

MENTAL CHANGES IN PARKINSON'S DISEASE A Study of Fifty Patients

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ABSTRACT

Neuropsychiatric disorders in Parkinson's disease include behavioral, emotional and cognitive changes. They are common and varied and can be associated with impairments. The aim of this study is to evaluate the prevalence of the mental changes in the United Arab Emirates' patients with Parkinson's disease and to compare these results with other studies in the literature. The importance of early detection and treatment of these mental symptoms were discussed. Fifty patients with Parkinson's disease were assessed for the presence of depression, sleep disorders, visual hallucination, psychosis and dementia. The mean age of the patients was 71.1 years (range 55 – 92 years). The duration of the disease was 7.8 years (range 2 – 25 years). Thirteen patients (26%) had dementia, eleven patients (22%) had depression. Five patients (10%) had psychosis; four patients out of the five also had dementia. Three patients (6%) had sleep disorders and the same three patients (6%) also had visual hallucination. Visual hallucination and sleep disorders were induced by dopaminergic medications. In conclusion, psychiatric manifestations are found to be not uncommon in our patients. The results are lower than other reports in the literature. These mental changes are under-diagnosed and under-treated. Early detection and treatment of these symptoms can improve the quality of life for these patients and their care-givers.

Keywords: Parkinson's disease, depression, sleep disorders, visual hallucination, psychosis, dementia.

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INTRODUCTION

Parkinson's disease is a chronic disease due to neurodegeneration of more than 50–60% of dopaminergic neurons from the substantia nigra resulting in critical dopamine deficiency in the striatum (Samuels & Feske 2003). Excess inhibitory output of the basal ganglia complex produces the bradykinesia and rigidity of Parkinson's disease (Samuels & Feske 2003). Dopaminergic therapy in the form of levodopa or dopaminergic agonists can relieve the motor symptoms but also can induce psychiatric disorders secondary to primary pathology. These psychiatric symptoms are described by patients as being more troublesome; affect their quality of life and increase care givers stress (Gulati 2004). Unfortunately these are often under-recognized and under-treated, in primary and secondary care settings (Arslad et al. 2000; Findeyl et al. 2003; Karlsen et al. 1999). The neuropsychiatric changes include behavioral, emotional and cognitive changes. Behavioral and emotional disorders include depression, sleep disorders and hallucinations. Cognitive disorders consist of psychosis and dementia. These disorders usually occur after several years from the onset of the

disease. Sleep disorders include mainly vivid dreams, sleep talking and sleep movements leading to falls with possibility of injuries. It is important to differentiate sleep disorders from early features of dementia or psychosis (Ndo et al. 2001; Tandberg et al. 1998). The quality of depression in Parkinson's disease is different from that in Idiopathic Depression with fewer suicide attempts and fewer feelings of guilt and failure with more irritability and pessimism about the future (Marsden 1990). Antidepressants have been found to improve depression in Parkinson's disease patients in a limited number of studies (Anderson et al. 1980; Goetz et al. 1984). Visual hallucination is the experience of seeing real-appearing image in the presence of a clear sensorium. Visual hallucinations in Parkinson's disease are free of disturbing content, unlike that ones occurring in primary psychosis (Sanchez-Ramos et al. 1996). They may persist for seconds, minutes or hours and tend to reoccur. Psychosis is a major mental disturbance in which reality is significantly misperceived.

Management of psychosis in Parkinson's disease includes reduction of dopaminergic medication, attempting a drug holiday or commencing a neuroleptic

antipsychotic drug (Naimark et al. 1996; Thanvi et al. 2005). It is thought that patients with Parkinson's disease can develop dementia secondary to its primary pathology leading to neuronal atrophy (Hudig et al. 2000). To evaluate the prevalence of these mental changes in United Arab Emirates' patients with Parkinson's disease, we assessed fifty patients who were being followed up in the neurology clinic at Al-Qassimi Hospital.

MATERIALS AND METHODS

In this prospective observational study, we included fifty local patients with Parkinson's disease for two years duration or more. The patients were being followed in the neurology clinic at Al-Qassimi Hospital, Sharjah, between January 2004 and January 2005. Exclusions criteria were past history of psychiatric disease, stroke, brain tumours or severe metabolic diseases. Patients who were bed ridden or unable to come for follow-up were not included. The patients were followed up every three months. Each patient, with the help of a close relative or a companion, was assessed for the symptoms of the following mental disorders: Depression, using geriatric depression scale; sleep disturbances in the form of vivid dreams, sleep talking and sleep movements or falls during sleep; presence of hallucinations which consist of hearing voices (Auditory), seeing persons, animals or things (visual) or smelling abnormal odours (olfactory); psychosis such as aggression, inappropriate behaviour and delusions; and dementia, using Mini-mental State Examination (MMSE). A patient had a score less than 25, a brain CT scan was done to exclude other cerebral causes of dementia. The number of patients suffering from each mental disorder was put as percentage.

