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PREVALENCE AND RISK FACTORS OF PARKINSON'S DISEASE IN WARANGAL REGION

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Conflicts of Interest: Nil
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Abstract:
Objectives: To determine the prevalence and risk factors of Parkinson's disease
Design: Prospective observational study.
Background: Parkinson's disease (PD) is a neurodegenerative disease characterised by progressive degeneration of the dopaminergic neurons of the substantia nigra. The common risk factors are age above 60, family history, head trauma, pesticide exposure. The term PD is a symptom complex used to describe the motor features of PD, which include resting tremor, bradykinesia, and muscular rigidity.
Methods: The study included 52 patients with PD. The data was obtained based on review of patient's records, case sheets, direct communication with patients, collecting demographic details, past medical & medication history and social habits.
Results: Among the study population, mean age was found to be 60 years. The common risk factors to PD include age above 60 years (n=25), family history (n=13), pesticide exposure (n=80) and head trauma (n=6).
Patients with PD done were 29 and patients with PD and HTN were 9 and patients with PD, HTN and DM were 5 and patients with PD, HTN and Stroke were 5 and patients with PD and stroke were 3 and patients with PD and Hypothyroidism were One.
Conclusion: PD is most common in male than female. The most common risk factors found to be are age above 60, family history, pesticide exposure, and head trauma. The most common clinical symptoms include tremors, bradykinesia, rigidity which helps in the early detection of PD and initiation of appropriate therapy to prevent occurrence of complications. Clinical pharmacist plays a vital role in identification of the risk factors involved in the occurrence and progression of PD
Keywords: Co-morbidities, Parkinson's disease, Risk factors

INTRODUCTION

Parkinson's disease is a neurodegenerative disease characterised by progressive degeneration of the dopaminergic neurons of the substantia nigra. It is the second commonest neurodegenerative disease after Alzheimer's disease. PD affects 1–2 per 1000 of the population at any time. There is evidence that both genetic and environmental factors are important determinants, and a family history of the disease has been shown to be a risk factor. It seems likely that PD is not a single disease but a number of phenotypically similar illnesses. A variable range of genetic and environmental interactions may produce these conditions and it may be that any individual risk factor will only affect susceptible subjects. Several synthetic pesticides have a molecular structure similar to that of MPTO 1-methyl-4-phenyl tetrahydropyridine, a contaminant of a synthetic opiate, can cause parkinsonism through its neurotoxic metabolite.

PD is the most common cause of parkinsonism, although a number of secondary causes also exist, including diseases that mimic PD and drug-induced causes [2].

Table 1: Parkinson's disease symptoms [3]

Motor symptoms	Non-motor symptoms
Tremor, bradykinesia, rigidity, postural instability	Cognitive impairment, bradyphrenia, tip-of-the-tongue (word finding) phenomenon
Hypomimia, dysarthria, dysphagia, sialorrhea	Depression, apathy, anhedonia, fatigue, other behavioural and psychiatric problems
Decreased arm swing, shuffling gait, festination difficulty arising from chair, turning in bed	Sensory symptoms: anosmia, ageusia, pain (shoulder, back), paraesthesia
Micrographic, cutting food, feeding, hygiene, slow activities of daily living.	Dysautonomia (orthostatic hypotension, constipation, urinary and sexual dysfunction, abnormal sweating, seborrhoea), weight loss
Glabellar reflex, blepharospasm, dystonia, striatal deformity, scoliosis, camptocormia	Sleep disorders (REM behaviour disorder, vivid dreams, daytime drowsiness, sleep fragmentation, restless legs syndrome)

MATERIALS AND METHODS:

A Prospective observational study was conducted in an outpatient Neurology Clinic for a period of 3 months. The study included 52 patients diagnosed with PD. Among all the 52 patients observed, data was obtained based on review of patient's records, case sheets, direct communication with patients, collecting demographic details, past medical & medication history and social habits.

RESULTS:

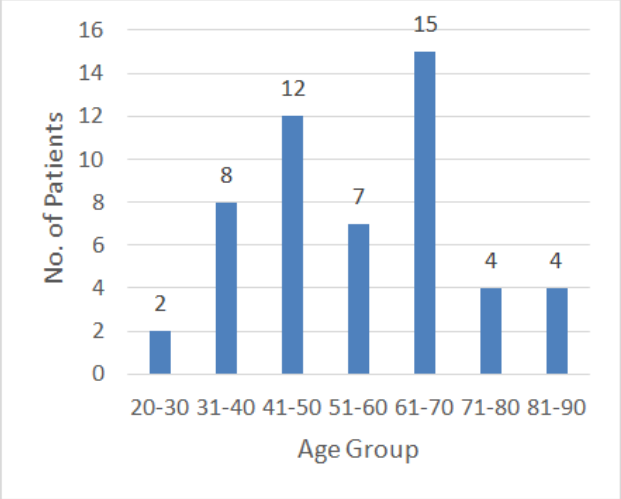

Figure 1: Age wise distribution

Among 52 patients, prevalence was mostly seen in the age group 61-70 years.

