

DEPRESSION AND DEMENTIA IN PARKINSON'S DISEASE

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SUMMARY – Parkinson's disease (PD) is a neurodegenerative disorder causing not only motor dysfunction but also cognitive, psychiatric, autonomic and sensory disturbances. Depression is the most common psychiatric disturbance identified in patients with PD and has been shown to be more common in PD than in other chronic and disabling disorders, occurring in approximately 40% of PD patients. However, the prevalence and clinical features associated with depression in PD remain controversial. Dementia is increasingly recognized as a symptom associated with idiopathic PD, and is found in up to 40% of all patients suffering from that condition. The aim of this study was to estimate the prevalence of depressive and dementia symptoms in PD patients. The study included 35 consecutive patients with PD, 13 (37.4%) male and 22 (62.6%) female (mean age 62.9±11.0, range 36-85 years), mean duration of disease 4.7±2.9 (range 1-10) years, hospitalized during one year at Clinical Department of Neurology, Tuzla University Clinical Center, Tuzla, Bosnia and Herzegovina. The Mini Mental State Examination (MMSE) was used for assessment of cognitive deterioration and Beck Depression Inventory (BDI) for depression. Computerized tomography was performed in all patients. According to BDI scale, depressive symptoms were present in all 35 PD patients: minimal in 4 (11.4%), low in 7 (20%), moderate in 8 (22.8%), severe in 9 (25.4%) and extreme in 7 (20%) patients. On MMSE scale, 9 (25.4%) patients were free from cognitive deterioration and 26 (74.6%) patients had moderate to severe deterioration, but 21 (60%) patients (7 (33.33%) male and 14 (66.66%) female) had symptoms of dementia (MMSE score ≤23). Using MMSE scale, 8 (22.8%) patients were free from dementia and 27 (77.2%) patients had some cognitive deterioration. Very mild symptoms of dementia were found in 6 (25.9%) and overt features of dementia in 21 (74.1%) PD patients. So, out of 35 PD study patients, 21 (60%) (7 (33.3%) male and 14 (66.7%) female) had symptoms of dementia (MMSE score ≤23). In conclusion, depressive and dementia symptoms are common in PD patients.

Key words: *Depression; Dementia; Parkinson's disease*

Introduction

Parkinson's disease (PD) is one of the most common neurodegenerative disorders causing not only motor dysfunction but also cognitive, psychiatric, autonomic and sensory disturbances¹⁻⁴. Depression is the most common psychiatric disturbance identified

in patients with PD and has been shown to be more common in PD than in other chronic and disabling disorders, occurring in approximately 40% of these patients. However, the prevalence and clinical features associated with depression in PD remain controversial. Dementia is increasingly recognized as a symptom associated with idiopathic PD, and is found in up to 40% of all patients suffering from that condition. The prototype of dementia in PD is dysexecutive syndrome with impaired attention, executive functions and secondarily impaired memory. It is thought to be the result of a combination of both subcortical

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Received August 11, 2014, accepted January 21, 2015

and cortical changes⁵. Inadequate attention is being paid to dementia, anxiety and depressive symptoms in neurological disorders, although these problems are known to influence the patient's neurological outcome^{6,7}.

The aim of this study was to estimate the prevalence of depressive and dementia symptoms in PD patients.

Patients and Methods

The study included 35 consecutive PD patients, 13 (37.4%) male and 22 (62.6%) female, hospitalized during one year at Clinical Department of Neurology, Tuzla University Clinical Center, Tuzla, Bosnia and Herzegovina. The mean age of study patients was 62.9 (± 11.0) years (range 36-85 years) and the mean disease duration 4.7 (± 2.9) years (range 1-10 years). The Mini Mental State Examination (MMSE)⁸ was used for assessment of cognitive deterioration and Beck Depression Inventory (BDI)⁹ for depression. Computerized tomography (CT) was performed in all patients.

