The Pharma Innovation Journal 2018; 7(7): 44-56

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The Pharma Innovation

ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.03
TPI 2018; 7(7): 44-56

www.thepharmajournal.com
Received: 23-05-2018
Accepted: 30-06-2018

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Impact of depression, cognitive impairment and sleep on quality of life in patients with Parkinson's disease

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Abstract
Background: Parkinson's disease is a long term neurodegenerative disorder affecting the central nervous system. It is characterised by tremors, rigidity, akinesia/bradykinesia and paralysis as the condition progresses to its final stages.
Objective: The aim of the study is to identify the impact of depression, cognitive impairment and sleep on quality of life in patients with Parkinson disease including the management.
Methods: About 100 Parkinson's patients above 18 years were included in the study. The required data was collected from the patients through direct interview using standard questionnaires such as Unified Parkinson's Disease Rating Scale (UPDRS), Modified Hoehn and Yahr staging scale, Schwab and England Activities of Daily Living Scale, Non Motor Symptoms Questionnaire, Patient Disease Questionnaire-39 (PDQ-39), the Patient Health Questionnaire-9 (PHQ-9), Mini Mental Scale Examination (MMSE), Parkinson's disease Sleep Scale (PDSS). Statistical methods like Paired T-test and Pearson's correlation were used for the interpretation of the data.
Results: Out of the all population most of the patients were moderately severe depressed while significant and mild cognitive impairment was reported. Hyper somnolence, hallucinations, distressing dreams and nocturia were most reported disturbances during sleep and overall quality of sleep component reported a decline of 2.1% after follow-up. Most reported non motor symptoms were sleep disturbances, pain, depression and hallucinations. PDQ-39 was used to find the impaired quality of life in parkinson's patients. Out of 8 components, mobility and emotional wellbeing were major components affected while cognition reported an incline of 3% after follow-up. Association of PDQ-39 and UPDRS, staging, disability, PHQ-9, MMSE, PDSS, NMSQ reveal a great correlation existing which indicates that both motor and non-motor symptoms affect the patients quality of life predominantly. Treatment pattern include a combination of carbidopa and levodopa which was prescribed to 93.7% patients while 13.7% patients reported dyskinesia, 54.7% reported dystonia while 51.6% reported insomnia. Non motor symptoms treatment includes mirtazepne, sequorel and lonazepam. Non pharmacological techniques involved were physiotherapy, lower elastic stockings and soft cervical collar.
Conclusion: In conclusion the study evidences the undeniable impact of the non-motor symptoms of Parkinson's disease on the quality of life of a patient. Hence, through this study we have tried to exhibit the importance of treating non-motor symptoms which may be even more important than the treatment of motor symptoms since it has a direct impact on the psychology of a patient suffering from Parkinson's disease.

Keywords: Parkinson's disease, depression, cognitive impairment sleep on quality

Introduction
Parkinson's disease is a chronic, progressive neurodegenerative disorder affecting the dopaminergic neurons which are the dopamine-producing neurons specifically in the substantia nigra of the brain. It had both motor and non-motor symptoms specifically on the mobility and the muscle control of the patient [1]. There is recognition that parkinson's disease arises from the effects of both genetic and unidentified environmental factors. Even in situations where one of the family members is affected, it mostly is due to environmental factors[2]. Environmental toxicants especially pesticides have been linked as a risk factor in Parkinson's disease [3].
Among Indians it was found that a rough prevalence rate of 967-4070 cases per 100,000 people existed with an average of 2394 case per year [4]. Age dominates the prevalence where 1% of people over 65 and 4.3 % over 85 years of age are affected [5]. Parkinson's disease is an extra pyramidal disorder including the motor structures of the basal ganglia characterised by loss of dopaminergic function along with loss of motor function leading to the presentation of

The clinical features. Among patients suffering from parkinson's disease it was found that concentrations of superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (G-Px) and glucose-6-phosphate dehydrogenase (G-6PD) were low [6, 7].

Aim

The present aim is to identify the impact of depression, cognitive impairment and sleep on quality of life in patients with Parkinson disease including the management.

Objectives

- To examine the effect of depression, cognitive impairment and sleep on functional ability in parkinson's disease.
- To assess the impact of Parkinson's disease on quality of life.
- To study the effects of both the motor and non-motor symptoms on the quality of life of parkinson's disease patients.
- To study the prescribing pattern of drugs including for both motor and non-motor symptoms.
- To illustrate both the pharmacological and non-pharmacological therapy given to Parkinson's disease patients.
- To illustrate the measures to improve the overall quality of life in patients effected by parkinson's disease.

Methodology

Study Protocol

It is a prospective observational study to be conducted for a period of 6 months a after the approval of Institutional Ethical Committee (IEC). Patients who meet the study criteria are included in the study. The required data will be collected through the direct interview using standard questionnaire. The data obtained shall be analysed to identify the patient's motor dysfunction, stage, disability, depression, cognitive impairment and sleep disturbances influencing the parkinson patient's quality of life.

Study Design

It is a prospective observational study where in standard questionnaire tools, i.e. UPDRS, Modified Hohen and Yahr Staging, Schwab and England Activities of Daily Living Scale, PDQ-39, PHQ-9, MMSE, PDSS, Non Motor Symptoms Questionnaire were used to find out the factors that influence patient's quality of life.

Study Site

The study was conducted at Magna Neurology Clinic.

Study Period

For a period of 6 months (September to February).

Follow up period

For a period of 2 months.

Study population

About 100 patients were taken.

Study Criteria

Inclusion Criteria

- Patients both male and female, above 18 years is to be included.
- Geriatric patients shall be included.
- Patients diagnosed with parkinson's are included.

Exclusion Criteria

- Patients both male and female below 18 years of age.
- Pregnant, lactating women and paediatric patients.
- Patients with mental and physical disabilities.

Unified Parkinson Disease Rating Scale (UPDRS)

This scale is used for screening, diagnosing, monitoring, and to follow the longitudinal course of parkinson's disease.

The UPDRS scale consists of the following segments:

1. UPDRS-I: Mentation, Behaviour, and Mood,
2. UPDRS-II: Activities of daily living,
3. UPDRS-III: Motor examination,
4. UPDRS-IV: Complications of therapy
5. Modified Hoehn and Yahr Scale and
6. Schwab and England Activities of Daily Living scale.

Clinical use

- The UPDRS scale is most commonly used scale in the clinical study of parkinson's disease.
- The UPDRS scale includes series of ratings for typical parkinson's symptoms that cover all of the movement hindrances of parkinson's disease.

Modified Hoehn and Yahr Scale

This scale gives the stage related to parkinson's disease. Which are,

STAGE O: No signs of disease.

STAGE 1: Unilateral disease.

STAGE 1.5: Unilateral plus axial involvement.

STAGE 2: Bilateral disease, without impairment of balance.

