

## Parkinson Disease and Ayurveda

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### Research Article

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### Abstract

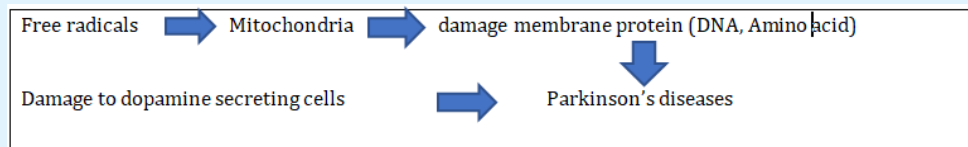
Parkinson's disease, a degenerative brain disease of dopamine secreting brain cells Substantia nigra is increasing progressively and presents therapeutics-levodopa, carbidopa, MAOB inhibitor, COMT inhibitors, surgery and deep brain stimulations, though improve presenting feature but not quality of life. Present study using herbal composite containing *Mucuna pruriens*, *Herpestis monnieri*, *Acors calamus*, *Nardostachys jatamansi* and *Withania somnifera* taken in equal part shows better quality of life in all most all with marked improvement in movement disorder in 92% cases as compared to 39% cases on conventional therapy. In addition Herbal composite also improve the haematological, hepatic and Renal function by bioregulating body biomechanics and neural cell function, revitalizing neural cell damage in substantia nigra check destruction of dopamine and facilitate optimal level of Dopamine for normal brain function.

**Keywords:** Parkinson Disease; *Substantia Nigra*; Dopamine; Livodopa; Carbidopa; MAOB Inhibitor; COMT Inhibitor; Deep Brain Stimulation

### Introduction

Parkinson disease is a chronic progressive and degenerative disease of Central Nervous System and presents with movement disorders which prompt handicap in long time [1-3]. This is considered as a combination of genetic susceptibility, exposure to one or more disease triggering environmental factor [4,5]. Clinical manifestations are solely due to degenerative

change in *substantia nigra*, a seat of an important neuro transmitter synthesis i.e. Dopamine and 60-80% loss of dopamine secreting cells presents with dreaded presentation of movement disorder i.e.- tremor, rigidity, bradykinesia, postural instability. In addition changing dietary habits and lifestyle causes free radical accumulation also triggers the clinical presentation [6-14] (Figure 1).



**Figure 1:** Dietary habits and lifestyle clinical presentation.

The commonest diagnostic tool remains the clinical acumen but MRI is considered commonly prescribed investigation as CSF examination remains non conclusive [15]. Commonly prescribed therapeutics are levodopa, carbidopa, MAO B inhibitor and COMT inhibitor, Presently surgery and deep brain stimulation are also quite in vogue [16,17]. Long term Levodopa use is frequently associated with serious impact on patents quality of life; inhibition of peripheral amino acids decarboxylase is administered to achieve proper dopamine concentration in Central Nervous System.

Inspite of all the available therapeutic modalities incidence of Parkinson's disease increasing and affects 1% of the people above the age of 65 years and presently it is 247per lakh. There is no homogenous and large epidemiological data on PD from India. Razdan, et al. reported a crude prevalence rate of 14.1 per 100,000 amongst a population of 63,645 from rural Kashmir in the northern part of India. The prevalence rate over the age of 60 years was 247/100,000.

Thus today's need is safe affordable and curative therapeutics.

- **Objective of the study:** Evaluate the comparative therapeutic efficacy of herbal composite in management of parkinsons disease.
- **Design of the study:** comparative

- **Interest of conflicts:** None
- **Ethical committee:** Ethical committee approves the evaluation of status of safe herbal composite in management of Parkinson disease.

## Material & Methods

### Material

Patients attending neuro clinic of RA Hospital & Research Centre Warisaliganj (Nawada) and Aarogyam Punrjeevan, Patna 14 having complaints of movement disorders were considered for the proposed study.

Patients with severe debility, bed ridden and associated other disease like diabetes mellitus and hypertension were excluded from the study.

