

# Parkinson disease and Ayurveda

## 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

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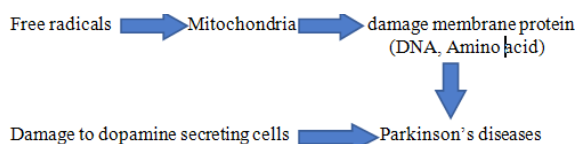
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## Introduction

Parkinson disease is a chronic progressive and degenerative disease of Central Nervous System and presents with movement disorders which prompt handicap in long time.<sup>1-3</sup> This is considered as a combination of genetic susceptibility, exposure to one or more disease triggering environmental factor.<sup>4,5</sup> 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.<sup>6-14</sup>



The commonest diagnostic tool remain the clinical acumen but MRI is considered commonly prescribed investigation as CSF examination remain non conclusive.<sup>15</sup> Commonly prescribed therapeutics are levodopa, carbidopa, MAO B inhibitor and COMT inhibitor, Presently surgery and deep brain stimulation are also quite in vogue.<sup>16,17</sup>

Long term Levodopa use is frequently associated with serious impact on patients quality of life, inhibition of peripheral amino acids decarboxylase is administered to achieve proper dopamine concentration in Central Nervous System.

In spite of all the available therapeutic modalities incidence of Parkinson's disease increasing and affects 1% of the people above the age of 65years 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 60years 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 and methods

### Material

Patients attending neuro clinic of RA Hospital & Research Centre Warisaliganj (Nawada) and Aarogyam Punarjeevan, 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 bio-parameters to adjudge the effect of drug or drug related adversity.

Selected patients were graded as per clinical presentation (as per Hochu and Yahr staging )

## Stages 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

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

Group A: conventional treatment with Levodopa/carvidopa.

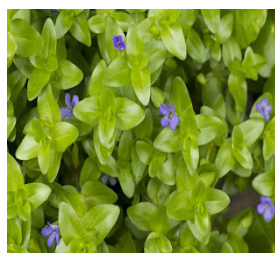
Group B: Herbal composite.



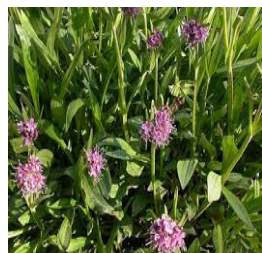
Mucuna Pruriens Seed



Withania Somnifera



Herpestis Monnieri



Nardostachys Jartamansi



Acorus Calamus Acorus



Calamus Rhizome

## Each Capsules of 500mg constitutes equal part of

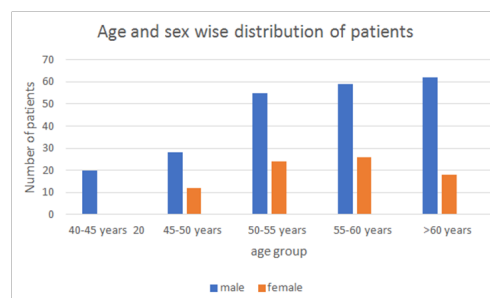
- Mucuna Pruriens Seed 100mg
- Withania Somnifera Root 100mg
- Herpestis Monnieri Leaf 100mg
- Nardostachys Jatamanshi 100mg
- Acorus Calamus Rhizome 100mg

Dose schedule: 1 caps every 8hours. 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 6months 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. Clinical response was adjudged as

Clinical grade	Characteristics
Excellent	Complete absence of movement abnormality without any adjuvant, drug adversity and withdrawal or relapse.
Good	Marked improvement in clinical presentation with occasional dystonia.
Poor	No drug adversity, Only transient relief with frequent recurrence and adversity.