STAGE 2.5: Mild bilateral disease, with recovery of pull test.

STAGE 3: Mild to moderate bilateral disease; some postural instability; physically independent.

STAGE 4: Severe disability; still able to walk or stand unassisted.

STAGE 5: Wheel chair bound or bedridden unless aided.

Schwab and England activities of daily living scale

This scale gives the percentage of people whose activities of daily living is disabled.

Parkinson's Disease Questionnaire-39 (PDQ-39)

This scale includes 39 item questionnaires that offer a patient reported measure of health status and quality of life. There are 39 questions in the long form parkinson's disease questionnaire, with 8 discrete scales:

- Mobility (10 Items)
- Social Support (3 Items)
- Activities Of Daily Living (6 Items)
- Cognition (4 Items)
- Emotional Well-Being (6 Items)
- Communication (3 Items)
- Stigma (4 Items)
- Bodily Discomfort (3 Items)

Formula for scoring each dimension

Sum of scores of each question in dimension/4 (max. score per question) *no. of questions in dimension*100.

Patient Health Questionnaire-9 (PHQ-9)
The PHQ-9 is a multipurpose instrument for screening, diagnosing, monitoring and measuring the severity of depression: n The PHQ-9 incorporates DSM-IV depression diagnostic criteria with other leading major depressive symptoms into a brief self-report tool.

Mini Mental State Examination (MMSE)
The MMSE tests a number of different mental abilities, including a person's memory, attention and language. It consists of a series of questions and tests, each of which scores points if answered correctly.

Parkinson's Disease Sleep Scale (PDSS)
The symptoms of Parkinson's can cause particular problems for people during sleep such as insomnia, restlessness, cramps, incontinence and vivid dreams or hallucinations**.** The Parkinson's Disease Sleep Scale (PDSS) allows health and social care professionals and people with Parkinson's to self-rate and quantify the level of sleep disruption being experienced in order to target treatment appropriately. It includes items like:

- Overall quality of sleep
- Difficulty in falling asleep
- Difficulty staying asleep
- Restlessness in legs or arms during asleep
- Fidgeting in bed
- Distressing dreams
- Distressing dreams
- Distressing hallucinations at night
- Nocturia
- Incontinence of urine during off periods
- Tingling in arms or legs
- Painful cramps in arms or legs
- Wake up early with painful posturing of arms or legs
- Waking tremors
- Fatigue and sleepiness after waking up
- Unexpectedly falling asleep

Non-Motor Symptoms questionnaire (NMS)
The non-motor symptoms (NMS) questionnaire can be given to people affected by Parkinson's in order to aid health and social care professionals to assess their non-motor symptoms**.** There are over 30 non-motor symptoms associated with parkinson's including depression, pain and genitourinary problems, some of which may even be present before parkinson's is diagnosed. It consists of different domains.

Results and Discussion
Demographic details

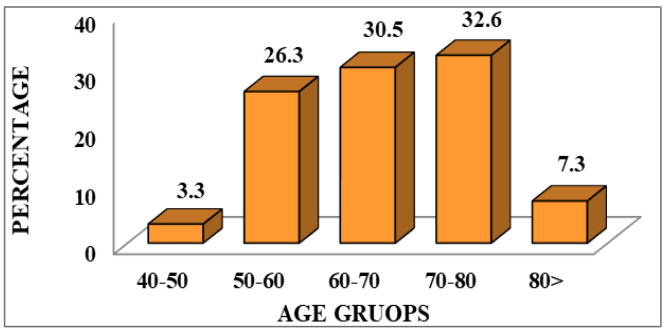

Fig 1: Age group distributions

The above graph illustrates the age distribution of that the patients were predominantly of the age group in between 70-80 years, followed by the age group of 60-70 years old patients.

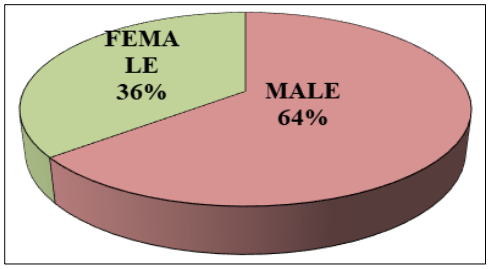

Fig 2: Gender-wise distribution

It was found that of the whole study subjects, 64 % of patients (67) & 36% (28) were males & females respectively.

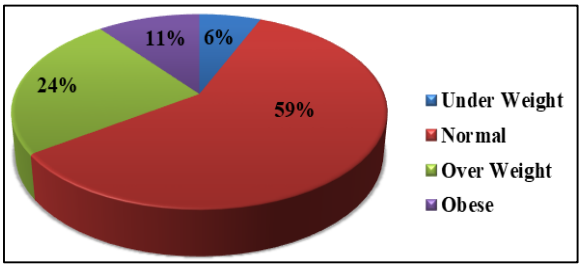

Fig 3: Distribution of population based on body mass index

The above chart depicts that patients with normal weight were 59% followed by over- weight with 24%.

Assessment of factors contributing to parkinson's disease:

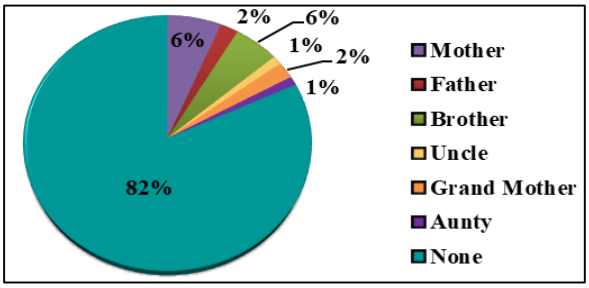

Fig 4: Analysis based on family history

The Family wise distribution of patients can be concluded as follows.
It was found that the family of first degree amount to 16% and those of the second degree amount to 2% of the total population.

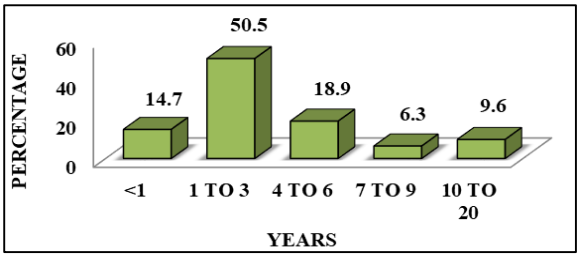

Fig 5: Onset of disease

This graph interprets that the onset of Parkinson's disease of the patients had an onset period of 1-3 years (50.5%).

Unified Parkinson's disease Rating Scale

Table 1: Mean Distribution and paired T-Test for UPDRS

	Mean	N	Standard Deviation	Standard Error Mean	
UPDRS 1 Score	106	95	35.854	3.6785	
UPDRS 2 Score	105	95	34.1678	3.5055	

	Paired Differences					T-Value	Differential factor	Significance (2-tailed)
	Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
UPDRS 1 Score - UPDRS 2 Score	1.5789	12.4187	1.2741	-0.9509	4.1088	1.239	94	0.218

There is no significant difference between the UPDRS scores from visit to follow-up.

