



A STUDY ON NON-MOTOR MANIFESTATIONS IN PARKINSON'S DISEASE PATIENTS IN A TERTIARY CARE HOSPITAL IN SOUTH TAMILNADU.

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ABSTRACT Non-motor symptoms are prevalent across all stage of Parkinson's disease. These nonmotor symptoms were studied in 50 patients with Parkinson's disease. The most prevalent symptoms were Autonomic which includes Constipation, urinary Urgency, Orthostatic hypotension, erectile dysfunction and drooling. The most prevalent Neuro behavioural abnormalities were depression, fatigue, recent memory loss, and anxiety. The number of Non-Motor Symptoms increased as the disease severity progressed. The number of Non-Motor Symptoms in stages 1 and 1.5 are the least. It increased through stages 2 and 2.5 and was highest reported in stages 3 and 4. Early recognition and treatment improves the quality of Parkinson's Disease patients.

KEYWORDS :

AIM OF THE STUDY:

- To study the prevalence of Non-Motor features across the various stages of Parkinson's disease.
- To correlate it with the severity and duration of the disease.

MATERIAL AND METHODS

Patient with idiopathic Parkinson's disease who attended the Neurology outpatient clinic and were inpatients at Neuro medicine ward at Government Rajaji Hospital, Madurai were studied. A detailed and complete neurological examination was done. The motor symptoms were assessed through the Unified Parkinson's Diseases Rating Scale (UPDRS) and the disease staged according to the Hoehn and Yahr staging from stage 0 to stage 5. The nonmotor features were assessed through the Non-Motor Symptoms Questionnaire (NMS QUEST) which contains 30 items. This included cognitive dysfunction, depression, Sleep disorders, fatigue, sensory and autonomic abnormalities. CT AND MRI brain was done to exclude Parkinson's plus syndrome, vascular parkinsonism and secondary parkinsonism. The prevalence of these Nonmotor Symptoms across the various stages of the disease was studied and its correlation with the disease severity and duration assessed.

INCLUSION CRITERIA:

- Adult patients with idiopathic Parkinson's disease.

EXCLUSION CRITERIA.

- Parkinson's Plus Syndromes like Progressive Supranuclear Palsy (PSP), Multi System Atrophy (MSA) and Corticobasal Degeneration (CBD), Diffuse Lewy body dementia (DLBD).
- Patients with Vascular Parkinsonism.
- Secondary Parkinsonism.
- Young onset Parkinson's disease.

OBSERVATION AND RESULTS.

TABLE - 1: AGE DISTRIBUTION

Age in years	No of cases	Percentage
40-50	9	18
51-60	19	38
61-70	21	42
71-80	1	2
Total	50	100

TABLE - 2: SEX DISTRIBUTION

Sex	No. of cases	Percentage
Male	33	66
Female	17	34
Total	50	100

TABLE - 3: DURATION OF DISEASE.

Duration of disease	No. of cases	Percentage
< 5 years	31	62
5- 10 years	16	32
>10 years	3	6
Total	50	100

TABLE - 4: STAGE OF DISEASE.

Based on the Hoehn and Yahr staging

Stages of disease	No. of cases	Percentage
Stage 1	4	8
Stage 1.5	5	10
Stage 2	9	18
Stage 2.5	15	30
Stage 3	16	32
Stage 4	1	2
Total	50	100

TABLE - 5: AUTONOMIC FEATURES.

Autonomic features	Present	Percentage
Constipation	16	32
Urgency	10	20
Orthostatic Hypotension	8	16
Erectile dysfunction	8	16
Reflex esophagitis	7	14
Sialorrhea	5	10
Hypohidrosis	3	6
Hyperhidrosis	3	6
Premature ejaculation	3	6
Hesitancy	2	4
Decreased Salivation	2	4
Precipitancy	1	2
Weight Loss	1	2
Seborrhoea	1	2
Hair Loss	1	2

TABLE- 6: NEURO BEHAVIOURAL AND COGNITIVE ABNORMALITIES.

NEURO BEHAVIOURAL AND COGNITIVE ABNORMALITIES	Present	Percentage
Depression	19	38
Memory Loss	8	16
Fatigue	7	14
Anxiety	5	10
Auditory Hallucinations	3	6
Excessive eating	3	6
Akathisia	2	4
Euphoria	2	4
Aggression	2	4
Addictive Personal	2	4
Hyper sexuality	2	4
Phobias	1	2
Excessive Sweating	4	8

TABLE -7: SLEEP DISORDERS.

Sleep Disorders	Present	Percentage
REM Sleep behaviour	10	20
Cramps in the legs	10	20
Excessive day time drowsiness	6	12
Vivid dreams	3	6

TABLE -8: SENSORY ABNORMALITIES

Sensory Abnormalities	Present	Percentage
Hyposmia	8	16
Paraesthesia	5	10
Anosmia	5	10
Others	4	8

TABLE -9: NEURO BEHAVIORAL CHANGES ACCORDING TO DISEASE STAGE.

