Determine the Relation of Neuropsychiatric Disorder to Quality of Life in Patients with Parkinson's Disease İn Tertiary Care Teaching Hospital

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ABSTRACT

Parkinson's disease (PD) is the most common neurodegenerative disorders characterized by a neuronal accumulation of the presynaptic protein syncline and by variable degrees of Parkinsonism, defined as a paucity and slowness of movement (bradykinesia), tremor at rest, rigidity, shuffling gait, and flexed posture. Nearly all forms of Parkinsonism result from a reduction of dopaminergic transmission within the basal ganglia. A study conducted in the Department of Neurology, during the period sixty two idiopathic Parkinson's disease patients satisfied the inclusion criteria were included in the study. Out of this, twenty two patients were male and thirty nine patients were female. In this study confirming a significantly no correlation between the neuropsychiatric disorders and quality of life. So first treating neuropsychiatric disorders in Parkinson's patients can significantly reduce neuropsychiatric disorders and improve quality of life.

INTRODUCTION

Parkinson's disease (PD) is a common adult-onset neurodegenerative disorder of dopamine depletion involving multiple motor and non-motor circuits of the basal ganglia. The cardinal features of the disease are characteristically motor in nature (resting tremor, bradykinesia, rigidity and postural instability), changes in cognition, mood and emotion are common. A wide range of neuropsychiatric disturbances commonly occurs in patients with Parkinson's disease.[1]Neuropsychiatric disturbances contribute considerably to reduced quality of life, distress for the caregiver and increased risk for admission to nursing home in patients with Parkinson's disease.[2] Parkinson's disease should be viewed nowadays as a complex disorder, characterised by motor signs and by a broad and challenging range of neurological and psychiatric symptoms.[3]

Quality of life is a multidimensional concept that reflects a subjective evaluation of a person's satisfaction with life and the relationships with family or relatives, a person's own health, the health of another close person, finances, housing, independence, religion, social life, and leisure activities. Health contributes to quality of life, and this domain is often referred to as health related quality of life. The World Health Organization (WHO) describes health as a state of complete physical, mental, social, and spiritual wellbeing, and not merely the absence of disease or infirmity. This indicates that psychological and social factors are an integral part of health. The PDQ-39 (Parkinson's disease Questionnaire) will probably be the most appropriate health related quality of life instrument.

METHODS

A written informed consent taken from patient or caregiver, in a prescribed format. Patients who meet the inclusion criteria will be enrolled for the study. This study will be carried out in the department of neurology. The prevalence of neuropsychiatric disorders were assessed by using Neuropsychiatric Inventory (NPI) scale. Firstly screening questions for each of the neuropsychiatric symptoms were asked. Positive responses were probed with structured questions focusing on specific features of the neuropsychiatric symptom. Assessment of quality of life will do in PDQ-39 questionnaire. Datas will be analysed using suitable statistical method like Chi quare test, Fisher's exact test and t test.

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INCLUSION CRITERIA

According to the United Kingdom Parkinson's Disease Society brain bank diagnostic criteria for Parkinson's disease.[10]

Bradykinesia and at least one of the following:

➤ Muscular Rigidity

➤ 4-6 Hz Resting Tremor

➤ Postural Instability not caused by primary visual, vestibular, cerebellar or proprioceptive dysfunction

EXCLUSION CRITERIA

➤ History of repeated strokes with stepwise progression of Parkinson features

➤ History of repeated head injury

➤ History of definite encephalitis

➤ Oculgyric Crisis

➤ Neuroleptic treatment at onset of symptoms

➤ More than one affected relative

➤ Sustained remission

➤ Strictly unilateral features after 3 years

➤ Supranuclear gaze palsy

➤ Cerebellar signs

➤ Early severe autonomic involvement

➤ Early severe dementia with disturbances of memory, language, and praxis

➤ Babinski's sign

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➤ Presence of cerebral tumor or communicating hydrocephalus on computed tomography scan

➤ Negative response to large doses of levodopa (if malabsorption excluded)

➤ MPTP exposure

RESULTS AND DISCUSSION

A study conducted in the Department of Neurology, during the period sixty two idiopathic Parkinson's disease patients satisfied the inclusion criteria were included in the study. Out of this, twenty two patients were male and thirty nine patients were female.