### Methods

Selected patients and their attendants were thoroughly interrogated for their presenting features, their duration, age of onset, disease progression, treatment taken, their effects and adversity. Patients were clinically examined and investigated for their basic bioparameters to adjudge the effect of drug or drug related adversity (Table 1).

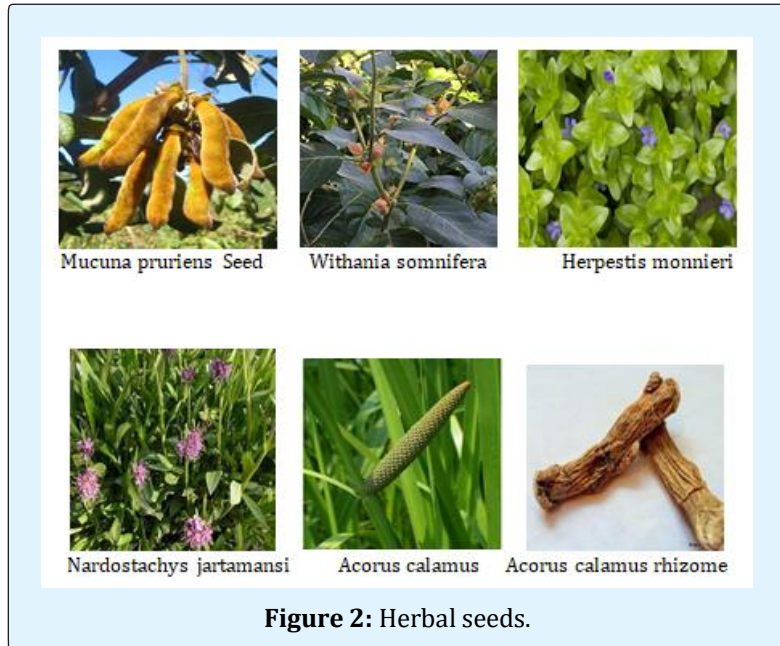
Stage	Characteristics
I	symptoms of one side of the body
II	symptoms on both side of the body, no balance impairment
III	balance impaired, physically independent
IV	severe debility and still able to walk or stand
V	wheel chair or bed ridden

**Table 1:** Selected patients were graded as per clinical presentation (as per Hochu and Yahr sstaging).

Selected patients were classified in two groups having equal number of patients with similar status and each group were advised (Figure 2).

**Group A:** conventional treatment with Levodopa /carvidopa

**Group B:** herbal composite



Each Capsules of 500 mg constitutes equal part of  
*Mucuna pruriens* seed- 100mg  
*Withania somnifera* root-100mg  
*Herpestis monnieri* leaf-100mg  
*Nardostachys jatamansi*-100mg  
*Acorus calamus* rhizome-100mg

**Dose schedule:** 1 cap every 8 hours

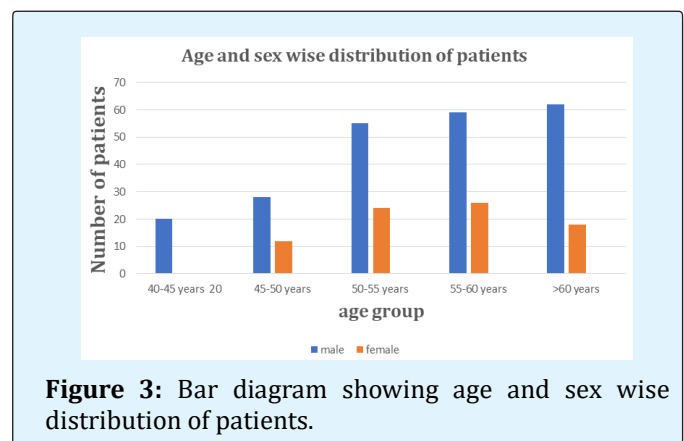
Each patient were given a follow up card to enter the changes in movement, stability and handwriting with an instruction to attend the centre on every alternate Friday for first 6 months and every 3 months afterward. Patients were followed by the Medical social worker of the organization to ascertain the changes in clinical presentation. To adjudge the improvement in CNS function handwriting was analysed digitally on tab (Table 2).