RESULTS

The mean age of the patients was 72.1 years with the range between 55–92 years. The male to female ratio was 3:2; the mean duration of Parkinson's disease was 7.8 years with the range between 2–25 years (Table 1). Thirteen patients (26%) had dementia. Eleven patients (22%) had depression. Five patients (10%) had psychosis. Four of these five with psychosis also had dementia. Three patients (6%) had sleep disorders. The same three patients (6%) also admitted having visual hallucination in the form of seeing silent persons who disappear on attempt to touch. Other types of hallucinations were not present.

DISCUSSION

The literature shows that there is an increase incidence of depression in Parkinson's disease compared to similar age matched controls (Samuels & Feske 2003). Other reports estimated the incidence of depression in Parkinson's disease range between 15-50% (Holroyd et al. 2005; Lemke et al. 2004). Whether the depression is intrinsic to the disease or reactive is debated (Cummings 1992). Depression is reported to be the most significant factor impairing the quality of life (QOL) (Behari et al. 2005). In spite of this fact, depression is frequently unrecognized because of the overlapping clinical symptoms of depression and Parkinson's disease.

Table 1. The characteristics of Patients (N=50).

Gender Ratio (M:F)		Age (years)		Disease duration (Years)	
No. of Patient	Percentage %	Mean	Range	Mean	Range
30 : 20	60% : 40%	72.1	55-92	7.8	2-25

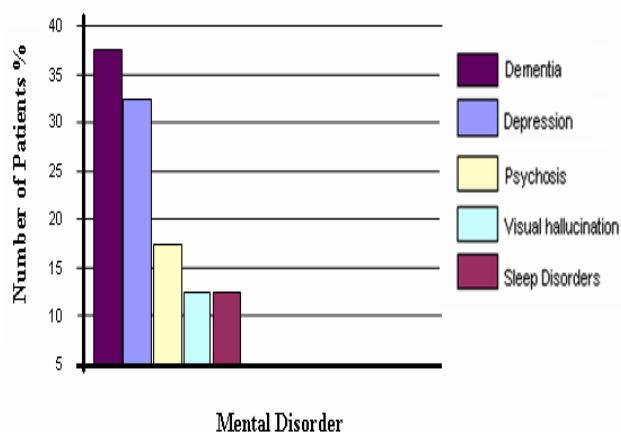


Figure 1. Prevalence of Mental Changes in PD (n=50)

We found that screening for specific symptoms of depression such as loss of motivation, loss of appetite and loss of libido were helpful for early detection of depression in Parkinson's disease. Depression was treated in our patients with selective serotonin uptake inhibitors (SSRI) with good response. SSRI are used for treatment of depression mainly because of its good tolerance (Rihmer et al. 2004). However, several case reports have noted worsening of Parkinson Symptoms after treatment with SSRI (Jausen-steur 1993; Jimenez-jimenez et al. 1994) which was not seen in our patients. Sleep disorders were reported to occur in 20–40% of patients with Parkinson's disease (Factor et al. 1990). Sleep disorders reported by our patients relatives were mild and didn't lead to falls or injuries and were treated

simply by reassurance. Visual hallucinations occur in 20% of patients treated for long duration with dopaminergic drugs (Gupeta et al. 2004). They can be a common source of distress but in spite of that, none of our patients volunteered, on his own, the presence of visual hallucinations. Sleep disorder and visual hallucination occurred together in the same three patients. This is keeping with other reports which show a common association between sleep disorders, visual hallucination and depression (Freidman 1991). Visual hallucination in our patients improved following a reduction in dopaminergic drug dose. Psychosis is a major mental disturbance which occurs in 5-10% of patients with Parkinson's disease (Gaspert & Gray 1984). In this study, one patient had drug induced psychosis as his psychotic symptoms tended to be stereotyped which is characteristic of dopaminergic induced psychosis. His psychotic symptoms became less by reduction of dopaminergic medication. The other four patients of the five patients with psychosis had psychosis secondary to dementia range between 70 – 92 years (mean age is 79.1). Other reports also show that dementia in patients with Parkinson's disease occurred mainly in old age group (Huges et al. 1993). Dementia occurs in about 30% of patients with Parkinson's disease (Starkslein et al. 1992). Cholinesterase inhibitors were used to treat our patients with dementia and were found to be effective. Other reports state that cholinesterase inhibitors can be effective in the treatment of dementia associated with Parkinson's disease (Emre 2004; Ravina et al. 2005).

CONCLUSION

In conclusion, mental changes are not uncommon in UAE patients with Parkinson's disease. Early recognition of these mental disorders, as treatments are available, is important to improve quality of life. The drawback of this study is the number of patients included is small to draw statistical significant conclusions. A trial with large sample size is needed.

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