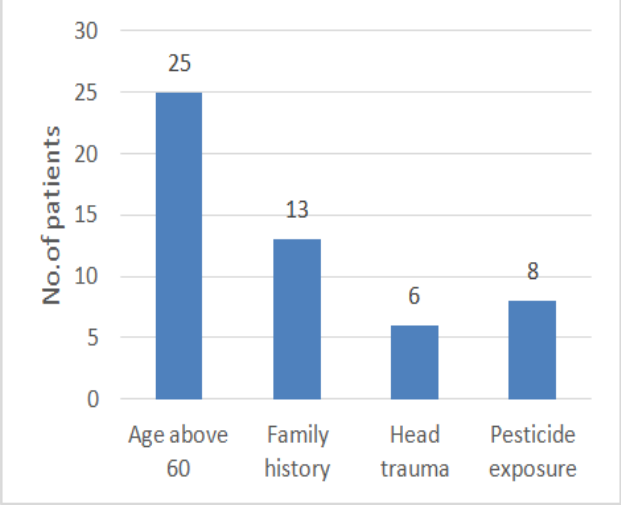

Figure 2: Risk factors

Among 52 patients, the most common risk factors leading to PD were Age above 60 (n=25), family history (n=13), pesticide exposure (n=80) and head trauma (n=6).

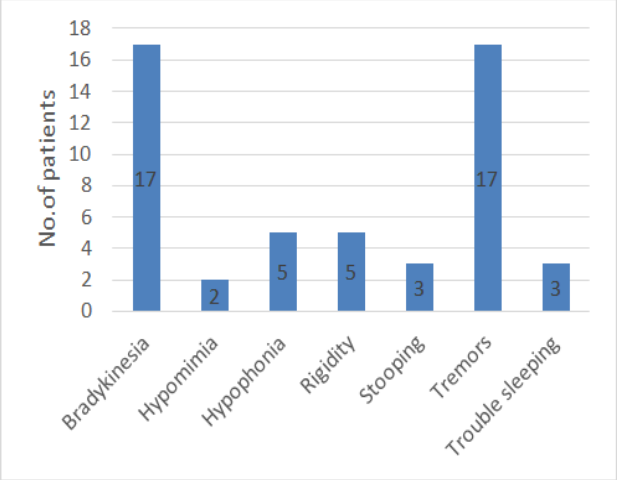

Figure 3: Symptoms

Among 52 patients the most common clinical presentations were found to be bradykinesia (n=17), tremors (n=17), hypophonia (n=5), rigidity (n=5), stooping (n=3), trouble sleeping(n=3) and hypomimia (2).

Among 52 patients the most co-morbidities were found to be PD (n=29), PD and HTN(n=9), PD, HTN and DM(n=5) PD, HTN and Stroke(n=5) PD and Stroke(n=3) and PD and Hypothyroidism(n=1)

DISCUSSION:

Age: In present study population the mean age was found to be in age group 61-70 years which is greater than the study conducted by C. Marras (2018) in which the age group was found to be 50-60 years in patients with PD [4,8].

Gender: In our study 58 % male (n=30) and 42 % female (n=22) were diagnosed with PD which is similar to a study conducted by Farhad iranmanesh *et al.,* (2012) with 52% male and 48 % female [5,9].

In our study we found that the age above 60 years (n=25), family history (n=13), head trauma (n=6), pesticide exposure (n=8). Geo PD study provided important evidence of the increased risk of PD in relation to exposure to pesticides (FD Dick *et al.,* 2007). Several synthetic pesticides have a molecular structure similar to that of MPTO 1-methyl-4-phenyl tetrahydropyridine, a contaminant of a synthetic opiate, can cause parkinsonism through its neurotoxic metabolite.

In our study we found that 29 patients had PD alone, 9 patients had PD and HTN, 5 patients had PD, HTN and DM, and 5 patients had PD, HTN and STROKE, 3 patients had PD and Stroke, 1patient had PD and

Hypothyroidism. PD and HTN- Elevated systolic blood pressure predict worsening motor function among patients with PD [6]. PD and DM- Both small and large vessel atherosclerosis developed diabetes might lead to vascular parkinsonism than neuro degenerative PD [7]. PD and Stroke- A silent stroke can cause PD although silent strokes may not be disable, they can have lasting effects by damaging dopaminergic neurons in substantia nigra [8].

CONCLUSION:

The prevalence of PD was more in male than female. The overall prevalence was highest in the age group of 61 - 70 years. The prevalence of PD throughout the world suggests that environmental and genetic factors along with ethnic differences may all play a role in disease pathogenesis. So research in individuals with PD may help to identify additional risk factors and to guide future prevention and treatment decisions. The most common risk factors found to be are age above 60 years, family history, pesticide exposure and head trauma. Therefore, it is recommended that protection against trauma, caution while using pesticides is recommended. The most common clinical symptoms like tremors, bradykinesia, rigidity, help in the early detection of PD and initiation of appropriate therapy to prevent occurrence of complications. Clinical pharmacist plays a vital role in identification of the risk factors involved in the occurrence and progression of PD and also helps in counselling the patient regarding the disease and importance of medication adherence.

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