Clinical grade	Characteristics
Excellent	complete absence of movement abnormality without any adjuvant, drug adverstity and withdrawal or relapse
Good	marked improvement in clinical presentation with occasional dystonia No drug adverstity
Poor	only transient relief with frequent recurrence and adverstity

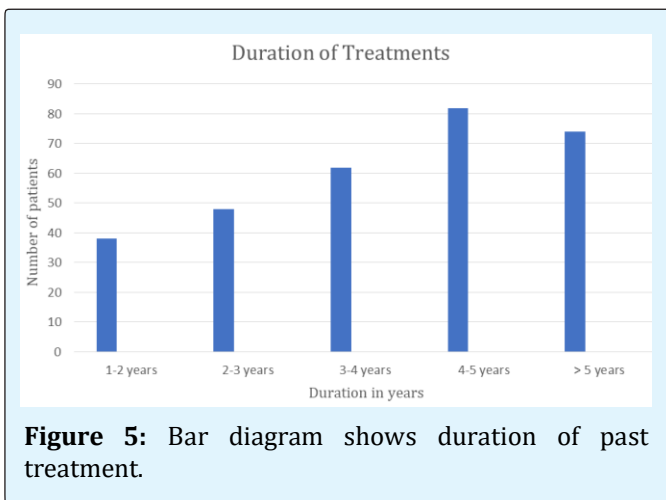
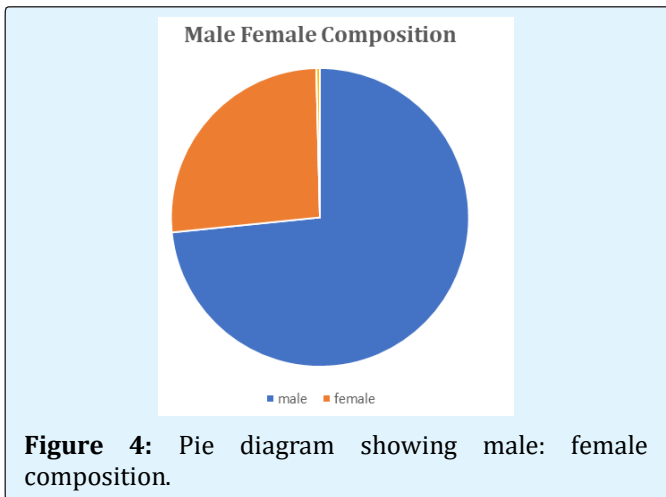
**Table 2:** Clinical response was adjudged.

### Observation

Selected patients were of age group 40->60 years with male predominance over the female and majority patients were of age >60 years, 73.7% male and 26.3% female were of age group 55-60 years, 6.6% of 40-45 years, 26.3% were of >60 years (Figures 3 & 4). Out of all 12.5% were taking treatment since last 1-2 years, 27% sine 4-5 years while 24.3% since >5 years (Figure 5).



**Figure 3:** Bar diagram showing age and sex wise distribution of patients.



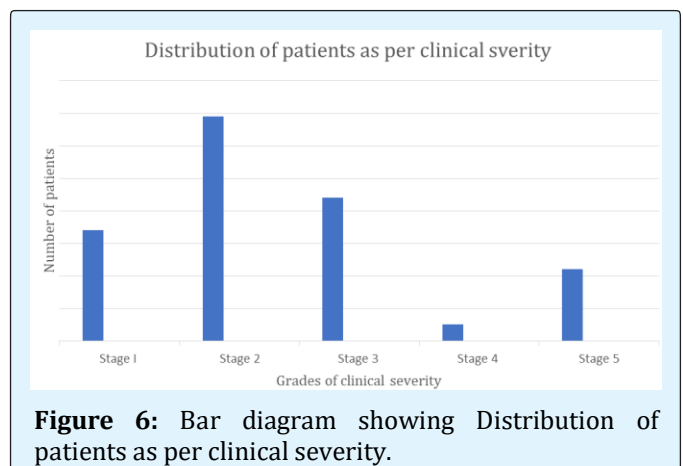
22.4% were presenting with movement disorder, 45.4% with movement disorders on both side and 29% with balance disorder (Tables 3 & 4). As per clinical severity 22.4 %, 45.4%, 29% and 3.2% are of stage I,II,III and IV respectively (Figure 6). Out of all basic bio parameters of the selected patients 77.6% patients had haemoglobin <10 gram %, Serum bilirubin >1mg%, SGOT and SGPT >30 IU, Alkaline phosphatase>130 in 5.3%, blood sugar (Fasting) >100mg% in 3.3% cases .