QUALITY OF LIFE: *PDQ-39 Scale*

Table 1. Descriptive statistics on the eight dimensions of the Parkinson's Disease Questionnaire (PDQ-39)

Dimension	Mean(SD)	Median	95%CI	(Min, Max)
Mobility	31.3 (22.8)	25.00	(24.9,37.7)	(2.5 , 97.5)
Activities of daily living	31.9 (22.0)	25.00	(26.1,37.8)	(4.2 , 87.5)
Emotional Well being	41.0 (25.4)	41.67	(33.9,48.2)	(4.2 , 95.8)
Stigma	43.6 (21.7)	37.50	(36.7,50.5)	(6.3 , 81.3)
Social Support	38.5 (24.2)	33.33	(28.7,48.2)	(8.3 , 75.0)
Cognitive impairment	32.5 (21.4)	25.00	(25.6,39.5)	(6.3 , 81.3)
Communication	20.8 (12.1)	20.83	(16.1,25.5)	(8.3 , 50.0)
Bodily Discomfort	48.8 (27.9)	41.67	(40.8,56.8)	(8.3 , 100.0)

The PDQ39 has been shown to be a reliable and valid instrument for patients with Parkinson's disease.[4] The PDQ-39 comprises 39 questions measuring the eight dimensions of health: mobility, activities of daily living, emotional well-being, stigma, social support, cognition, communication and bodily pain. Dimension scores are coded on a scale of 0 (perfect health as assessed by the measure) to 100 (worst health as assessed by the measure).

The mean score of quality of life range from 20.8 to 48.8. The highest mean scores were found Bodily Discomfort, Stigma. Bodily Discomfort scores lies between 8.3 to 100 and its average score was 48.8 with SD of 27.9. Median score was 41.67.

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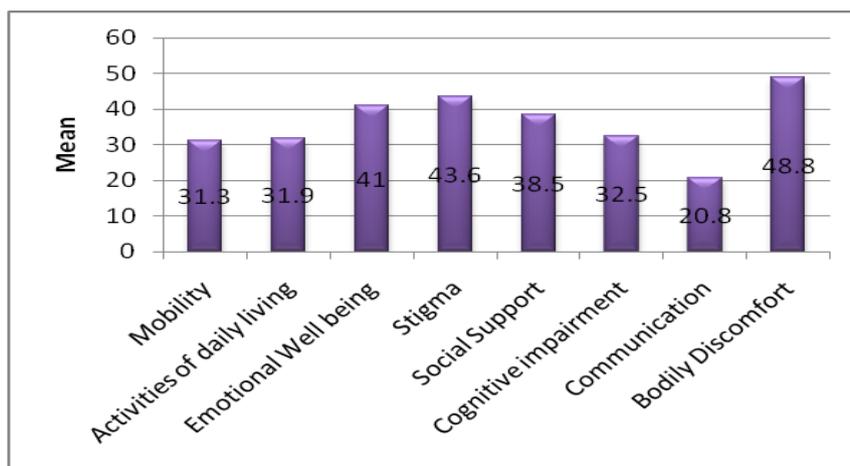
Fig.1 Comparing Means of PDQ-39 scores

Table 2. Neuropsychiatric Inventory (NPI) score details

Neuropsychiatric Inventory (NPI) Score	n	Mean(SD)	Median	95% CI	(Min, Max)
Total NPI Score	40	16.7(15.05)	12.00	(11.89,21.51)	(1.00 , 72.00)
Delusions	7	8.00 (4.51)	8.00	(3.83,12.17)	(1.00 , 12.0)
Hallucination	7	6.57 (3.21)	6.00	(3.61 , 9.54)	(2.00 , 12.00)
Aggregation/Agitation	7	8.71(3.77)	9.00	(5.22 , 12.20)	(2.00 , 12.00)
Depression	30	5.97(3.48)	6.00	(4.67 ,7.27)	(1.00 , 12.00)
Anxiety	17	6.18 (4.24)	6.00	(3.97 , 8.38)	(1.00 , 12.00)
Elation/euphoria	11	4.00 (4.14)	2.00	(1.20 , 6.80)	(1.00 , 12.00)
Apathy	2	4.50(4.95)	4.50	(-39.97,48.97)	(1.00 , 8.00)
Disinhibition	4	6.50 (6.35)	6.50	(-3.61, 6.61)	(1.00 , 12.00)
Irritability/Lability	22	4.68 (3.27)	3.50	(3.23 , 6.13)	(1.00 , 12.00)
AbberantMotorBehaviour	4	9.75 (4.50)	12.00	(2.59 , 16.91)	(3.00 , 12.00)
Total Neuro vegetative Changes score	20	11.35(7.83)	12.00	(7.69 , 15.01)	(2.00 , 24.00)
Appetite/Eating change	12	6.17 (4.13)	5.00	(3.54 , 8.79)	(2.00 , 12.00)
Sleep and Night Time behaviour Disorder	17	9.00 (4.47)	12.00	(6.70 , 11.80)	(1.00 , 12.00)

According to the table above, the total NPI score of patients ranges from 1 to 72. The mean of total NPI score is 16.7 with a standard deviation of 15. The median total NPI score is 12.