## Observation

Selected patients were of age group 40->60years with male predominance over the female and majority patients were of age >60years, 73.7% male and 26.3% female were of age group 55-60 years, 6.6% of 40-45years, 26.3% were of >60years (Figures 1 & 2). Out of all 12.5% were taking treatment since last 1-2 years, 27% sine 4-5years while 24.3% since >5years (Figure 3). 22.4% were presenting with movement disorder, 45.4% with movement disorders on both side and 29% with balance disorder (Table 1). As per clinical severity 22.4 %, 45.4%, 29% and 3.2% are of stage I, II, III and IV respectively (Figure 4). Out of all basic bio parameters of the selected



patients 77.6% patients had haemoglobin <10gram %, Serum bilirubin >1mg%, SGOT and SGPT >30 IU, Alkaline phosphatase 130 in 5.3%, blood sugar (Fasting) >100mg% in 3.3% cases (Table 2).

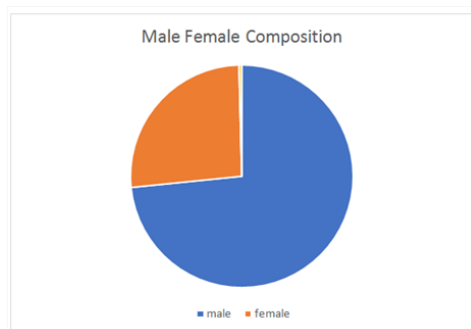
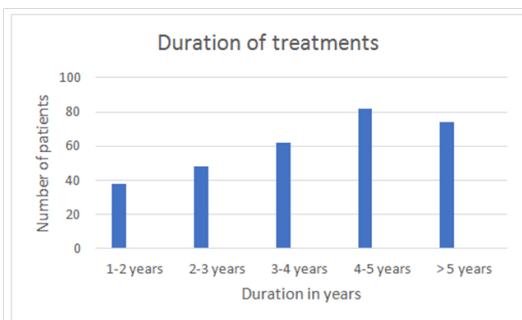
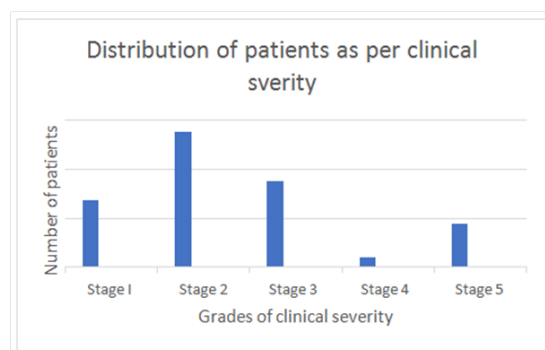
**Figure 1** Bar diagram showing age and sex wise distribution of patients.

**Table 1** Showing distribution of patients as per their presentation

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

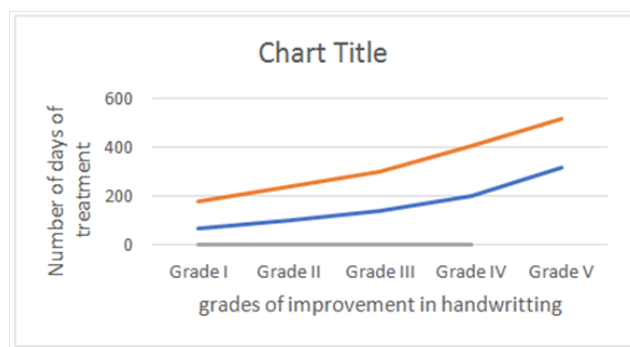
**Table 2** Showing basic bio –parameters

Basic bio parameters	Number of patients
<b>Haematological</b>	
Haemoglobin	
<10gm	236
>10gm%	68
<b>Hepatic profile</b>	
Serum bilirubin	
<1mg %	236
>1mg%	68
<b>SGOT</b>	
<30IU/L	236
>30IU/L	68
<b>SGPT</b>	
<30IU/L	236
>30IU/L	68
<b>Alkaline phosphatase</b>	
< 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%	-

**Figure 2** Pie diagram showing male: female composition.**Figure 3** Bar diagram shows duration of past treatment.**Figure 4** Bar diagram showing Distribution of patients as per clinical severity

## 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 (Figure 5). 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 5** Graph showing improvement in handwriting in mean duration of treatment.