Clinical Presentation	Number of patients
Movement disorder on one side of the body	68
Movement disorder on both side of the body	138
Balance impairment	88
Severe debility	10
Wheel chair Or bed ridden	14

**Table 3:** Showing distribution of patients as per their presentation.

Basic bio parameters	Number of patients
<b>Hematological</b>	
Hemoglobin	
<10gm %	236
>10gm%	68
<b>Hepatic profile</b>	
Serum bilirubin	
<1mg %	236
>1mg%	68
SGOT	
<30 IU/L	236
>30 IU/L	68
SGPT	
<30 IU/L	236
>30IU/L	68
Alkaline phosphatase	
< 100	288
>100	16
<b>Diabetic profile</b>	
Blood sugar	
Fasting	
<100mg%	294
>100mg%	10
<b>Renal profile</b>	
Blood urea	
<30mg%	304
>30mg %	-
Serum Creatinine	
<1.5mg%	304
>1.5mg%	-

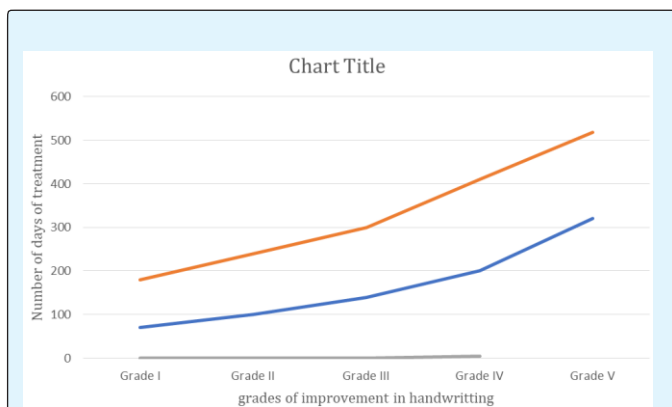
**Table 4:** Showing basic bio –parameters.



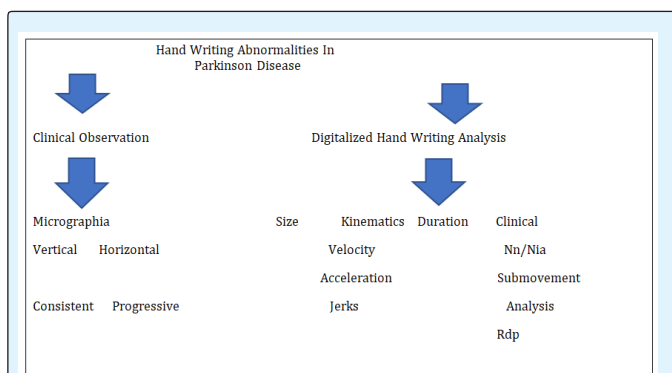
## Result

Patients on herbal composite shows early and better movement improvement as adjudged by handwriting or

hand movement (ascertained digitally) than other group i.e.-92% patients on herbal composite had normal hand writing while on conventional therapy only 39% cases (Figures 7 & 8). Therapeutic outcome is better in both cases i.e. herbal composite alone or herbal composite with conventional drug than mere conventional therapy, almost 100 % than 22.4% on conventional therapy. Post therapy bioparameters get improved in all the cases on Herbal composite than 02 patients on conventional therapy had worsening of parameters.



