



## ROLE OF MATRABASTI AND KAPIKACCHU BEEJA (*MUCUNA PRURIENS* SEED) POWDER IN KAMPAVATA (PARKINSON'S DISEASE)

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### ABSTRACT

Kampavata resembles Parkinson's disease having degenerative pathology in Substantia nigra (a part of brain) and usually affects after the age of 50 years. In spite of advancements in the field of medicine, treatment of Parkinson's disease remained highly symptomatic. No curative treatment is available. This instills a need for ayurvedic management of Kampavata (Parkinson's disease). For the same reason this study was undertaken to evaluate the effect of Mahamasha oil Matra basti (Enema) (MMOB) and Kapikacchu beeja (*Mucuna pruriens* seed) powder (MPSP) in Kampavata (Parkinson's disease). Seventeen patients of Kampavata (Parkinson's disease) were selected incidentally and administered Sarvanga abhyanga (Body massage) with Ksheerabla oil and Bhashpa sweda (Steam) followed by Mahamasha oil Matrabasti (Enema) 70 ml every day for nine days. Kapikacchu beeja (*Mucuna pruriens* seeds) powder - 6gm twice daily was given for 48 days starting from the first day of Matrabasti (Enema). After completion of the treatment 10 patients got marked relief, 6 patients got moderate relief and 1 patient got mild relief. The parameters tremor, rigidity, bradykinesia and facial expression showed statistically significant results ('P' value < 0.05), whereas depression showed highly significant result ('P' value < 0.001). The remaining parameters gait, posture, walking and dressing showed non-significant results. The measures selected for the study were found to be more beneficial in the initial stage of the disease, where the chronicity was less than or equal to one year. The therapy had no effect on the stooped posture.

**Keywords:** Kampavata, Parkinson's disease, Mahamasha taila, Matrabasti, Kapikacchu beeja choorna

### INTRODUCTION

Kampavata (Parkinson's disease) is one of the rare disorders mentioned under vatavyadhi (Neurological disorders), which is discussed only in few ayurvedic literatures. Symptoms of Kampavata such as Karapada tale kampa (tremors in hands and legs), Dehabhramana (postural instability), Matiksheena (dementia) and Nidrabhanga (Insomnia)<sup>1</sup> simulate to that of Parkinson's disease.

Parkinson's disease is increasing in its frequency with a worldwide incidence of 1-2 persons per 1000 population and becoming a major cause of disability in the aging society.<sup>2</sup>

No satisfactory treatment is seen in contemporary system of medicine for Parkinson's disease. The conventional treatment includes Levodopa preparations, Anticholinergic drugs and Surgery etc. which give more or less temporary relief and are expensive with adverse effects. This instills a need for Ayurvedic management of Kampavata (Parkinson's disease).

Matrabasti (Enema with medicated oil) is indicated in Vatavyadhis (Neurological disorders). MMOB is indicated in Shirokampa and Bahukampa (Tremors in head and upper limb).<sup>3</sup> Kapikacchu Beeja (*Mucuna pruriens* seeds - which contain levodopa) is indicated in Vatavyadhi (Neurological disorders).<sup>4</sup>

### MATERIAL AND METHODS

#### Source of data

A series of 17 patients diagnosed as Kampavata (Parkinson's disease) were selected incidentally from outpatient department, inpatient department, special camps conducted in Government Ayurveda Medical

college and Hospital, Mysore and from Neurology outpatient department, Krishna Rajendra Hospital, Mysore.

Institutional Ethical committee meeting was held on 17/03/2004 at Govt Ayurvedic Medical College, Mysore, Karnataka and permission was granted to conduct the clinical trial.

#### Inclusion Criteria

- Patients exhibiting the features of Kampavata (Parkinson's disease)
- Patients of either sex
- Both freshly detected and already treated cases were included

#### Exclusion criteria

Patients with other systemic disorders and with other complications which interfere with the treatment were excluded

#### Diagnostic criteria

Diagnosis was made, based on clinical symptoms of Kampavata (Parkinson's disease). Clinical symptoms considered were.

- Tremor – Kampa
- Rigidity – Stambha
- Bradykinesia – Chesta sanga
- Gait abnormalities – Gati sanga
- Postural abnormalities – Avanamana

#### Source of Formulations used

- Haritaki powder: prepared from Government central pharmacy, Bangalore.
- Ksheeraba oil: Manufactured by NKCA Pharmacy limited, Mysore.
- Mahamasha oil: Manufactured by NKCA Pharmacy limited, Mysore.

