of patients with early PD.

Methods: Cross-sectional survey (ANIMO study) including a sample of non-demented patients (diagnosis of PD ≤2.0 years) from 102 PD outpatient clinics in Spain. Structured questionnaires were used for clinical and sociodemographic variables including disease severity and comorbidity. Apathy and depression were evaluated using the Lille Apathy Rating Scale [LARS] (cut-off score of −22) and DSM-IV TR criteria), respectively. Clinical comparisons and correlations were performed using nonparametric tests. Regression analyses were used to test the association of clinical variables with apathy.

Results: We recruited 557 PD patients (60.3% men) with a mean age of 68.8±9.7 years, and UPDRS part III score of 21.1±10.8. Apathy only was diagnosed in 186 patients (33.4%), and apathy and depression in 215 patients (38.6%). Patients with higher comorbidity (OR = 1.10, 95% CI 1.01–1.20), and motor impairment (OR = 1.04, 95% CI 1.01–1.07), and lower education (OR = 2.16, 95% CI 1.21–3.85) had higher odds of having apathy only, in contrast to patients living in a rural environment (OR = 0.42, 95% CI 0.25–0.75). LARS scores were significantly correlated with UPDRS scores ($r_s = 0.44$, $p < 0.001$), predominantly with axial scores ($r_s = 0.43$, $p < 0.001$)

Conclusions: Apathy is a very common and disabling non-motor symptom separable from depression in early PD. Patients with high comorbidity, motor impairment and low education are at risk of suffering from apathy.

1.047
NEW OBJECTIVE APATHY SCALE FOR PARKINSON'S DISEASE

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Objective: Apathy is one of the essential psychiatric symptoms in Parkinson's disease (PD). However, no appropriate scales are present. So, we work out a new objective apathy scale for PD. Our scale is formulated drawing on "motivation grade scale of daily life behavior included in CAS: clinical assessment for spontaneity" which is introduced by Japan Society for Higher Brain Dysfunction under the author's permission. We find out apathy in PD by our new scale.

Methods: Our objective apathy scale was checked by healthy volunteers for data validation, so that good reliability was conducted comparing with original edition of motivation grade scale of daily life behavior. After that we investigate 96 (male:female = 40:56, mean age = 70.7) patients with PD for their psychiatric states especially apathy. For this investigation we used several test battery such as MMSE, FAB (frontal assessment battery), BDI-II (Beck depression inventory 2nd edition), UPDRS part III and our objective apathy scale. Before investigation, our research project were assessed our hospital ethical review board, and approved by them.

Results: Apathy was detected in 31.1% of all the patients, 19.6% both apathy and depression in, 11.7% presented only apathy. Furthermore, invers correlation was revealed between apathy scale and FAB. There was no statistical significant difference among UPDRS and depression.

Conclusions:

1. Both apathy and depression were revealed high frequency in PD.
2. Objective apathy scale was good for PD, and invers correlation was detected compared with FAB.
3. We will investigate our battery for larger number of patients hereafter.

1.048
FATIGUE IS NOT AN INDEPENDENT PREDICTOR OF MORTALITY IN PARKINSON'S DISEASE

M. Skorvanek[1], J. Rosenberger[2], I. Rajnicova[3], J. van Dijk[4], J. Groothoff[4], Z. Gdovinova[1]. *[1]Neurology, [2]1. Internal Clinic, Faculty of Medicine, P.J. Safarik University Kosice, [3]Kosice Institute for Society and Health, P.J. Safarik University Kosice, Kosice, Slovak Republic; [4]Department of Social Medicine, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands*

Introduction: Fatigue is one of the most common non-motor symptoms of Parkinson's disease (PD), leading to worse quality of life. However, little is known about its relationship with mortality in PD patients. This study evaluated fatigue as a predictor of mortality, controlled for age, gender and disease severity.

Measures: 153 consecutive non-demented PD patients were enrolled. At baseline, data were collected on socio-demographic background, functional status was evaluated by the UPDRS motor part and fatigue was assessed by Multidimensional Fatigue Inventory (MFI) general fatigue part. Mortality was documented up to 7.5 years of follow-up. Cox regression analysis was done to explore if fatigue predicts mortality; the analysis was controlled for age, gender and UPDRS motor score.
Results: Out of 153 patients, 45 (29.4%) have died during the follow up period. The average age at death was 80.2 years and mean time from disease diagnosis to death was 12.4 years. Independent predictors of mortality in our study were age (HR 1.98 for 10-years increase, 95%CI 1.44; 2.56, $p < 0.001$), UPDRS motor score (HR 1.48 for 10-point increase, 95%CI 1.18; 1.79, $p = 0.002$) and male sex (HR 2.04, 95%CI 1.10; 3.80, $p = 0.024$). General fatigue was a predictor of mortality on crude analysis when controlled for age and gender only, but failed to be an independent predictor of mortality when adjusted for age, gender and UPDRS motor score.
Conclusion: Fatigue is not an independent predictor of mortality in Parkinson's disease.

