
ORIGINAL ARTICLE

Prevalence of Non-Motor Symptoms in Parkinson's Disease Patients

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ABSTRACT

Introduction: Parkinson's disease (PD) is common neurological illness of geriatric population having cardinal motor features like bradykinesia, asymmetrical resting tremors and rigidity. However it is also associated with certain non-motor symptoms (NMS) which are considered as part of PD. NMS may include urinary symptoms, forgetfulness, gastrointestinal symptoms and skin manifestations and many more with variable frequency and intensity.

Objective: The main objective of study was to find frequency of NMS among patients of PD already taking medications for it.

Material and Methods: This cross-sectional study was done at Neurology department, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore (FJMU/SGRH) over duration of 1 year from July, 2015 to June, 2016. All the patients already diagnosed with PD and taking treatment for it, were enrolled in study. The Demographic details were assessed. They were specifically asked for NMS by a questionnaire formulated by authors. All the data were analyzed through SPSS version 20.

Results: A total 131 patients were recruited in the study. The mean age of patients was calculated as 58.87 ± 9.45 years. Most of the patients in this study were males which were 64.1% (n=84). The most common symptom found in this study was impaired concentration among 78 participants (59.5%) followed by Sialorrhea in 74 patients (56.4%) , unexplained pain in 69 patients (52.6%), Nocturia (54.1%), urinary urgency (51.1%) and Hyposmia (46.5%). Other NMS symptoms were present with lower frequencies.

Conclusion: We conclude that NMS are quite prevalent in patients with PD in our setup , hence they must be specially taken care when dealing with PD. We also need to educate our patients regarding the presence of these symptoms and physicians to manage them promptly.

Keywords: Parkinson's disease; Non-motor; symptoms; Cardinal

INTRODUCTION:

Parkinson's disease (PD) is neurological entity in geriatric population having neuro degenerative etiology. There is multisystemic involvement in addition to neurological signs and symptoms. Parkinson's disease has various motor as well as nonmotor features .Typically motor feature include slowness or difficulty in initiating movements i.e,bradykinesia, asymmetrical resting tremor and cog wheel rigidity. However, non-motor symptoms (NMS) also are part and parcel of this disease⁽¹⁾. The age of onset of presentation of these non motor symptoms vary. NMS may present early in course of PD and some are thought to be late appearing symptoms in PD patients. Also most of the drug treatment for PD is aimed to replace dopamine as most of the cardinal symptoms of PD are considered due to decreased Dopamine levels.

Therefore NMS of PD are usually ignored at time of diagnosis, follow up and only taken care once they develop⁽²⁻⁴⁾.

NMS among patients with PD occur because PD involves many parts of the brain including locus ceruleus, hypothalamus and neocortex which don't use dopamine for their synaptic pathways⁽⁵⁾. These areas mostly control autonomic nervous system, motility of the gut and cardiac efferent sympathetic fibers. Therefore PD patients develop these NMS as part of the disease sooner or later^(6, 7). Also these NMS develop as a side effect of the drugs used for treatment of PD which may include hallucination, depression, edema, orthostatic hypotension, insomnia and many more⁽⁸⁾. Therefore prompt appreciation and treatment of these NMS is important and must be treated vigilantly. Our study aimed to find of different NMS

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frequency in patients already taking treatment for PD and presenting in our department.

MATERIAL AND METHODS

This cross-sectional analysis being conducted at Neurology department, FJMU/SGRH, Lahore, had total span of the study 1 year from July, 2015 to June, 2016. All the patients already diagnosed of PD and taking treatment for it were enrolled in the study. Demographic details of all patients were assessed. They were specifically asked for NMS as mentioned on the proforma after consensus by all the authors. Data were analyzed through SPSS version 20. All the quantitative variables were presented as mean \pm SD and qualitative variables were presented as percentages.