- Kapikacchu (*Mucuna pruriens*) seeds: purchased from Sri Govindraj shetty raw drugs shop, made into fine powder, filtered and then used for the study.

#### Intervention

- Haritaki (*Terminalia chebula*) powder 10-15 gm with lukewarm water at bed time on the day before commencement of treatment for Anulomana.
- Full body massage with Ksheera bala oil followed by 15 minute steam bath before basti every day
- Mahamasha oil Matrabasti (enema) 70 ml every day for 9 days
- *Mucuna pruriens* seeds powder 6 gm twice daily, with lukewarm water after meals for 48 days.

#### Assessment Criteria

To assess the efficacy of the treatment, the symptoms of Kampavata (Parkinson's disease) such as Tremor, Rigidity, Bradykinesia etc were noted carefully before the commencement of treatment (on the initial day), on 9<sup>th</sup> day (after completion of Enema course) and on the 48<sup>th</sup> day (after completion of oral medicine), i.e. before, during and after the treatment. Unified Parkinson Disease Rating Scale (UPDRS)<sup>5</sup> was applied to measure the degree of improvement.

Tremor

T<sub>0</sub> – Absent

T<sub>1</sub> – Slight and infrequent, not bothersome to patient

T<sub>2</sub> – Moderate, bothersome to patient

T<sub>3</sub> – Severe, interferes with many activities

T<sub>4</sub> – Marked, interferes with all activities.

Rigidity

R<sub>0</sub> – Absent

R<sub>1</sub> – Slight or only with activation

R<sub>2</sub> – Mild / Moderate

R<sub>3</sub> – Marked, full range of motion

R<sub>4</sub> – Severe

Bradykinesia

B<sub>0</sub> – None

B<sub>1</sub> – Minimal slowness, could be normal, deliberate

B<sub>2</sub> – Mild slowness and poverty of movement

B<sub>3</sub> – Moderate slowness, poverty or small amplitude

B<sub>4</sub> – Marked slowness, poverty or amplitude.

Gait

G<sub>0</sub> – Normal

G<sub>1</sub> – Walks slowly, may shuffle with short steps, no festination or propulsion.

G<sub>2</sub> – Walks with difficulty, little or no assistance

G<sub>3</sub> – Severe disturbance, frequent assistance

G<sub>4</sub> – Can not walk

Posture

P<sub>0</sub> – Normal erect

P<sub>1</sub> – Slightly stooped, could be normal for older person.

P<sub>2</sub> – Definitely abnormal, moderately stooped, may lean to one side

P<sub>3</sub> – Severely stooped with Kyphosis

P<sub>4</sub> – Marked flexion with extreme abnormality of posture

#### Statistical analysis

The data regarding symptoms of the samples were collected and graded according to Unified Parkinson Disease Rating Scale (UPDRS). The total score of before treatment, during and after completion of the treatment was assessed by using "Chi-Square test".

## RESULTS AND DISCUSSION

### Observation on results of Kampa (tremor), Stambha (rigidity), Chestasanga (bradykinesia), Gatisanga (gait) and Avanamana (posture) (Table 1)

Kampa (tremor) was the main presenting symptom in all the patients. During treatment there was no much improvement in the tremor. The results obtained regarding the parameter tremor showed significance statistically with the 'P' value < 0.001.

Cog wheel type of rigidity was elicited in 15 patients. After completion of the course of Sarvanga Abhyanga (Body massage) with Ksheera bala oil, Sweda (Steam) and Mahamasha oil Matrabasti (Enema) 7 patients completely relieved from rigidity. After completion of Shamanoushadhi (Internal medicine) 10 patients completely relieved from rigidity.

Bradykinesia was observed in all the 17 patients. After completion of the treatment two patients completely relieved from bradykinesia.

Out of 17 patients, 2 patients had severe disturbance of gait, 6 patients with festination and 9 patient had short stepping gait. During treatment no much improvement was seen. After completion of the treatment 1 patient became normal and other patients shifted to lower grading.

There was no improvement in the posture of the patients in the present clinical study.

