OBSESSIVE COMPULSIVE SYMPTOMS IN IDIOPATHIC PARKINSON'S DISEASE

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ABSTRACT

Objective: To compare the presence of obsessive compulsive symptoms in patients with Parkinson's disease (PD) and a normal control group.

Design: Case Control Study

Place & duration of study: The patients were recruited in a private psychiatric center in Mumbai, India, from January 2005 to October 2007.

Subjects & Methods: 48 non demented, non depressed patients with idiopathic PD were administered the Maudsley obsessional-compulsive inventory (MOCI) and the Leyton obsessional inventory (LOI).

Results: Patients with severe PD showed greater scores on all the scales compared to the normal controls. Patients with mild PD however did not differ from normal controls in most respects.

Conclusion: Obsessive compulsive features may thus be more common in patients with PD and need early detection and treatment.

Key words: Parkinson's Disease, Obsessive Compulsive Symptoms.

INTRODUCTION

Idiopathic Parkinson's disease (PD) has a worldwide occurrence being present in 1% of people above the age of 65 years[1]. There are no uniform Indian large scale nationwide epidemiological studies on the prevalence of PD, though it is seen regularly in clinical practice here[2].

It is known that some patients with PD have obsessive compulsive symptoms (OCS) but there is no evidence of increased rates of obsessive compulsive disorder (OCD) in PD[3]. Few studies however have examined OCS in patients with PD[4-6]. Structural and functional neuroimaging studies have shown that OCS are related to dysfunction of the basal ganglia. The incidence of OCS is high when lesions are present in the basal ganglia circuitry[7]. Patients with PD manifest dysfunctions in the frontobasal ganglia circuitry. It has been reported that there is a predominance of left sided PD and OCS suggesting right hemisphere abnormalities[8]. It has also been reported that patients with PD that underwent pallidotomy have lower OCS[9].

The aim of this study was to compare obsessive compulsive symptoms in patients with mild PD, severe PD and a normal control group.

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SUBJECTS AND METHODS

The patient group consisted of 48 consecutive non demented, non depressed patients with idiopathic PD that attended the out patient clinic at a private psychiatric centre in Mumbai, India. The diagnosis was made by a referring neurologist. The diagnosis was made using clinical judgement. The control consisted of 48 subjects without a history of neurological, psychiatric and medical illness. They were mostly the patient's relatives or spouses recruited when they came with the patient for treatment. A semi structured proforma was used to collect demographic data. Depression was ruled out on clinical interview while dementia (cut off below 25) was ruled out using the Mini Mental Status Examination (MMSE)[10].

Written informed valid consent was taken from all the patients prior to the study. The study was approved by the Get Well Clinic Ethics Committee prior to its start.

The following scales were used in the study –

1. *The Maudsley obsessional compulsive inventory (MOCI)* – this comprises of thirty statements which are classified into 4 factors – checking (9 items), cleaning (11 items), doubting (7 items) and slowness (7 items). The subject has to answer true or false. The inventory has both affirmative and negative sentences[11]. Alpha coefficients for the four subscales are 0.7, 0.8, 0.7

and 0.7 respectively. Good test retest reliability has been noted for the scale.

2. The Leyton obsessional inventory (LOI) – It consists of 40 statements and the subjects were asked to make graded responses indicating whether the statement was true for his or her symptoms – never (score 0), rarely (score 1), sometimes (score 2), moderately often (score 3), frequently (score 4) and always (score 5). The scale has good construct validity and test retest validity.[12]

3. The Hoehn and Yahr scale for severity of parkinsonism (range 0-5 and highest disease severity indicated by 5)[13].

RESULTS

The groups in the study were well matched by age, sex and education. The mean (SD) age of the patients was 61.33 (8.46) years while that of the control group was 62.66 (9.77) years. Though once thought to be a disorder of old age there is an increase in idiopathic PD in the age group below 65[14]. Majority of the subjects in both groups were graduates and post graduates. The patient group had 30 males and 18 females while the control group had 26 males and 22 females.

The mean (SD) age of onset of PD in the patients was 50.22 (9.66) years. The mean (SD) duration of the illness was 9.89 (6.43) years while the mean (SD) Hoehn and Yahr stage was 3.23 (1.06).

Table 1
Scores on the Moci and Loi within the Groups

SCALES	MILD PD (N = 20)	SEVERE PD (N = 28)	CONTROLS (N = 48)	p values
		Mean (SD)		
MOCI Total	4.32 (3.11)	7.92 (4.88)	4.56 (2.59)	p^1=0.0002 p^2=0.7440 p^3=0.0057
MOCI Checking	1.42 (1.1)	2.43 (1.67)	1.23 (1.34)	p^1=0.0010 p^2=0.5776 p^3=00226
MOCI Cleaning	1.33 (0.96)	1.98 (1.21)	1.16 (1.76)	p^1 = 0.0324 p^2 = 0.6858 p^3 = 0.0521
MOCIDoubting	1.66 (1.21)	3.19 (1.44)	2.01 (1.16)	p^1 = 0.0002 p^2 = 0.2670 p^3 = 0.0003
MOCISlowness	2.27 (0.87)	2.54 (1.03)	2.04 (0.67)	p^1 = 0.0124 p^2 = 0.2428 p^3 = 0.3453
LOI Total	48.11 (28.56)	65.13 (29.22)	49.12 (24.36)	p^1 = 0.0123 p^2 = 0.8828 p^3 = 0.0505

p^1 – comparison between severe PD and normal controls.

p^2 – comparison between mild PD and normal controls.

p^3 – comparison between mild PD and severe PD.