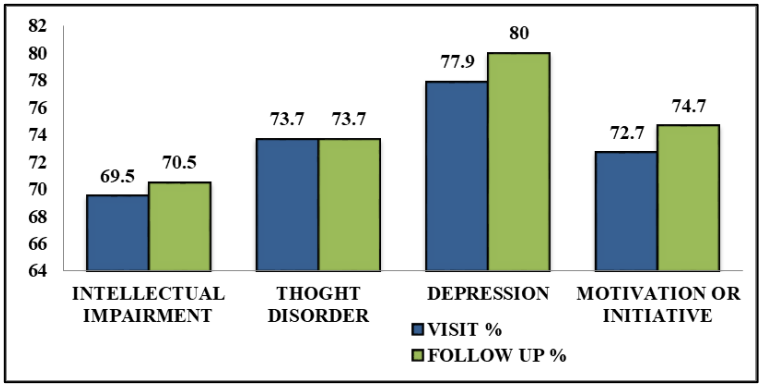

Fig 6: UPDRS-I (Mentation, behaviour & mood)

Among the four components of UPDRS-1 depression was found to be of the highest percent. An increase has been observed in the degree of depression from Visit-1 to Visit-2 i.e. from 77.9% to 80% respectively.

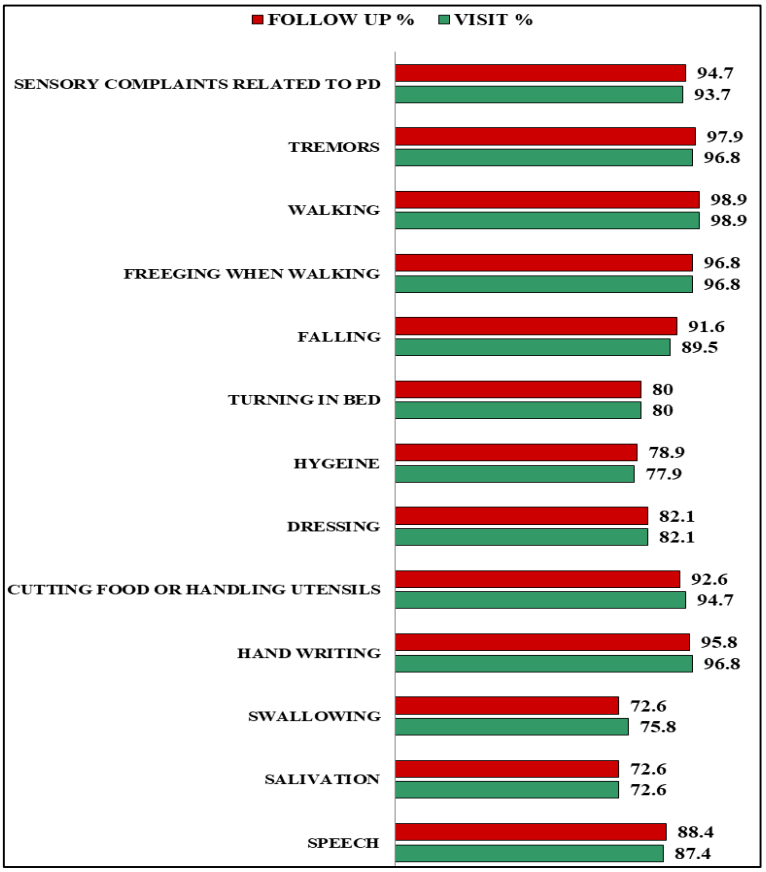

Fig 7: UPDRS-2 activities of daily living

This graph illustrates that the impairment of parkinson's patients in performing daily activities. Impairment of sensory complaints has improved by 1%, tremors by 1.1%, falling by 2.1%. Handwriting and Swallowing have worsened by 1% and by 3.2% respectively.

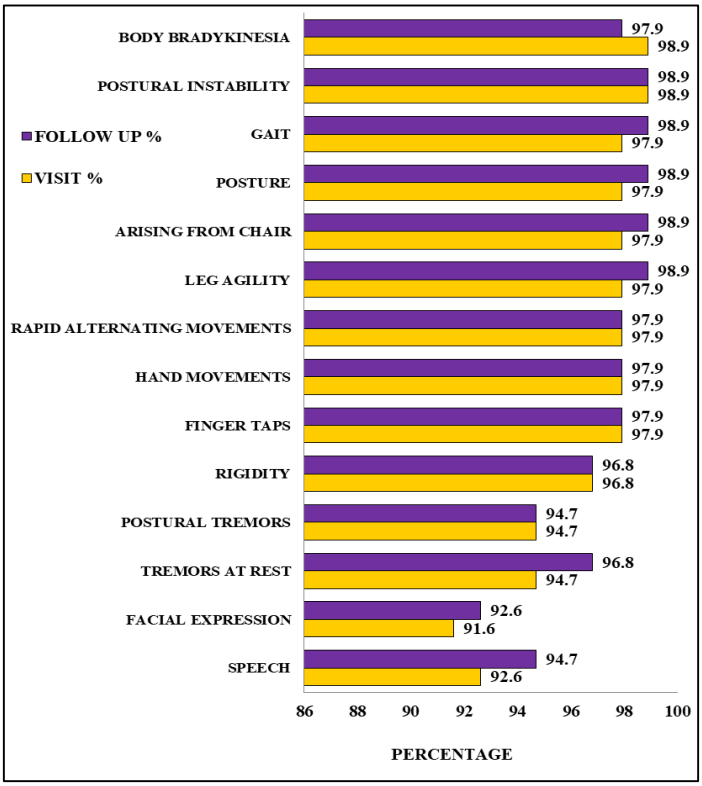

Fig 8: UPDRS-3 motor examinations

The above graph represents the motor examinations of Parkinson's patients. It was found that impairments of body bradykinesia, postural instability, gait, and leg agility were found to be greater than 98%. There was an increase observed in the severity of body bradykinesia by 1%. A decrement of 1% was observed in gait, leg agility, arising from chair and posture from Visit-1 to Visit-2. Tremors at rest have been improved by 2.1%, Facial expression has improved by 1% and Speech has improved by 2.1% from Visit-1 to Visit-2.

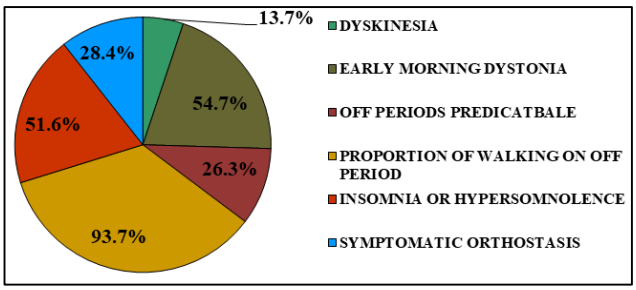

Fig 9: Complications of therapy

The graph represents the complications of therapy amongst the study population. Among them, dyskinesia was observed in 13.7%, early morning dystonia in 54.7%, symptomatic orthostatic in 28.4% and Insomnia/Hyper somnolence in 51.6%.

