



Case Study

EFFECT OF MUSTHADI RAJAYAPANA VASTI IN PARKINSON'S DISEASE

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ABSTRACT

Parkinson's disease is a progressive neurodegenerative disorder, affecting the older adult. It is a syndrome consisting of classical triad of resting tremor, bradykinesia and rigidity. The triad does not include the equally important gait and postural instability problem which also constitute syndrome. *Lakshanas of Vata prakopa* can be seen in Parkinson's Disease. Madhavanidana, Vangasena, Sarngadhara samhita, Basavatrajiya has quoted the pathology *Kampavata*- a disease condition that explains Parkinson's disease in similar way. In short Parkinson's disease can be compared to *Kampavata*. *Vasti is Paramoushadha of Vata*. To be specific, *Musthadi rajayapana vasti is Brimhana and Vatahara* in nature. So it is the best choice for a *Vatavikara* like Parkinson's disease. *Brimhana* type of *vasti* plays an important role, hence *Rajayapana vasti*. The study is pre-post study. participants registered in IPD and OPD of Govt. Ayurveda Panchakarma Hospital, Poojappura satisfying inclusion criteria were selected. After collecting baseline data, detailed history and examination were done using clinical case proforma. 15 participants were selected for the study. *Musthadi rajayapana vasti* was done continuously for 7 days. Assessment of efficacy was done before *Vasti*, after *Vasti* on 8th day and after follow up on 14th day by Unified Parkinson's Disease Rating Scale. Quantitative and qualitative assessment of *Vasti dravya* was also done. Data were analysed according to 'Wilcoxon signed rank test'. Based on statistical analysis *Musthadi rajayapana vasti* was found to be significant in reducing symptoms. *Musthadi rajayapana vasti* is effective in reducing severity of symptoms of Parkinson's disease.

INTRODUCTION

Parkinson's disease is found worldwide and is one of the extrapyramidal disorder seen in clinical practice^[1]. It is characterized by the cardinal features of Rest tremor, Bradykinesia, Rigidity and Postural instability and a variety of other motor and non-motor symptoms.

The incidence and prevalence of PD increases with advancing age, being present in 1 % of people over the age of 65 years^[2].

In Caraka samhita, *Vepathu* has been described as one among the 80 types of *Vataja nanatmaja vyadhi*^[3]. The term *Kampavata* was explained with most of the clinical features similar to that of PD. The main clinical feature of *Kampavata* is *Kampa*. Few more features of *Kampavata* can be compared with that of PD *Karapadathale kampa* (tremor of feet and hand), *Dehabhramana* (postural instability)^[4]. PD can accompanied variety of non-motor symptoms, these non-motor features can also be related with symptoms of *Kampavata* in Basavarajeeyam like *Nidrabhanga*, *Matiksheena*^[4].

Rationale of the Study

Vasti is important *Sodhana* type of treatment intended to alleviate *Vata dosha* and plays nourishing action on the nervous system. In this particular disease where the disease is mostly due to *Dhathukshayaja Vatavyadhi*^[5]. *Brimhana* type of *Vasti*, plays an important role hence *Rajayapana vasti*. Extensive description regarding *Yapanavasti* is found in Charaka siddhisthana 12th chapter^[6]. *Yapana vasti* is that form

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of *Vasti* which can be given to *Atura* and *Swastha* as well as without much complication. Especially in this disease *Rajayapana vasti* is given which has the

properties *Mamsa balajanana*, *Shoolahara*, *Janu uru jangha graham*, *Tridosahara*, *Sadyobalajanana* and *Rasayana*^[7].

Drug Review

Vasti contents	Quantity
<i>Saindhava</i>	10gm
<i>Madhu</i>	120 ml
<i>Mahamasha tailam</i>	120 ml
<i>Brihath chagaladi ghrita</i>	120 ml
<i>Sathahwadi kalka</i>	30 g
<i>Musthadi ksheera kashaya</i>	300 ml
<i>Ajamamsa rasa</i>	100 ml

Methodology

Contents	Properties
<i>Saindhava</i>	<i>Madhura rasa, Sukshma, Laghu, Tikshna, Tridoshasamaka</i>
<i>Madhu</i>	<i>Madhurarasa, Guru ruksha guna, Kaphapittasamaka</i>
<i>Mahamasha tailam</i>	Balanced quantity of <i>Vatahara, Kaphahara, Vayasthapana dravya, Guru, Brimhana</i> in nature, <i>Rasyana</i> property/ <i>Masha</i>
<i>Brihath chagaladi ghrita</i>	<i>Brimhana, Balya, Rasayana</i> , specifically indicated for <i>Hasthakampa, Shirakampa</i>
<i>Sathahwadi kalka</i>	<i>Sathahwa, Madhuka, Kutajaphala, Priyangu</i>
<i>Musthadi ksheera kashaya</i>	<i>Musta, Aragvadha, Bala</i> etc 16 drugs, <i>Srothosodhana</i>
<i>Ajamamsa rasa</i>	<i>Guru, Snigdha, Brimhana</i>

Aim

- To find out the effect of *Musthadi rajayapanavasti* in Parkinson's disease among participants of age group 30 to 70 years

Objectives

- To find out the changes in tremor, rigidity, bradykinesia, postural instability and non-motor aspects of experiences in daily living measured by Unified Parkinson's Disease Rating Scale after administering *Musthadi rajayapanavasti* for 7 days

Study design

- Interventional study:** pre-post tests without control group

Study setting

- IPD of Dept. of Panchakarma, Govt. Ayurveda Panchakarma Hospital, Poojappura, Thiruvananthapuram.