**Figure 7:** Graph showing improvement in handwriting in mean duration of treatment.



**Figure 8:** Showing hand writing changes.

## Conclusion

Herbal composite constituting equal parts of *Mucuna pruriens*, *Herpestis monnieri*, *Acorus calamus*, *Nardostachys jatamansi* and *Withania somnifera* proves worth in patients of Parkinson's disease in alleviating clinical presentation and improving quality of life without any untoward effects or withdrawal manifestation.

## Discussions

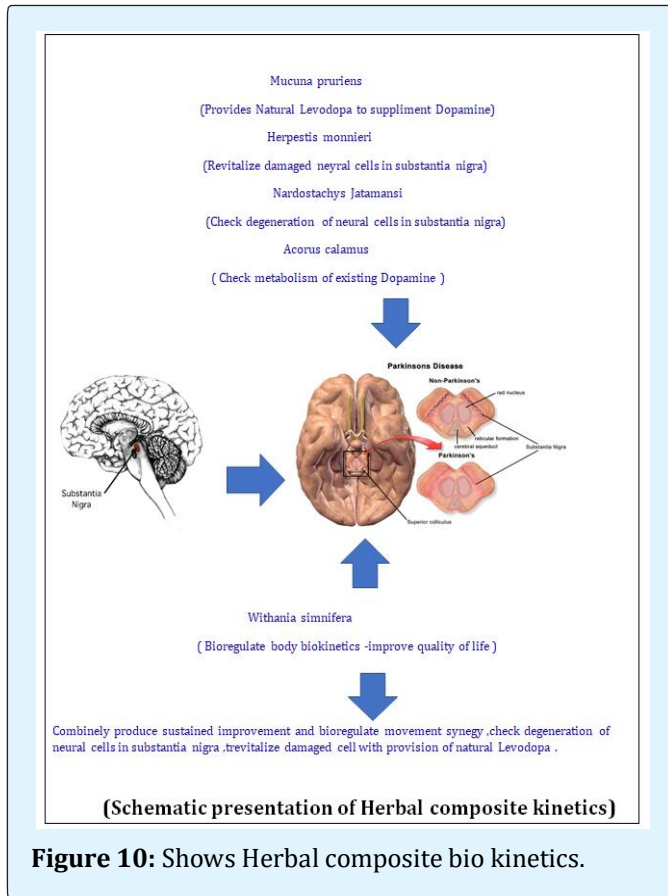
Parkinson disease affecting elderly and more male than female result in handicap and bed ridden in spite of advanced therapeutics like surgery and deep brain stimulation, current therapeutics though control movement disorder but fails to improve quality of life. Present study of comparative evaluation of herbal composite versus conventional therapeutics shows superiority of herbal composite than conventional i.e.-92% patients on Herbal composite had grade I clinical recovery and better quality of life without any adversity or disease related sequel or required any adjuvant as compared to 39% on conventional therapeutics and is attributed to

- **Mucuna pruriens:** Provides Natural Levodopa to supplement Dopamine
- **Herpestis monnieri:** Revitalize damaged neural cells in substantia nigra
- **Nardostachys jatamansi:** Check degeneration of neural cells in substantia nigra
- **Acorus calamus:** Check metabolism of existing Dopamine
- **Withania somnifera:** Bioregulate body biokinetics - improve quality of life

Hence combinely produce sustained improvement and bioregulate movement synergy ,check degeneration of neural cells in substantia nigra ,revitalize damaged cell with provision of natural Levodopa (Figures 9 & 10) [18-33].

Parkinson Disease					
	Stage I	Stage II	Stage III	Stage IV	Stage V
	68	138	88	10	44
Selected patient					
304					
Group A					Group B
(152)					(152)
Trial drug	A1		A2		Conventional therapy
Only trial drug	Trial drug plus continuing drug				
Outcome:	A1	A2	B		
Grade I	75	76	34		
Grade II	01	-	110		
Grade III	-	-	08		
Post therapy bio parameter					
Unchanged	76	76	150		
Changed	-	-	02		
Urine albumin	-	-	01		
Raised SGOT	-	-	02		
	&SGPT				
Decreased Hb	-	-	02		

**Figure 9:** Outcome of the study.



**Figure 10:** Shows Herbal composite bio kinetics.

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