RESULTS

131 patients were included in study. The mean age of patients was calculated as 58.87 ± 9.45 years. Most of the patients in this study were males which were 64.1% (n=84). All the demographic details are summarized in table 1. The common symptoms found in our study in descending frequency were impaired concentration among 59.5% of patients followed by Sialorrhea in 56.4% patients, nocturia (54.1%) and urinary urgency (51.1%). All the details of the symptoms are summarized in table 2.

Table 1: Demographic details of the patients in the study

Age (mean)	58.87 \pm 9.45 years
Gender (n (%))	
Male	84 (64.1%)
Female	47 (35.9%)
Duration of illness (mean \pm SD)	2.87 \pm 2.26 years
Duration since start of treatment (mean \pm SD)	2.35 \pm 1.91 years
Antiparkinson's medication (n (%))	
Levodopa	18 (13.7%)
Dopamine agonists	54 (41.2%)
MAOB Inhibitors	59 (45.0%)

Table 2: Frequency of NMS in PD patients

Non-Motor Symptoms	n (%)
Gastrointestinal tract	
Sialorrhea	74 (56.4%)
Dysphagia	19 (14.5%)

Nausea	9 (6.8%)
Constipation	56 (42.7%)
Bowel incontinence	4 (3.0%)
Incomplete bowel emptying	51 (38.9%)
Hyposmia	61 (46.5%)
Weight change (unexplained)	31 (23.6%)
Urinary tract	
Urinary urgency	67 (51.1%)
Nocturia	71 (54.1%)
Sexual function	
Sexual dysfunction	17 (12.9%)
Impaired libido	33 (25.1%)
Cardiovascular	
Orthostatic symptoms	46 (35.1%)
Falls	22 (16.7%)
Lower limb swelling	41 (31.2%)
Neuropsychiatric and cognitive	
Forgetfulness/memory	55 (41.9%)
Impaired concentration	78 (59.5%)
Anxiety	22 (16.7%)
Low mood	27 (20.6%)
Loss of interest/apathy	21 (16.0%)
Delusions	2 (1.5%)
Visual hallucinations	3 (2.2%)

DISCUSSION

The core objective of the study was to find NMS frequency among patients of PD already taking medications for it. It was found that the forgetfulness was fairly common symptom found in patients, followed by sialorrhea and unexplained body pains and urinary complaints in descending frequency. In another study by Muller et al, the same findings were found and drooling of saliva was the most commonly found symptom⁽⁹⁾. Also Khoo et al conducted a similar trial to find NMS among patients with PD and they found that most common symptom was drooling of saliva followed by forgetfulness and urinary urgency⁽¹⁰⁾.

To evaluate severity of NMS in PD, there are many scales available and one of them is NMS Scale which was established by International Parkinson's Disease Non-Motor Group⁽¹¹⁾. It assesses the severity and frequency of non motor symptoms in PD. NMS are assessed in 9 areas including cardiovascular, falls, sleep/fatigue-e, mood/cognition, perceptual problems/hallucinations, attention/memory, gastrointestinal tract, urinary, sexual function and miscellaneous. These domains are further assessed in 30-item scale and all the domains are assessed by the interviewer after asking from the patient⁽¹²⁾. It is validated tool of assessing NMS severity; however,

we haven't used this scale in our study because in our study, main objective was finding the NMS frequency in PD patients in our setup.

Also main symptoms considered as NMS in PD patients are those which may be due to older age and some are related to geriatric age group. As in this study also the urinary symptoms, forgetfulness and inability to concentrate were one of the most common symptoms, and all of these are also related to older age. Similar findings were noted by Milsom et al, and they also found that in spite of being the factor of old age, also these symptoms were clearly more common in cohort having PD than normal population taken as controls⁽¹³⁾.

Our study has shown the whole spectrum of NMS among PD patients and it is one of its own kind of study which had been conducted to take care of the patients in our setup as minimal literature is available over the topic from our part of the world. Also this study had some limitations; firstly we had included only the PD patients and not the normal cohort of the patients. Secondly, we had not used the standard criteria for frequency and severity of NMS among PD patients. So we recommend further studies including the general populations cohort limb for this important aspect of PD.

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