Statistical analysis done using the t test.

$p < 0.05$ significant.

Subjects in the PD group were further divided into two – mild PD with Hoehn and Yahr staging less than or equal to 2.5 and severe PD with Hoehn and Yahr staging > 2.5. Out of the 48 subjects, 20 fell under the mild PD group while 28 had severe PD.

The scores between all three groups were compared using the paired t test (two groups were compared at a time) and two tailed p values were obtained where $p < 0.05$ was considered significant. Patients with severe PD had higher scores than both normal controls ($p = 0.0002$) and patients with mild PD ($p = 0.0057$) on the MOCI. Patients with severe PD also had significantly higher scores on most subscales of the MOCI compared to normal controls and patients with mild PD. The same was true for the total score on the LOI.

DISCUSSION

Parkinson's disease has been linked to obsessive compulsive disorder and symptoms but clear associations are not founded[14]. Authors have concluded that obsessive compulsive features may be an important but an unrecognized feature of patients with idiopathic Parkinson's disease[6]. Studies have also reported negative results with regard to obsessive compulsive symptoms in Parkinson's disease. This may be due to small sample size, early stages of the illness or a varied heterogeneous sample of patients with PD[5].

Compared to another similar recent study, majority of our patients had severe PD and differed from the normal control group on all subscales of the MOCI as well as the total score. There were no significant differences between the group of mild PD patients and normal controls on all the scales. This may point that obsessive compulsive symptoms are more common in advanced cases of PD and those with greater severity and higher stages[4].

Doubting, checking and slowness scores were greater in the group with severe PD compared to mild PD. Our data lends support to the presence of obsessive compulsive behavior and symptoms in patients with severe PD. It also notes that these symptoms are present to a much larger extent than in normal subjects and patients with mild PD.

REFERENCES

1. Zhang Z, Roman GC. Worldwide occurrence of Parkinson's disease – an updated review. Neuroepidemiology 1993 ; 12 : 195-208.
2. Singhal B, Lalkaka J, Sankhla C. Epidemiology and treatment of Parkinson's disease in India. Parkinsonism Related Dis 2003 ; Suppl 9 : S105-9.
3. Maia AF, Pinto AS, Barbosa ER, Menezes PR, Miguel EC. Obsessive compulsive symptoms, obsessive compulsive disorder related disorders in Parkinson's disease. J Neuropsychiat Clin Neurosci 2003; 15: 371-4.
4. Alegret M, Junque C, Valideoriola F, Vendrell P, Marti MJ, Tolosa E. Obsessive compulsive symptoms in Parkinson's disease. J Neurol Neurosurg Psychiatry 2001; 70 : 394-6.
5. Muller N, Putz A, Kathmann N, Lehle R, Gunther W, Straube A. Characteristics of obsessive compulsive symptoms in Tourette's syndrome, OCD and Parkinson's disease. Psychiat Res 1997; 70: 105-14.
6. Tomer R, Levin BE, Weiner WJ. Obsessive compulsive symptoms and motor asymmetries in Parkinson's disease. Neuropsychiat Neuropsychol Behav Neurol 1993; 6 : 26-30.
7. Cummings JL. Frontal-subcortical circuits and human behavior. Arch Neurol 1993; 50 : 873-80.
8. Hollander E, Cohen L, Richards M, Mullen L, DeCaria C, Stern Y. A pilot study of the neuropsychology of obsessive compulsive disorders and Parkinson's disease: basal ganglia disorders. J Neuropsychiat Clin Neurosci 1993; 5: 104-7.
9. Junque C, Alegret M, Nobbe FA, Vallderiolla F, Pueyo R, Vendrell P. Cognitive and behavioral changes after unilateral posteroventral pallidotomy : relationship with regional data from MRI. Mov Disord 1999; 5: 780-9.
10. Folstein MF, Folstein SE, McCugh PR. The mini mental state – a practical method for grading cognitive states for the clinician. J Psych Res 1975; 12: 189-98.
11. Hodgson RJ, Rachman S. Obsessional compulsive complaints. Behav Res Ther 1977; 15 : 389-95.
12. Cooper J. The Leyton obsessional inventory. Psychol Med 1970; 1 : 48-64.
13. Goetz CG, Poewe W, Rascol O. Movement Disorder Society Task Force Paper on Hoehn and Yahr staging scale : status and recommendations : The Movement Disorder Society Task Force on rating scales for Parkinson's Disease. Mov Disord 2004; 19 : 1020-8.
14. Meara J, Bhownick BK, Hobson P. Accuracy of diagnosis in patients with presumed Parkinson's disease. Age Ageing 1999; 28 : 99-102.
15. Hardie RJ, Lees AJ, Stern GM. On off fluctuations in Parkinson's disease. Brain 1984; 107 : 487-506.
16. Saint-Cyr JA, Taylor AE, Nicholson K. Behavior and the basal ganglia. Adv Neurol 1995; 65 : 1-28.