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Also, the Total Neuro vegetative Changes score of patients ranges from 2 to 24. The mean of total Neuro vegetative Changes score is 11 with a standard deviation of 7. The median total Neuro vegetative Changes score is 12. The highest mean scores were found for Abberant Motor Behaviour, sleep, aggregation, which was similar findings of D Aarsland et al.[5]
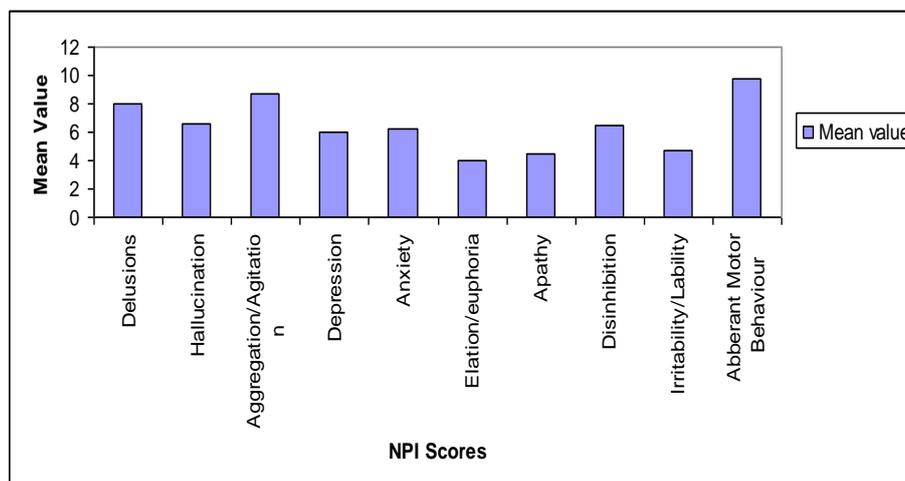
Fig 2. Comparing mean of NPI score:

RELATIONSHIP BETWEEN NEUROPSYCHIATRIC INVENTORY (NPI) SCORE AND QUALITY OF LIFE

Table 3. Relationship between Neuropsychiatric Inventory (NPI) score and Quality of life score -PDQ-39 score

Quality of life (PDQ-36 domains)	Correlation Coefficient Value	P value
Mobility	0.14944	0.3054
Activities of daily living	0.16367	0.2238
Emotional welbeing	0.12623	0.3451
Stigma	0.19495	0.1390
Social Support	0.16688	0.2065
Cognitive impairment	0.22600	0.0880
Communication	0.15179	0.2511
Bodily Discomfort	0.16962	0.2030

In the above table, correlation analysis is used to measure the Relationship between Neuropsychiatric Inventory (NPI) score and PDQ-39 score. Here p value is greater than 0.05,

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so there was no correlation found between the Quality of life Vs Neuropsychiatric Inventory (NPI) score. Schrag A et al [6]suggest that Disability had a Significant negative effect on quality of life. Depression has been reported to be most important determinant for quality of life in Parkinson's disease[7,8,9]. In this study confirming a significantly no correlation between the neuropsychiatric disorders and quality of life. So first treating neuropsychiatric disorders in Parkinson's patients can significantly reduce neuropsychiatric disorders and improve quality of life.

CONCLUSION

This study find out the neuropsychiatric disorders and assess the quality of life of Parkinson's patients. This study emphasizes he importance of psychiatric symptoms in Parkinson's disease, which were present in most patient.

This study also shows statistically no significant correlation with quality of life. Early detection of neuropsychiatric symptoms such as depression, anxiety etc is importance and both medication and counseling therapies have been found to be useful. In further research, larger sample size and follow up is required and to determine to what extent improvement disability, quality of life in Parkinson's patients that can be achieved by treating specific drug.

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