Results and Discussion

Depression and dementia are common problems in PD, and the commonality of certain symptoms in demented and depressed patients suggests that dementia and depression in PD may be related and that in PD depression may be a fore-runner of dementia¹⁰. A long-term follow up study by Hely *et al.*¹¹ showed that 48% of patients fulfilled the criteria for dementia. We know today that dementia in PD has a much higher prevalence than previously thought. Furthermore, we now face dementia in PD patients more often as we are able to treat motor problems in PD for more years, therefore the non-motor problems become much more prominent.

In our study, mild cortical atrophy was confirmed by CT scan in 25 (71.42%) patients (10 (40%) male and 15 (60%) female) (Fig. 1). In CT studies with longitudinal follow up of the relationship between supratentorial and infratentorial brain atrophy in PD, Kitani *et al.*¹² demonstrated a significant increase in brain atrophy compared with controls. They postulated that infratentorial brain atrophy found in patients with PD could well be secondary to supratentorial brain atrophy.

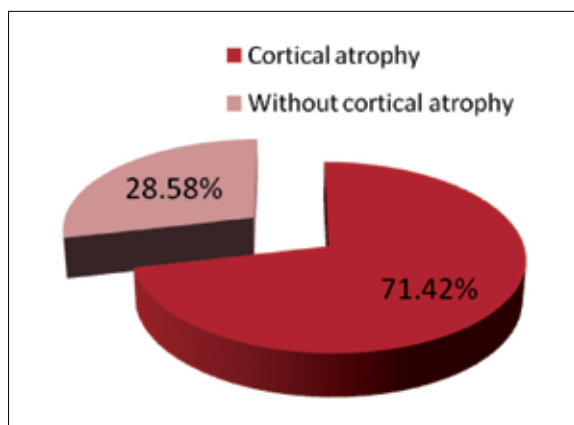


Fig. 1. Cortical atrophy in Parkinson's disease patients confirmed by computerized tomography.

On MMSE scale, 8 (22.8%) PD patients were free from dementia and 27 (77.2%) patients had some cognitive deterioration. Six (25.9%) PD patients had very mild symptoms of dementia and 21 (74.1%) patients had clear features of dementia. So, out of 35 PD study patients, 21 (60%) (7 (33.3%) male and 14 (66.67%) female) had symptoms of dementia (MMSE score ≤ 23) (Fig. 2).

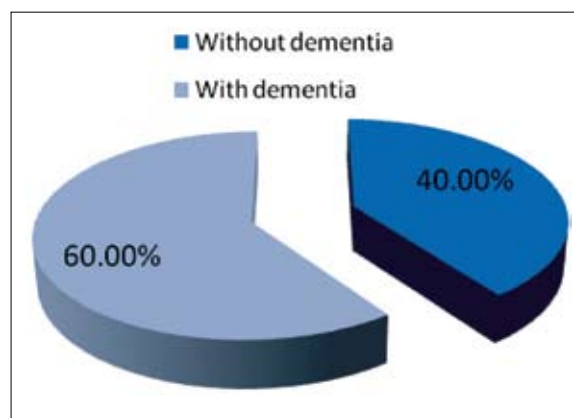


Fig. 2. Distribution of Parkinson's disease patients according to the presence of dementia.

Estimates of the prevalence of depression in PD vary considerably, mostly because of differences in sampling methods and case ascertainment. Studies based on community samples appear to produce lower prevalence figures. Looking at the studies as a whole, the prevalence of depression in PD is probably between 20% and 45%, with the lower figures relating to community based studies^{2,13,14}.