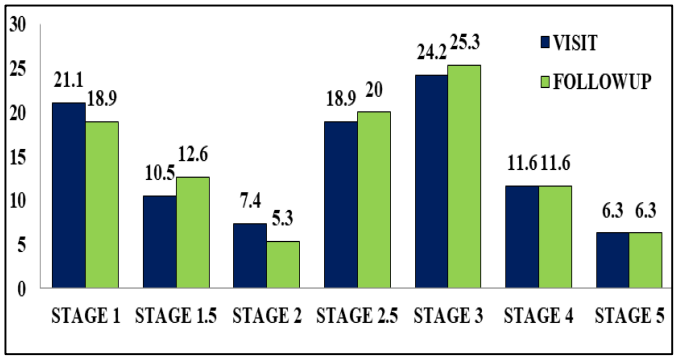

Fig 10: Hoehn & Yahr modified staging scale

This graph explains the percentage of patients in specific stages based on Hoehn & Yahr Modified Scale. It was found that the highest % of patients was found in Stage 3 followed by Stage 1. There was a decrement in the patient % in Stage 1 and Stage 2 by 2.2 and 2.1% respectively after Visit-2. Similarly, an increment was observed in stages 1.5, 2.5 and 3 by 2.1, 1.1 and 1.1 % respectively. Stage 4 and 5 patient population was constant in both Visit-1 and 2.

Table 2: Paired T-Test distribution for staging

	Paired Differences					T-Value	Differential factor	Significance (2-tailed)
	Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
V1-Stage - V2-Stage	-.0263	.1122	.0115	-.0492	-.0035	-2.285	94	.025

There was significance difference in the staging scale before and after follow up.

Table 3: Mean distribution for staging

	Mean	N	Standard Deviation	Standard Error Mean
V1-Stage	2.495	95	1.1520	.1182
V2-Stage	2.521	95	1.1390	.1169

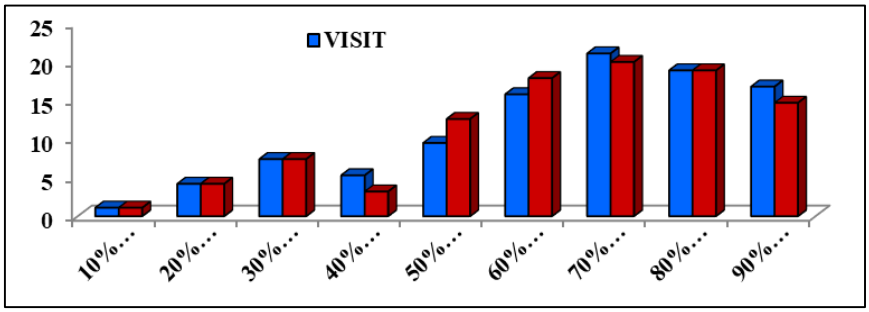

Fig 11: Distribution based on Schwab and England disability scale

This graph describes the disability of motor movements. It is interpreted that 21.1% and 20% of the patients were disabled to a degree of 70 % in Visit and follow-up respectively. This is followed by 18.9% of patients who fall under the 80% disability category. The patients under 10%, 20%, 30% and 80% disability category have had no change in their disability level before and after follow-up. The patients under 40%, 70% and 90% disability category have shown a decrement in their disability level by 2.1%, 1.1% and 2.1% respectively.

Table 4: Mean Distribution for disability index

	Mean	N	Standard Deviation	Standard Error Mean
V1 Disability %	64.526	95	20.5648	2.1099
V2 Disability %	63.895	95	20.0688	2.059

Analysis of non motor symptoms

Table 5: Mean Distribution for non motor symptoms

	Mean	N	Standard Deviation	Standard Error Mean
NON-Motor Symptoms-1	1.2074	95	.79134	.08119
NON-Motor Symptoms-2	1.2211	95	.78292	.08033

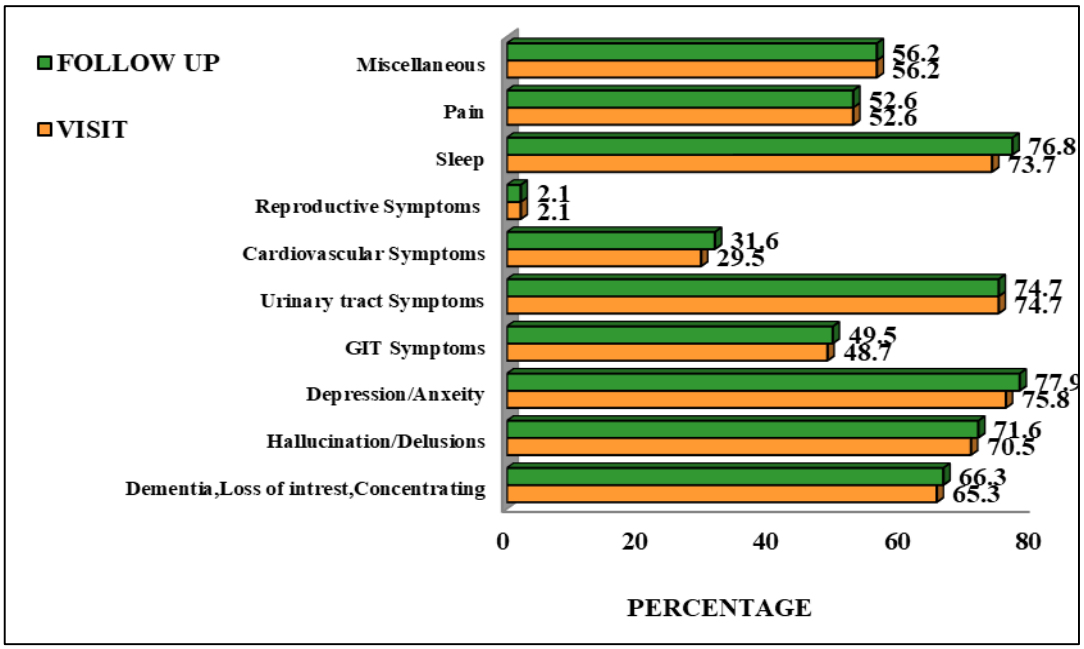

Fig 12: Non motor symptoms in the population

This graph depicts the non-motor symptoms exhibited by the patients under the study. It can be interpreted that the patients with Depression/Anxiety, Sleep problems, Urinary tract problems and Hallucination/Delusions were above 70 % and an inclination in their malady has been observed. There was an incline in the percentage of gastrointestinal symptoms by 0.8%, Dementia by 1 %, Hallucinations by 1.1%, cardiovascular symptoms by 2.1 % and sleep by 3.1%.