Study population

- Participants satisfying the inclusion criteria were selected, from IPD of Panchakarma, Govt. Panchakarma hospital,

Selection criteria

1. Inclusion criteria

- Participants with age between 30 and 70 years diagnosed with parkinson's Disease
- Those who are fit for *Vasti*
- Those who are not willing to take syndopa

2. Exclusion criteria

- Those who are suffering from severe systemic illness
- Those who are wheel chair bound/bed ridden unless assisted.

Sampling method

All the consecutive cases satisfying inclusion criteria coming to the IPD of Panchakarma department were recruited till the sample size was attained

Sample size : 15

Study period : 7 days

Follow up : 14 days

Procedure

Participants satisfying the inclusion criteria were selected, from IPD of Panchakarma, Govt. Panchakarma hospital.

Poorvakarma : *Sneha sweda (Bahya)*

Pradhana karma : Administration of *Vasthi dravya*

Duration of procedure : 7 days

Time of administration : 10.30 am

Route of administration : Anorectal route

Dose : 800ml

Assessment criteria

- Tremor
- Rigidity
- Bradykinesia

- Postural instability
- Non-motor symptoms like constipation, sleep, fatigue

Outcome variable

Changes in tremor, rigidity, postural instability, bradykinesia and non-motor aspects of experiences in daily living by using Unified Parkinson's Disease Rating scale

Study tool

- Case proforma

- UPDRS scale

OBSERVATION AND RESULTS

Age

In this study 66.7% were in between 61-70 age group, 33.3% were belonged to the age group of 51-60.

Gender

In this study 66.7% were males and 33.3% were females.

Tremor at rest

Paired comparison	Wilcoxon Signed Rank Test	
	Z	P
BT vs AT	3.162	0.002
BT vs AF	2.85	0.004

There was a significant change in rest tremor in right upper extremity from before treatment to after treatment ($p < 0.05$). Change from before treatment to after follow up was also found to be statistically significant.

Paired comparison	Wilcoxon Signed Rank Test	
	Z	P
BT vs AT	3.276	0.001
BT vs AF	3.228	0.001

From the table change in rest tremor between before treatment and after treatment was statistically significant. Also change between before treatment and after follow up was also found to be statistically significant.

Bradykinesia

Bradykinesia	Paired comparison	Z	P
Finger tap test	BT vs AT	3	0.003
	BT vs AF	3.153	0.002
Hand movements	BT vs AT	3	0.003
	BT vs AF	3.017	0.003
Pronation -Supination	BT vs AT	3.464	0.001
	BT vs AF	3.145	0.002
Body bradykinesia	BT vs AT	3.464	0.001
	BT vs AF	3.145	0.001
Leg agility test	BT vs AT	3.464	0.001
	BT vs AF	3.127	0.001
Arising from chair	BT vs AT	3.606	0.000
	BT vs AF	3.272	0.001

Rigidity

Rigidity	Paired comparison	Z	P
Neck rigidity	BT vs AT	0.000	1
	BT vs AF	0.000	1
Right upper extremity	BT vs AT	3.464	0.001
	BT vs AF	3.372	0.001
Left upper extremity	BT vs AT	3.742	0.000
	BT vs AF	3.272	0.001
Right lower extremity	BT vs AT	3.464	0.001
	BT vs AF	3.276	0.001
Left lower extremity	BT vs AT	3.317	0.001
	BT vs AF	3,5	0

Sleep problem

Paired comparison	Z	P
BT vs AT	3.162	0.002
BT vs AF	2.919	0.004

Constipation

Paired comparison	Z	P
BT vs AT	3.162	0.002
BT vs AF	2.739	0.006

Fatigue

Paired comparison	Z	P
BT vs AT	3.491	0.000
BT vs AF	3.097	0.002

DISCUSSION

Tremor on right and left upper extremity was statistically significant after treatment and after follow up where p value < 0.05. There was no participants having tremor on head and lower limb.

In the present study *Kampa* is the cardinal symptom of *Vatakopa* and also due to *Rasakshaya*. *Vatakopa* is mainly due to *Dhathukshaya* in the geriatric age group. *Musthadi rajayapana vasti* normalizes this condition by its *Brimhana*, *Balya* and *Vatanulomana* property.

Rigidity

Rigidity was statistically significant in both extremities and not significant in neck after treatment. In left upper extremity, right and left lower extremity not significant after follow up. It means the result obtained after treatment is maintained throughout the follow up.