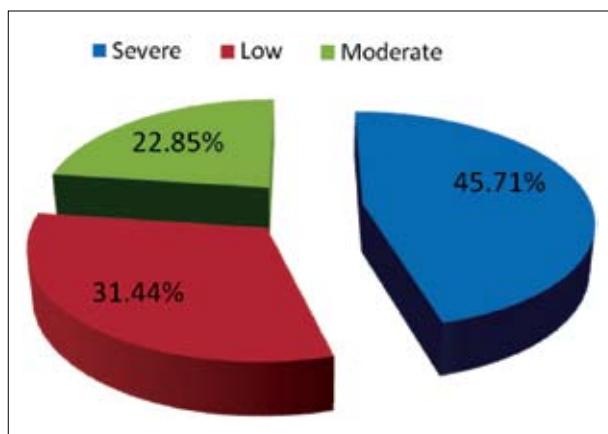


Fig. 3. Distribution of Parkinson's disease patients according to depressive symptoms.

In this study, some depressive symptoms were present in all 35 PD patients, but moderate depression was recorded in 8 (22.8%) patients (3 (37.5%) male and 5 (62.5%) female) and severe in 16 (45.7%) patients (8 (50%) male and 8 (50%) female) (Fig. 3).

Conclusion

Depressive and dementia symptoms are very common in PD patients. It was clear in this study (dementia in 60% and depression in 45.7% of PD patients), as previously shown in many studies. These results are important for clinical practice. We have to try to recognize dementia and depressive symptoms, to educate patients and their families, and to treat moderate and severe depressive symptoms by appropriate therapies using drugs, as well as different psychotherapy techniques.

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Sažetak

DEPRESIJA I DEMENCIJA U PARKINSONOVOJ BOLESTI

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Parkinsonova bolest (PB) je neurodegenerativna bolest koja uzrokuje ne samo motorne nego i kognitivne, psihijatrijske, autonomne i senzorne poremećaje. Depresija je najrašireniji psihijatrijski poremećaj koji se identificira kod PB. Pokazano je da je rašireniji u PB (pojavljuje se u oko 40% bolesnika) nego u drugim kronično onesposobljavajućim bolestima. Međutim, učestalost i klinička prezentacija depresivnosti u PB su još uvijek na neki način kontroverzna područja. Nadalje, demencija se sve više prepoznaje kao simptom udružen s idiopatskom PB. Njezino pojavljivanje utvrđeno je u oko 40% ovih bolesnika. Cilj je ove studije bio utvrditi učestalost depresivnih i dementnih simptoma u PB. Analizirano je 35 bolesnika s PB, 13 (37.41%) muškog i 22 (62.49%) ženskog spola (prosječne dobi 62.9 ± 11.3 godine, raspon 36-85 godina), prosječnog trajanja bolesti od 4.7 ± 2.9 godina (raspon 1-10 godina), koji su bili hospitalizirani u jednogodišnjem razdoblju na Klinici za neurologiju Univerzitetskoga kliničkog centra u Tuzli (Bosna i Hercegovina). Za procjenu kognitivne deterioracije korišten je upitnik za *Mini Mental Status* (MMS), a za depresiju Beckova ljestvica za depresiju. Kod svih bolesnika je napravljena kompjutorizirana tomografija mozga. Prema Beckovoj ljestvici za depresiju, depresivni su simptomi bili prisutni u svih 35 ispitivanih bolesnika s PB: minimalno u 4 (11.4%), nisko u 7 (20%), umjereno u 8 (22.8%), teško u 9 (25.4%) i naglašeno u 7 (20%) bolesnika. Prema ljestvici MMS, bez kognitivne deterioracije je bilo 8 (22.8%), a sa stanovitim kognitivnim poremećajem 27 (77.2%) bolesnika. S umjerenom kognitivnom deterioracijom je bilo 6 (25.9%) bolesnika, a s jasnim znacima demencije 21 (74.1%) bolesnik s PB. Dakle, od 35 analiziranih PB bolesnika simptomi demencije ($MMS \leq 23$) utvrđeni su u 21 (60%) bolesnika (muškaraca 7 ili 33.3%, žena 14 ili 66.7%). U zaključku, depresivni i dementni simptomi su rašireni u Parkinsonovoj bolesti.

Ključne riječi: *Depresija; Demencija; Parkinsonova bolest*