### Probable mode of action of Matrabasti (Enema)

Water poured at the root of a plant, nourishes the whole tree and puts forth green leaves and delicate sprouts. In the similar way medicines administered through the rectal route reach Nabhi (Umbelical region), Kati (Lowback), Parshva (Flanks), Kukshi (Abdomen), by staying there itself it acts through its veerya (Potency) and even eliminates doshas (toxins) which are present in the Mastishka (Brain).<sup>6</sup>

The rectum has rich blood and lymph supply and drugs can cross the rectal mucosa like other lipid membranes, thus lipid soluble substances are readily absorbed from the rectum. The portion of drug absorbed from the upper rectal mucosa is carried by the superior haemorrhoidal vein into the portal circulation; whereas drug absorbed from the lower rectum enter directly into the systemic circulation via the middle and inferior haemorrhoidal veins.<sup>7</sup>

Thus sneha (oil/ghee) administered through the guda marga (rectal route) during matrabasti (enema) gets absorbed into haemorrhoidal veins. Then there by the veerya (potency) of sneha dravyas (medicated oil/ghee) enter the systemic circulation and may show their action in the mastishka (Brain) and may help in arresting the disease process.

### Mode of action of Kapikacchu beeja (*Mucuna pruriens*)

*Mucuna pruriens* seeds have been reported to be a good source of 3, 4 – dihydroxyphenylalanine (L-dopa) with 1.5 to 6%. The alcoholic extract of *Mucuna pruriens* seeds were reported to have four alkaloids viz., mucunine, mucunadine, prurienine and prurieninine. The seed extract showed a potent antiparkinsonian effect in mice.<sup>8</sup>

**Table 1: Observation on results of Kampa (tremor), Stambha (rigidity), Chestasanga (bradykinesia), Gatisanga (gait) and Avanamana (posture)**

<b>Tremor</b>	<b>T<sub>0</sub></b>	<b>T<sub>1</sub></b>	<b>T<sub>2</sub></b>	<b>T<sub>3</sub></b>	<b>T<sub>4</sub></b>	<b>Total</b>
Before Treatment	-	-	10	6	1	17
During Treatment	-	1	9	6	1	17
After Treatment	-	10	4	2	1	17
						'P' value < 0.001
<b>Rigidity</b>	<b>R<sub>0</sub></b>	<b>R<sub>1</sub></b>	<b>R<sub>2</sub></b>	<b>R<sub>3</sub></b>	<b>R<sub>4</sub></b>	<b>Total</b>
Before Treatment	2	7	5	3	-	17
During Treatment	9	5	2	1	-	17
After Treatment	12	3	2	-	-	17
						'P' value < 0.030
<b>Bradykinesia</b>	<b>B<sub>0</sub></b>	<b>B<sub>1</sub></b>	<b>B<sub>2</sub></b>	<b>B<sub>3</sub></b>	<b>B<sub>4</sub></b>	<b>Total</b>
Before Treatment	-	2	10	3	2	17
During Treatment	-	6	6	3	2	17
After Treatment	2	10	3	2	-	17
						'P' value < 0.050
<b>Gait</b>	<b>G<sub>0</sub></b>	<b>G<sub>1</sub></b>	<b>G<sub>2</sub></b>	<b>G<sub>3</sub></b>	<b>G<sub>4</sub></b>	<b>Total</b>
Before Treatment	-	9	6	2	-	17
During Treatment	-	10	6	1	-	17
After Treatment						
	1	14	1	1	-	17
						'P' value < 0.267
<b>Posture</b>	<b>P<sub>0</sub></b>	<b>P<sub>1</sub></b>	<b>P<sub>2</sub></b>	<b>P<sub>3</sub></b>	<b>P<sub>4</sub></b>	<b>Total</b>
Before Treatment	1	10	6	-	-	17
During Treatment	1	10	6	-	-	17
After Treatment	1	10	6	-	-	17
						'P' value < 1.000

Observation on results of Kampa (tremor), Stambha (rigidity), Cheshtasanga (bradykinesia), Gatisanga (gait) and Avanamana (posture)

**Table 2: Chronicity**

<b>Chronicity</b>	<b>No of Patients</b>
Less than 1 year	6
1-2 years	7
2-3 years	2
3-4 years	1
4-5 years	1
Total	17

More number of patients were observed to be having chronicity between 1-2 years

## CONCLUSION

The measures selected for the study were found to be more beneficial in the initial stage of the disease, where the chronicity was less than or equal to one year.

The therapy had no effect on the stooped posture. In this study ten patients got marked relief, six patients got moderate relief and one patient got mild relief.

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