## 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.

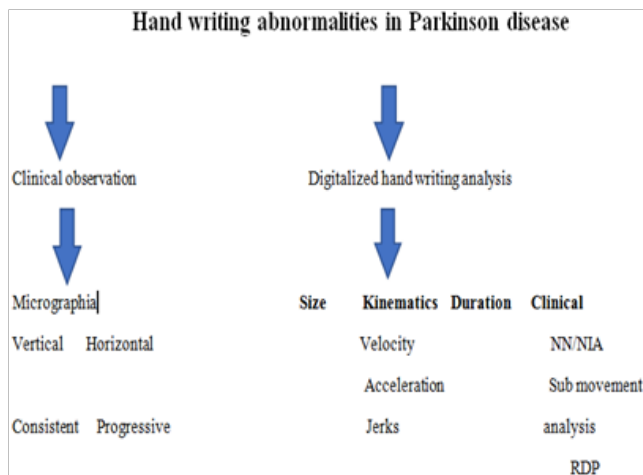
Herpestis monniieri: Revitalize damaged neural cells in substantia nigra.

Nardostachys jatamansi: Check degeneration of neural cells in substantia nigra.

Acorus calamus: Check metabolism of existing Dopamine.

*Withania simnifera*: Bioregulate body biokinetics -improve quality of life.

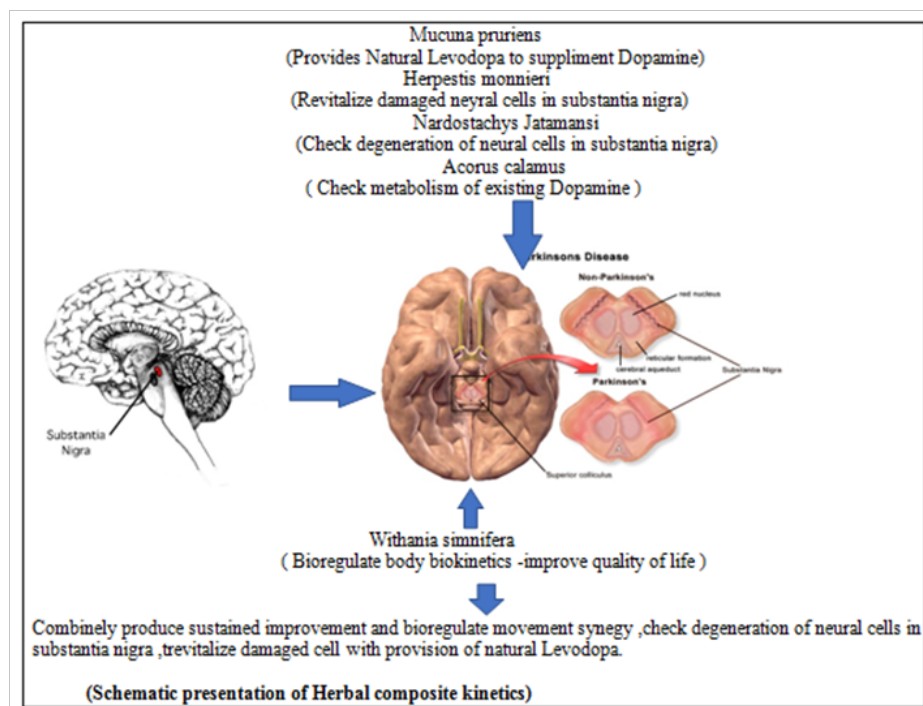
Hence combinely produce sustained improvement and bioregulate movement synergy, check degeneration of neural cells in substantia nigra, trevitalize damaged cell with provision of natural Levodopa (Figure 7).<sup>18-33</sup>



**Figure 6** Showing hand writing changes.

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			Conventional therapy	
A1			A2	
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	-	-	02	
Decreased Hb	-	-	02	

**Figure 7** Outcome of the study.



**Figure 8** Shows Herbal composite bio-kinetics.

## Conclusion

Herbal composite constituting equal parts of *Mucuna pruriens*, *Herpestis monnieri*, *Acorus calamus*, *Nardostachys jatamansi* and *Withanis 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.

## Acknowledgments

None.

## Conflict of interest

The authors declare that there is no conflict of interest.



## Funding

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