1.049
CORRELATION BETWEEN CLINICAL CHARACTERISTICS AND SLEEP DISTURBANCES IN PARKINSON'S DISEASE

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Introduction: Sleep disturbances are one of the most common nonmotor symptoms of Parkinson's Disease (PD). The causes of sleep disturbances in PD are numerous, and many patients may have several factors that contribute to such symptom.
Object: The objective of this study is to evaluate an association of various sleep disturbances with clinical characteristics, cognitive impairment and depression in PD.
Method: A total of 82 patients with PD (32 males, age 66.8±8.5 years, mean duration 48.1±41.1months) were recruited. All patients performed cognitive test, Back Depression Inventory and various sleep questionnaires such as Epworth Sleepiness Scale (ESS), Insomnia Severity Index (ISI), Pittsburgh Sleep Quality Index (PSQI), Parkinson's Disease Sleep Scale (PDSS).
Result: BDI was correlated with ISI ($p = 0.003$), PSQI ($p = 0.01$), and PDSS ($p = 0.001$) especially sleep initiation, restless leg symptom, nocturnal sensory symptom subscore. MMSE and MoCA were correlated with PDSS ($p = 0.04$ and $p = 0.026$), especially dreaming subscore.
Conclusion: The results suggest that depression may attribute to sleep initiation difficulty, restless leg symptom, and nocturnal sensory symptom. Cognition impairment is related to vivid dreaming.

1.050
SLEEP DISORDERS IN PATIENTS WITH PARKINSON'S DISEASE

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Research was aimed to evaluate correlation between evidence of excessive daytime sleepiness (EDS) and rapid eye movement (REM) sleep behavior disorder (RBD) with cognitive impairment and hallucinations.
Twenty six patients (F/M = 11/15, 66.6±7.8 years old) with PD having subjective complaints of sleep disorder were studied. Patients were rated with the following scales: MMSE, FAB, PDSS, ESS. 17 patients underwent a polysomnography (PSG).
EDS was revealed in 22 patients (84.5%). The scale mean values were: ESS scores 9.5±4.9, 15th subscale of PDSS was 4.5±3.3. Cognitive impairment (MMSE score 24.0±3.2 and FAB – 11.1±4.4) and hallucinations (PDSS7 was 6.5±2.9) were detected in these patients. Negative correlations between ESS and FAB ($r = -0.44$; $p < 0.05$), ESS and 7th subscale of PDSS ($r = -0.56$; $p < 0.05$) were determined. Results of EDS on scales corresponded to results of PSG: mean LS was 9.7±5.1 min. with fast transition to stage II of sleep. ESS scores significantly negative correlated with LS scores ($r = -0.62$; $p < 0.05$). Quality of a night dream was unsatisfactory at all patients: PDSS was 76.4±18.5. In 16 (93%) of 17 patients who had had PSG a sleep structure was disruption with fragmentation, decrease in sleep quality as increasing the wake time during sleeping, reduction of its efficacy (TST/TIB 57.3±12.3%) were determined. 12 (80%) patients had RBD. The degree of cognitive impairment in this group was significant higher: the MMSE score – 22.3±4.3, FAB – 6.2±3.1 ($p < 0.05$).
Sleep disorders correlate with degree of cognitive impairment and presence of hallucinations

1.051
INSOMNIA IS LINKED MORE TO AFFECTIVE THAN MOTOR SYMPTOMS IN PARKINSON'S DISEASE

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Objectives: To assess role of insomnia in relation to affective and motor symptoms and activities of daily living (ADL) in Parkinson's disease (PD).
Methods: Forty-eight PD patients aged 42–79 (mean=63.3, F=47.9%) were evaluated. PD was diagnosed according to UK PDSBB criteria. Patients passed evaluation through UPDRS, Hoehn & Yahr (H&Y) staging and Schwab & England ADL Scale. Depression and anxiety were assessed by Hamilton Depression (HAMD) and Anxiety (HAMA) scales. Patients were divided into 2 groups: with and without insomnia complaint.
Results: Thirty-six patients had insomnia (75%). Insomniac PD patients had significantly higher rates on HAMD (19.9 vs. 9.2, $p < 0.001$), HAMA (16.2 vs. 7.8, $p < 0.005$), higher rates of UPDRS domains I (Mentation and mood) (4.3 vs. 2.7, $p < 0.03$) and II (ADL) (14.9 vs. 9.7, $p < 0.03$) and also lower rates of ADL scale scores (73.9 vs. 86.7%, $p = 0.014$) in comparison with non-insomniac PD patients. There was no statistically significant difference between groups regarding H&Y stage (2.3 vs. 1.9, $p = 0.082$), UPDRS domain III (motor examination) (30.4 vs. 24, $p = 0.2$) and UPDRS total score (49.7 vs. 35.8, $p = 0.52$). Eight out of 23 females (34.8%) and 5 out of 25 males (20%) had insomnia.
Conclusion: According to our results insomnia is prevalent among PD patients. Insomnia seems to be closely related to depression and anxiety in PD. Female sex may be more predisposed to insomnia in PD. ADL was significantly impaired in PD patients with insomnia. Interestingly, insomnia did not have considerable relation to disease severity and motor disability in our sample.

1.052
SLEEP DISORDERS IN DIFFERENT CLINICAL SUBGROUPS OF PARKINSON'S DISEASE

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Objective: This study sought to evaluate quality of sleep in patients with different subtypes of Parkinson's disease (PD) and analyze their clinical characteristics and related factors.
Methods: 107 consecutive patients with idiopathic PD, including 47 patients with the tremor-dominant PD subtype and 60 patients with the postural instability and gait difficulty (PIGD)-dominant subtype, were interviewed and assessed using Parkinson's Disease Sleep Scale (PDSS) & Epworth Sleepiness Scale (ESS), Unified Parkinson's Disease Rating Scale (UPDRS), Hamilton Depression Rating Scale (HAMD), and Mino-mental State Examination (MMSE).
Results: The total PDSS score in the PIGD-dominant subtype (115.72±19.28) was significantly lower than that in the tremor-dominant subtype (125.28±13.68, $P = 0.003$). Alternatively, the