Assessment of depression, cognitive impairment and sleep
Analysis for depression

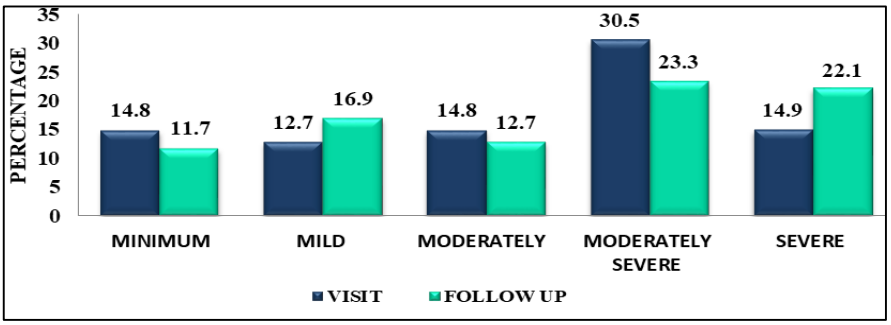

Fig 13: Patient Health Questionnaire

This graph explains about the difference of depression in the patients under the study. Most of the patients were seen in the moderately severe category. It was found that a decrement of 3.1, 2.1 and 7.2% was found in the patients under minimum, moderate and moderately severe categories respectively. Patients under mild and severe categories showed and increment of 4.2 and 6.2% respectively.

Table 6: Mean distribution for depression scale

	Mean	N	Standard Deviation	Standard Error Mean
Visit PH9	11.147	95	7.7363	0.7937
Follow-UP PH9	11.989	95	8.0958	0.8306

Table 7: Paired-t test for Depression scale

	Paired Differences					T-Value	Differential factor	Significance (2-tailed)
	Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
V-PH9 - F-PH9	-0.8421	3.3749	0.3463	-1.5296	-0.1546	-2.432	94	0.017

This table explains that there is a significant difference in depression scores from visit to follow-up.

Analysis for cognitive impairment

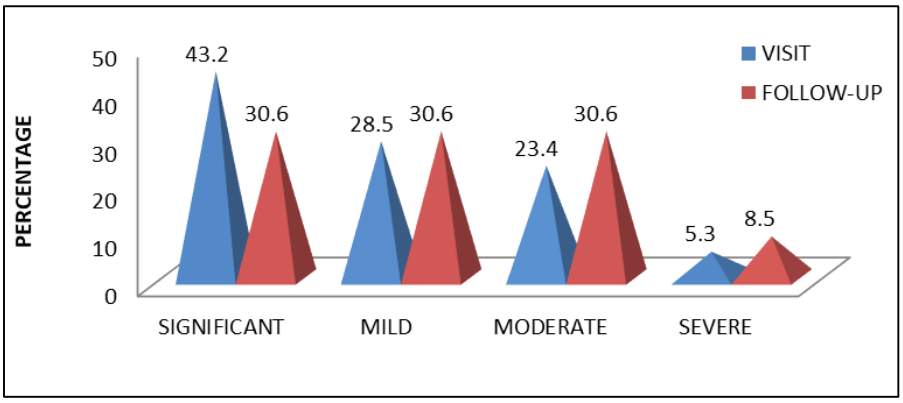

Fig 14: Mini mental scale examination

This graph illustrates the Cognitive examination of the patients. Most of the patients during visit fall under the significant category. During the follow-up there was a decline in the significant category i.e. by 12.6 % and an incline by 2.1% mild, 7.2% moderate and 3.2 % severe categories respectively.

Table 8: Mean distribution for MMSE

	Mean	N	Standard Deviation	Standard Error Mean
MMSE-VISIT	22.474	95	6.1762	0.6337
MMSE-follow UP	21.484	95	6.4969	0.6666

Table 9: Paired T-test for MMSE

	Paired Differences					T-Value	Differential factor	Significance (2-tailed)
	Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
V1-MMSE V2-MMSE	0.9895	2.0343	0.2087	0.5751	1.4039	4.741	94	0

This table explains that there is a significant difference in the mini-mental scale scores from visit to follow-up.

Parkinson's disease sleep scale

Table 10: Mean Distribution for Parkinson's disease sleep scale

	Mean	N	Standard Deviation	Standard Error Mean
PDSS – VISIT	6.6947	95	1.98973	.20414
PDSS- FOLLOW-UP	6.6625	95	2.00627	.20584

Table 11: Paired T-Test for Parkinson's disease sleep scale

	Paired Differences					T-Value	Differential factor	Significance (2-tailed)
	Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
PDSS1-Q15 - PDSS2-Q15	0.1579	0.6411	0.0658	0.0273	0.2885	2.401	94	0.018

There is a significance difference (p=0.018) from visit to follow-up in the 15th component of PDSS.