Stage	Neuro behavioural	Number	Total
1	Sweats	1	2
	Depression	1	
1.5	Depression	2	3
	Fatigue	1	
2	Depression	5	6
	Sweats	1	
2.5	Depression	4	10
	Sweats	2	
	Akathisia	2	
	Fatigue	1	
3	Depression	7	19
	Anxiety	5	
	Fatigue	4	
	Auditory Hallucination	0	

TABLE 10 – AUTONOMIC FEATURES ACCORDING TO DISEASE STAGE

Stage	Autonomic features	Number	Total
1	Orthostatic hypertension	1	3
	Hyperhidrosis	1	
	Constipation	1	
1.5	Premature ejaculation	2	8
	Decreased salivation	1	
	Hyperhidrosis	1	
	Urgency	1	
	EDF	1	
	Reflux esophagitis	1	
	Constipation	1	
2	Constipation	5	13
	Urgency	4	
	Reflux esophagitis	2	
	Sialorrhoea	1	
	EDF	1	
2.5	EDF	4	
	Sialorrhoea	3	
	Constipation	3	
	Orthostatic hypotension	2	

	Urgency	2	21		
	Decreased salivation	1			
	Hesitancy	1			
	Hyperhidrosis	1			
	Reflux esophagitis	1			
	Weight loss	1			
	Premature ejaculation	1			
	Hair loss	1			
	3	Constipation		6	26
		Orthostatic hypotension		5	
Hypohidrosis		3			
Urgency		3			
Reflux esophagitis		3			
EDF		2			
Sialorrhoea		1			
Precipitancy		1			
Hesitancy		1			
Seborrhoea		1			

TABLE 11 : COGNITIVE CHANGES ACCORDING TO DISEASE STAGE

Stage	Cognitive changes	Number	Total
1	Aggression	1	1
1.5	Euphoria	1	5
	Phobias	1	
	Excessive eating	1	
	Memory	1	
	Addictive behaviour	1	
		1	
2	Memory	3	3
2.5	Aggression	1	2
	Hypersexuality	1	
3	Memory	4	8
	Excessive eating	2	
	Euphoria	1	
	Hypersexuality	1	
4	Addiction	1	1

TABLE 12: SENSORY ABNORMALITIES ACCORDING TO DISEASE STAGE

Stage	Sensory abnormalities	Number	Total
1	Hyposmia	1	1
1.5	Hyposmia	2	4
	Anosmia	1	
	Decreased blink rate	1	
2	Anosmia	2	4
	Paraesthesia	1	
	Hyposmia	1	
2.5	Hyposmia	2	7
	Paraesthesia	2	
	Decreased blink rate	2	
	Blepharospasm	1	
		1	
3	Anosmia	2	6
	Paraesthesia	2	
	Hyposmia	2	
4	-	-	-

TABLE 13: SLEEP DISORDERS ACCORDING TO DISEASE STAGE.

Stage	Sleep disorders	Number	Total
1	REM Sleep behaviour disorder	2	3
	Vivid dreams	1	
1.5	REM Sleep behaviour disorder	2	4
	Cramps in legs	1	
	Vivid dreams	1	
2	Cramps in legs	2	2
		2	
2.5	REM Sleep behaviour disorder	3	10
	Cramps in legs	3	
	Excessive day time somnolence	3	
	Vivid dreams	1	
3	REM Sleep behaviour disorder	3	10
	Cramps in legs	4	

	Excessive daytime somnolence	3	
4	-	-	-

DISCUSSION:

Non-Motor Symptoms in Parkinson's Disease are common, Significant, and frequent across all stages of disease.

1. Non-Motor Symptoms of Parkinson's Disease correlates with the disease progression and duration and more Non-Motor Symptoms are seen in advanced disease.
2. On average, most patients with Parkinson's Disease have at least 10 different Non-Motor Symptoms.
3. Range of symptoms can vary from the more commonly recognised problems such as constipation, Sleep disturbances, and depression to the less recognized problems such as diplopia, weight loss.

The Present Study when compared to **Chaudhari et al (1)** showed similarly high prevalence of the following non-motor symptoms namely depression, constipation, sleep, taste and smell disturbances.

The next prevalent Non-Motor Symptoms were sexual disturbances, urinary urgency, memory loss, cramps in legs, anxiety and fatigue which were less when compared to Chaudhari et al. Hallucinations, weight loss and dreams were least prevalent when compared to Chaudhari et al.

The most prevalent Non-Motor Symptoms were Autonomic Symptoms Namely Constipation, urgency, Orthostatic hypotension, Sexual dysfunction, swallowing difficulties, sweating disturbances and sialorrhoea.

Autonomic Symptoms study in Parkinson's disease by **D. Verbann et al (2)**, studied 420 patients with Parkinson's disease found gastro intestinal, urinary symptoms are common with increasing age, disease severity and with higher doses of dopaminergic medications.

The present study when compared to **D.Verbann et al(2)** study showed constipation, swallowing difficulties, other gastro intestinal symptoms were common in stage 2.5, stage 3 and in patients aged more than 60 years. Urinary symptoms like urgency were common in stages 2, 2.5, 3 and in patients aged more than 50 years.

Next common Non-Motor Symptoms in the present study were Neuropsychiatric symptoms like depression, memory disturbances, anxiety and hallucinations followed by sleep disturbances which include insomnia, sleepiness, cramps in legs, REM sleep behaviour disorder and dreams, fatigue and weight loss, seborrhoea, hair loss, addictive behaviour, aggression, decreased sweating were reported in a small percentage of patients.

CONCLUSION:

- Non-motor symptoms were prevalent across all stage of Parkinson's disease.
- The most prevalent ones were Autonomic which includes Constipation, Urgency, Orthostatic hypotension, erectile dysfunction, and drooling.
- The most prevalent neuro behavioural abnormalities were depression, fatigue, recent memory loss, and anxiety.
- The number of Non-Motor Symptoms increased as the disease severity progressed.
- The number of Non-Motor Symptoms in stages 1 and 1.5 were the least. It increased through stages 2 and 2.5 and was highest reported in stages 3 and 4.
- The early recognition of these symptoms may well perhaps lead to an earlier diagnosis and treatment of Non-Motor Symptoms that may go long way in improving the quality of Parkinson's Disease patients as well as the economic burden on the care givers.

REFERENCES

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