Sthamba occur due to *Kapha avarana* and *Yapana vasti* is mentioned as ideal treatment of *Avarana*. *Sthamba* is defined as the *Sthabdhatā/Nischaleekarana* which is the symptom *Vatakopa* and also seen in *Pittakshaya*. When *Pitta* is in *Kshina*, *Ashayapakarsha* of *samakapha* with *Kupita vata* occur, this causes *Sthamba*. Drugs like *Rasna*, *Punarnava* etc causes *Vatakaphahara* property and *Ushnavirya*, thus helps in reducing *Sthamba*.

Bradykinesia

Bradykinesia was assessed through finger tap test, hand movements, pronation-supination, leg agility, arising from chair and body bradykinesia. All these were found to be statistically significant after treatment and were also found to be statistically significant after follow up except body bradykinesia and leg agility test.

Cheshtahani/Chestasthamba is the one symptom which occurred in initial stages of all participants. *Vyana vāyu* controls all the bodily activities when *Vyana* is subjected to *Avarana*, it fails to perform its functions like flexion, extension thereby slow down bodily activities. Due to the dual effect of

Musthadi rajayapana vasti it acted upon both *Vatadosha* and *Kaphadosha* by removing the *Avarana* pathology in disease, thereby reduces the symptom.

Postural instability

There was no significant change in postural instability after treatment. Postural instability is the final core in the motor phase of Parkinson's Disease which means seen in later stages of disease. In this study postural stability is seen in 2 participants. In those cases there was no considerable change in Postural instability. So it was statistically insignificant. According to classics symptoms having more chronicity are *Yapya* in nature. So postural instability is the symptom which can be maintained due to treatment.

Constipation

There was statistically significant change in constipation after treatment

Constipation is the symptom which developed in the earliest stage of disease which means in the pre-symptomatic stage of disease. In particular, occurs frequently because Parkinson's disease may slow the automatic movement of the digestive system.

Constipation can be termed as *Vibandha* in Ayurveda. *Apana vāyu* controls the *Mala*, *Muthra pravrutti*. So any *Dushti* in *apana vāyu* causes *Vibandha*, *Musthadi rajayapana vasti* corrects *Apana vāyu* and thereby reduces *Vibandha*.

Sleep

Change in sleep was statistically significant. Sleep problems are commonly experienced symptom in Patients of Parkinson's disease, either Primary insomnia or secondary insomnia.

Nidranasa produces due to *Vataprakopa* and *Kaphakshaya*, this decreased and dried *Kapha* causes *Srothorodha*. Due to *Srothosodhana* and *Brimhana* effect of *Musthadi rajayapana vasti* normalises *Kapaha* and *Vata*.

Fatigue

Fatigue is a complex symptom of Parkinson's disease which is significantly associated with

depression and sleep disorder. In this study there was a statistically significant change in fatigue.

Fatigue can be reduced by the *Sadyobalajanana* property of *Musthadi rajayapana vasti*.

Discussion on probable mode of action

Understanding the parkinson's disease in terms of Ayurveda can be done under *Vatavyadhi*, caused due to both *Avarana* and *Dhathukshaya janya*. Based on signs and symptoms, it can be correlated with *Kampavata*. Incidence of parkinson's disease is maximum in geriatric age group and *Vataprakopa* in this age group is mostly seen due to *Dhathukshayaja samprapti*. So *Brimhana*, *Balya* and *Rasayana* type of treatment can be adopted. *Musthadirajayapana vasti* is the apt procedure for Parkinson's disease.

Ingredients of *Musthadi rajayapana vasti* are honey, *Saindava*, *Mahamasha thaila*, *Brihathchagaladi ghrita*, *Sathahwadi kalka*, *Musthadi ksheera kashaya* and *Ajamamsa rasa*. This *Vasti* is mentioned in Charaka samhita *siddhi sthana* in *Uttara vasti siddhi*.

Mahamashathaila mentioned in Chakradatta *vatavyadhi adhikarana* This *taila* is appreciated for its efficacy in alleviating all types ailments caused by aggravation of *Vatadosa*. The *Jeevaneeya gana* present in this *Yoga* has properties like *Vatapittahara*, *Balya* etc.

The drugs like *Masha*, *Atmagupta Dasamoola*, *Aswagandha*, *Eranda* has got *Balya*, *Snigdha*, *Brimhana* properties. Moreover *Atmagupta*, *Eranda* has been considered as *Rasayana dravyas*.

Brihath chagaldi ghrita is mentioned in Bhaishajya ratnavali *Vatavyadhi adhikarana*, indicated in *Sarva vata vikara* and specially indicated in *Hastakampa*, *Shirakampa* etc which are the features of Parkinson's Disease. This *Ghrita* efficacious as *Rasayana*, *Agnidipana* and *Balya*. so this helps in neurodegenerative disorders like Parkinson's Disease for their good health and *Dirgayu*.

Ajamamsa rasa in this *Vasti* gives more *Vatahara* and also *Brimhana* in this disease condition.

CONCLUSION

Musthadi rajayapana vasti is effective in reducing severity of tremor, rigidity, bradykinesia and also effective in reducing non-motor symptoms like sleep, constipation and fatigue

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