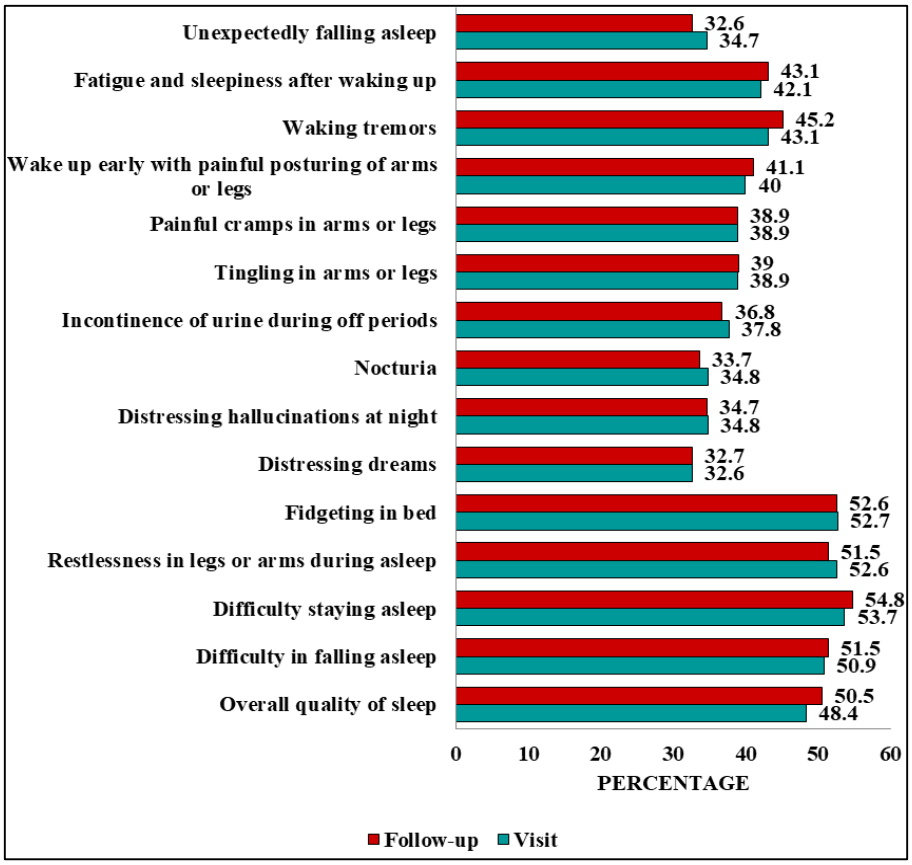

Fig 15: Severity percentage in PDSS

The above graph interprets the patients who fall under the category of severe sleep disturbances. The analysis reveals that distressing dreams, unexpectedly falling asleep in mornings, nocturia, hallucinations were fewer than 35%. There is an inclining in the scores of unexpectedly falling asleep by 1.9%, waking tremors by 2.1%, difficulty staying asleep by 1.1%, difficulty falling asleep by 0.6% and overall sleep quality by 2.1% during follow up. Also decline in the scores of nocturia, incontinence of urine due to off period, fatigue by 1.1%, 1% and 1% during follow up. It is also observed that hallucinations, fidget in bed, tingling and painful cramps in arms and legs were same before and after follow up.

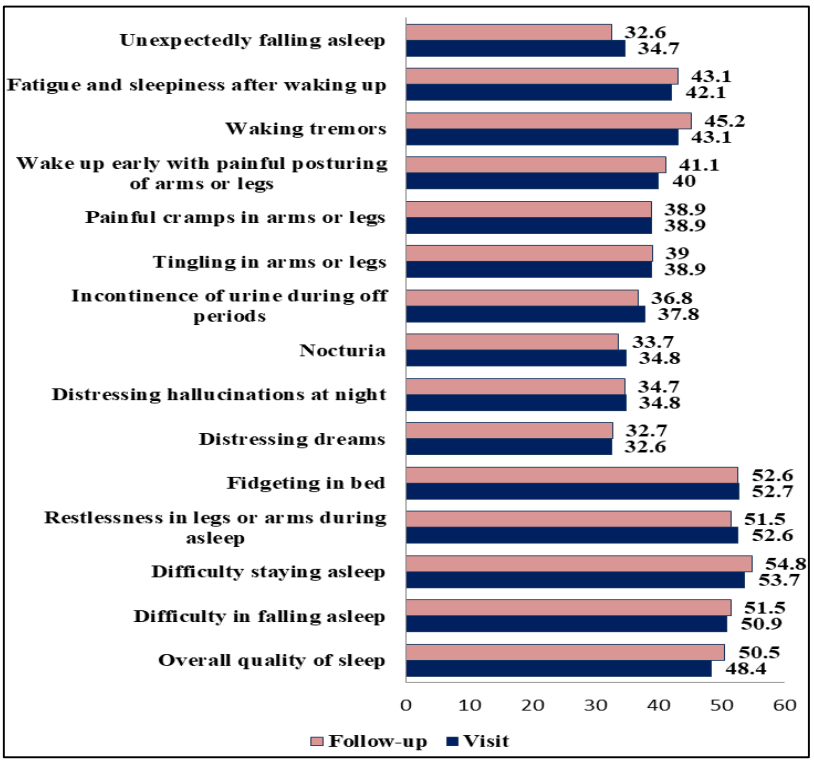

Fig 16: Percentage of people with moderate scoring in PDSS

The above graph interprets the patients who fall under the category of moderate sleep disturbances. The analysis reveals that distressing dreams, unexpectedly falling asleep in mornings, nocturia, hallucinations were fewer than 35%. There was a decline in the scores of unexpectedly falling asleep by 2.1%,incontinence of urine during off periods by 1%,nocturia by 1.1%,restlessness in arms and legs by 1.1%,difficulty staying asleep by 1.1%,difficulty falling asleep by 0.6%,overall quality of sleep by 2.1% during follow-up. Also incline in scores of Fatigue by 1%, waking tremors by 2.1%waking up early with painful posturing of arms and legs by 1.1% during follow up. It is also seen that distressing dreams, tingling and painful cramps in arms and legs were same during visit up.

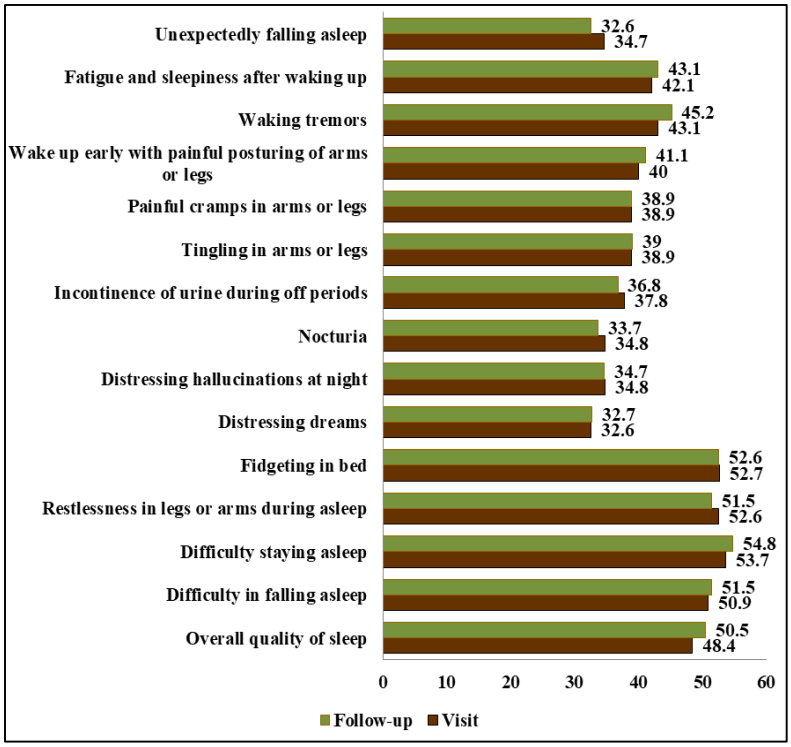

Fig 17: Percentage of people under mild category in PDSS

The above bars represent the different sleep components that are mildly affected. The results illustrates that unexpectedly falling asleep, nocturia, distressing hallucinations and distressing dreams were under 35%. It is seen that there is decline in scores of unexpectedly falling asleep by 2.1%, incontinence of urine due to off periods by 1%, nocturia by

1.1% and restlessness in arms and legs by 1.1% during follow-up. Incline in the scores of fatigue by 1%, waking up early with painful posturing of arms and legs by 1.1%, difficulty staying asleep by 1.1%, difficulty of falling asleep by 0.6% and overall quality of sleep by 2.1%. Also painful cramps and tingling of legs and arms, distressing dreams and hallucinations, fidget were almost same before and after follow up.

Co-relation of PDQ-39 with UPDRS, stage, disability, PHQ-9, MMSE, PDSS AND NMSQ:

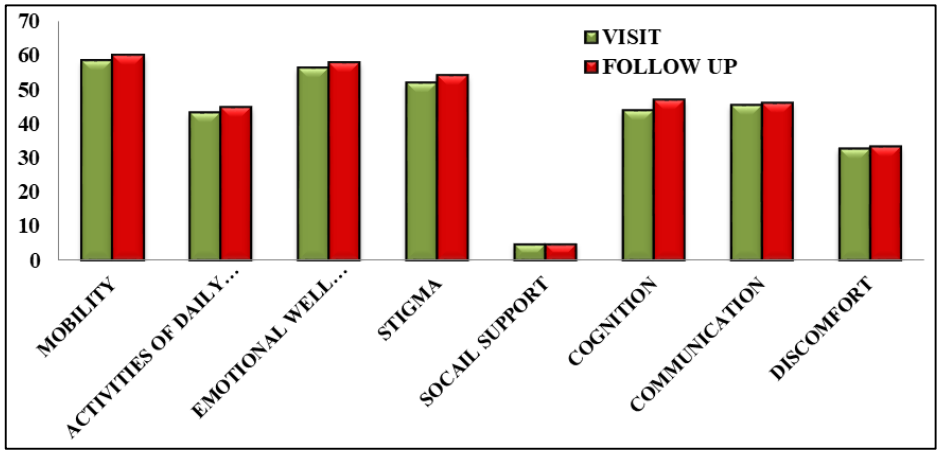

Fig 18: Graph based on the mean scores of PDQ-39

The graph illustrates the different factors affecting a patient's quality of life. It was observed that mobility, emotional well-being and stigma are the most effected components of a patient's life quality. An inclination was found amongst all the components except social support i.e. mobility and activities of living by 1.4 % each, emotional well-being by 1.5 %, stigma by 2.2 %, cognition by 3 %, communication and discomfort by 0.7 %.

Table 12: Paired T-Test for PDQ-39

	Paired Differences					T-Value	Differential factor	Significance (2-tailed)
	Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
PDQ1-Cognition% - PDQ2-Cognition %	-2.93158	9.66964	0.99208	-4.90139	-0.96177	-2.955	94	0.004

No other factor except cognition in the PDQ-39 table has shown significant difference from visit to follow up.

Pharmacotherapy of parkinson's disease

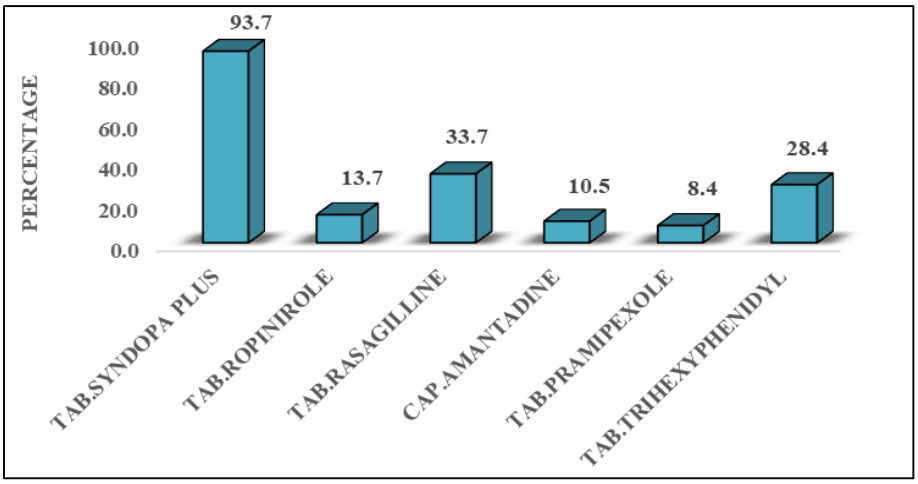

Fig 19: Percentage of parkinson's drugs prescribed in the study

The above bar graph depicts the percentage of anti-Parkinson's drugs given to the patients. Tab. Syndopa plus combination of levodopa and carbidopa was given to the highest no. of patients i.e. 93.7%. Second highest percentage was that of Tab Rasageline i.e. 33.3% followed by Tab. Trihexyphenidyl (28.4%).

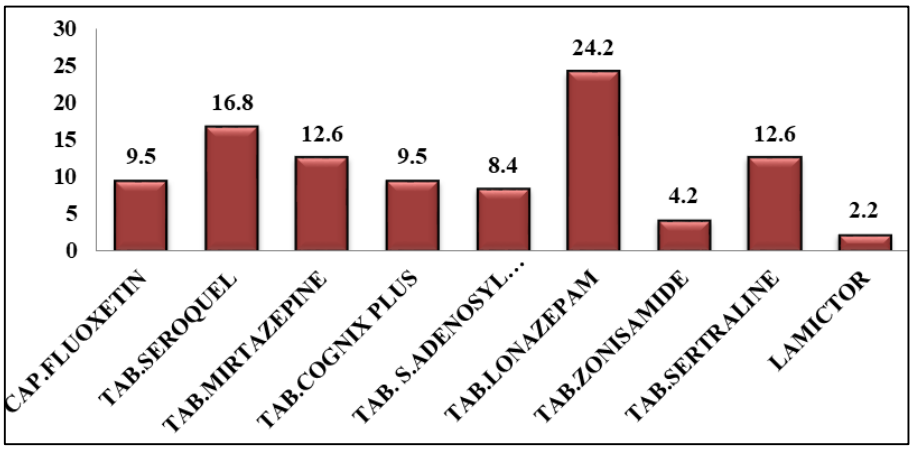

Fig 20: Percentage of drugs prescribed for sleep, depression and cognitive impairment

The graph illustrates the percentage of drugs related to the conditions like depression, cognitive impairment, sleep and dementia. Amongst all the drugs tab. Lonazepam was found to be the highest percentage i.e., 24.2% for sleep followed by tab. Seroquel (16.8%) for cognitive impairment and hallucinations followed by sertraline (12.6%) for depression.

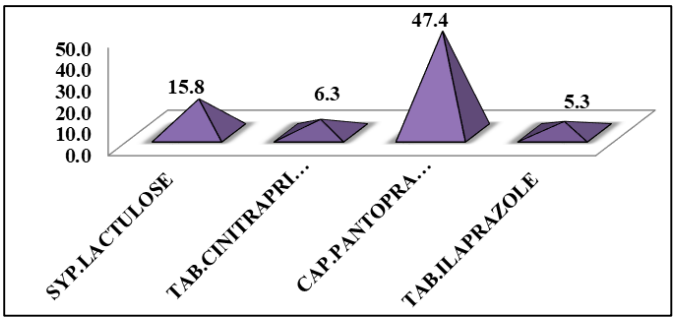

Fig 21: Percentage of drug related to GIT Prescribed in the study

The graph analyse the drugs related to gastrointestinal problems in Parkinson patients. Amongst the entire drugs cap. Pantoprazole was given about 47.4% which is used to decrease gastric acid secretion followed by Syp. Lactulose was given about 15.8% for constipation.

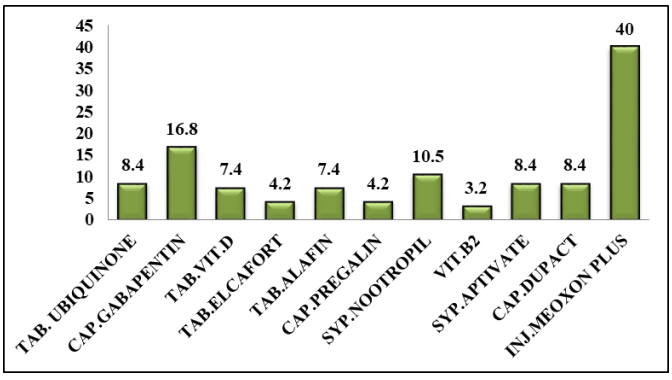

Fig 22: Percentage of other drugs given in the study

The bar graph explains the percentage of different drugs used to treat nerve damage, paresthesia, nerve nourishment and appetizer. Comparatively Inj. Meoxon plus was given to highest no. of patients (40%) which is a vitamin and a folic acid supplement. Next highest was cap. Gabapentin which was given to 16.8% patients for nerve damage.
Tab. Ubiquinone (antioxidant) was given to 8.4% patients, Vitamin D and Vitamin B2 was given to 7.4% and 3.2% patients, tab. Elcafort (4.2%), tab. Alafin (7.4%) cap. Pregalin (4.2%), cap. dupact (8.4%) for nerve nourishment and syp. aptivate (8.4%) to increase hunger.

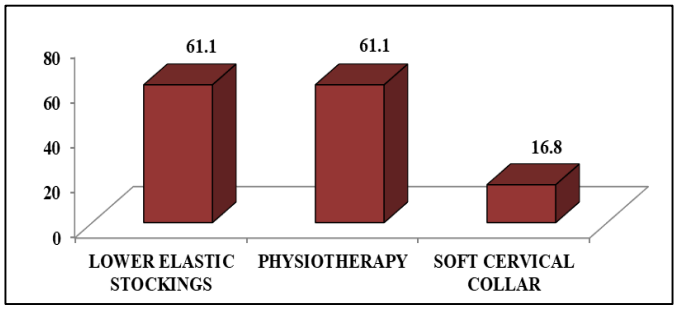

Fig 23: Percentage of non-pharmacological methods used in the study

The pie chart gives an outline of patients who were recommended for physiotherapy(61.1%) and usage of lower elastic stockings(66.1%) followed by 16.8% with cervical collars.

Table 13: Number of patients using anti parkinsonian drugs with different dosing and frequencies

Drug	Dose(MG)	Frequency					
		BID	TID	4 times	5 times	6 times	7 times
Syndopa Plus	125		18	40	11	18	1
Ropinirole	0.25		2				
	0.5	1	2				
	1		2				
	2		4				
	3		1				
	4		1				
Rasagilline	0.5	9					
	1	16	4				
	2	3					
Amantadine	100	6	2				
	300	2					
pramipexole	0.5		3				
	1		2				
	2.5		3				
Trihexyphenidyl	1	4	4				
	2	3	16				

Syndopa plus (125mg) with frequency 4 times a day was given to 40 patients, 3 times and 6 times per day was given to 18 patients, 5 times a day was given to 11 patients and 7 times a day to 1 patient. Ropinirole of dose 2mg BID was given to 4 patients. Rasageline of dose 1mg OID was given 16 patients. Amantidine of dose 100mg OID was given to 6 patients. Pramipexole of dose o.5mg and 2.5mg BID were given to 3 patients. Trihexyphenidyl of dose 2mg BID was given to 16 patients.

Table 14: Number of patients taking drugs for psychiatric abnormalities

Drug	Dose (mg)	Frequency		
		OID	BID	TID
Fluoxetine	20	1	2	1
	40		4	
	60	1		
Qutipin	12.5		1	
	25		9	
	40			2
	50		4	
Mirtazpine	7.5	1	6	
	15	1	4	
Cognix plus	1 TABLET		5	4
Daxid	25		7	
	50		3	
	100	2		
Lonazep	0.12	2		
	0.25	14		
	0.5	4		
	1	3		
Adesam	400		8	

Fluoxetine of dose 40mg BID was given to 2 patients. Qutipin of dose 25mg BID was given to 9 patients. Mirtazepine of dose 7.5mg BID was given to 6 patients. Cognix plus BID was given to 5 patients. Daxid of dose 25mg BID was given to 7 patients. Lonazepam of dose 0.25mg at night times was given to 14 patients. Adesam of dose 400mg BID was given to 8 patients.

Conclusion

- This study revealed that Parkinson's disease was more prone in males (64%) than in females (36%). Out of them most of the patients were 60-70 years with onset of 1-3 years; 18%of subjects reported genetic relation as an etiological factor.
- UPDRS scale reveals that out of the 4 components that were examined, motor examination was the most impaired followed by disturbances in Activities of Daily Living and highest percentage of patients reported Depression. Complications of therapy reveal that 13.7% patients reported dyskinesia while 54.7% reported dystonia and 51.6% reported with insomnia.
- Prevalence of depression and cognitive impairment shows that moderately severe Depression And Significant Cognition were followed by mild and moderate Cognition
- The study population shows that females are more depressed than males; in contrast males were more prone to Cognitive Impairment than females.
- Sleep scale reveals that hyper somnolence was found in most of patients followed by Hallucinations and Distressing Dreams.
- A significant co-relation between PDQ-39 AND UPDRS, Staging, Disability, Depression, Cognitive Impairment, Sleep Disturbances and Non-Motor Symptoms represent that these all factors impact the Quality Of Life of a patient.
- Lonazepam was prescribed to 24.25 % patients for sleep, Seroquel was prescribed for 16.8% for cognition and hallucinations, 13.6% of patients were given sertraline for depression. Eventually pantoprazole was given to decrease gastric acid, Meaxon plus was given for nerve nourishment in highest percentage.
- Non-Pharmacological methods include lower elastic stockings (61.1%), physiotherapy (61.1%) and soft cervical collar (16.8%).
- For deeper understanding of the condition of the patient as well as the effects of the disease upon these patients it is imperative that the study is carried out for a longer period of time and with large sample which will unveil the aspects of the disease which have not been revealed in this study.

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