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A COMPARATIVE CLINICAL STUDY TO ASSESS THE EFFECT OF MATRA BASTI WITH MASHA TAILA AND KSHEERABALA TAILA 7 AAVARTHITA IN MANNAGEMENT OF KAMPAVATA WITH SPECIAL REFRENCE TO PARKINSON'S DISEASE

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ABSTRACT

Kampavata is one of the vatavyadhi, Basavarajeeyam gives a brief description of this with symptoms such as Kara pada tala kampa, Deha brahmana, Nidrabhanga, Matiksheena, etc. Kampavata can be correlated to Parkinson's disease. It is a neurodegenerative disease. It is a progressive loss of structure or functions of neurons including the death of neurons ranging from molecular to the systemic level. Tremor, rigidity, and bradykinesia are the main symptoms of Parkinson's disease; these symptoms are similar to Kampa, Sanga, and Gatisanga. These are mainly because of Vata. Here Vata Dosha is responsible for the disease which is originating either in Sakha, Koshta, Marma, Asthi, or Sandhi. A mixture of Saindhava and Madhu generates the hydroelectric energies in nerve cells for communication. Due to the Sukshma property of Sneha, it helps the drug to reach the microcellular level. The medicinal value of Kalka and Kwatha helps with curative, purification, and preventive

aspects. Basti acts as a regenerative process. Its Veerya helps to disrupt the pathogenic process and carries out the morbid matter towards Pakvashaya for elimination, there after by absorption it starts its regenerative process.

The clinical trial was undertaken to compare the efficacy of *Matra Basti* with *Masha Taila* and *Ksheerabala Taila* 7 aavarthita in the management of *Kampavata* (Parkinson's Disease).

30 patients having classical symptom of *Kampavata* of either sex were selected and divided into two groups; consisting of 15 patients in each group.

In Group-A *Matra Basti* was administered with *Masha Taila* in dose of 60ml was inserted through rectum for 9 consecutive days. In Group-B *Matra Basti* was administered with *Ksheerabalataila 7 aavarthita* in dose of 60ml was inserted through rectum for 9 consecutive days.

The clinical assessment was done using Modified Universal Parkinson's Disease Rating Scale. All symptoms were given scoring depending upon their severity from 0 to 4. The results were subjected to Wilcoxon signed rank test and Mann Whitney U Test Rank it suggests no significant difference after the treatment. Overall the results are not much better in both groups. So far, the experience with treatment has been good and the response is up to 25% in all the patients of both groups.

Key words: *Kampavata, Parkinson's Disease, Matra Basti, Ksheerabala Taila, Masha Taila*

INTRODUCTION

Kampavata is one of the vatavyadhi [1], Basavarajeeyam gives a brief description of this with symptoms such as Kara pada tala kampa, Deha brahmana, Nidrabhanga, Matiksheena, etc. Kampavata can be correlated to Parkinson's disease. It is a neurodegenerative disease. It is a progressive loss of structure or functions of neurons including the death of neurons ranging from molecular to the systemic level. Tremor, rigidity, and bradykinesia are the main symptoms of Parkinson's disease[2]; these symptoms are similar to Kampa, Sanga, and Gatisanga. These are mainly because of Vata. Here Vata Dosha is responsible for the disease which is originating either in Sakha, Koshta, Marma, Asthi, or Sandhi [3]. A mixture of Saindhava and Madhu generates the hydroelectric energies in nerve cells for communication. Due to the Sukshma property of Sneha, it helps the drug to reach the microcellular level. The medicinal value of Kalka and Kwatha helps with curative, purification, and preventive aspects. Basti acts as a regenerative process. Its Veerya helps to disrupt the pathogenic process and carries out the morbid matter towards Pakvashaya for elimination, there after by absorption it starts its regenerative process.

It is estimated that 6.3 million people worldwide suffer from Parkinson's. The World Health Organization gives an 'estimated crude prevalence' (the total number of existent cases each year, old and new) of 160 per 100, 000, and an estimated incidence (the number of new cases each year) of 16-19 per 100, 000.

After Alzheimer's, it is the second most prevalent neurodegenerative disorder, affecting 1% of those over 60, and 4% of those over 80. Neurodegenerative disorders are set to overtake cancer to become the second most common cause of death by 2040.The financial costs of Parkinson's, primarily in terms of drugs and care, are huge. The global cost of drug treatment alone is around US. $ 1, 100 million/year [4].

OBJECTIVES

1. To evaluate the efficacy of matra basti with Masha taila [5] in Kampavata.
2. To evaluate the efficacy of matra basti with Ksheerabala taila 7 avarthita [6] in Kampavata.
3. To compare the effect of matra basti with Masha taila and Ksheerabala taila 7 avarthita in Kampavata.

MATERIALS AND METHODS

Source of Data

Minimum 30 patients of *Kampavata* were selected randomly from the OPD, IPD and by conducting the special camps in Department of Post Graduate Studies in Panchakarma, Bhagawan Mahaveer Jain Ayurvedic Medical College, Hospital & PG Centre Gajendragad.

Study Design:

A comparative clinical study with pre-test and post- test design.

All the formulations were prepared in the pharmacy attached to the college.

Methods of Collection of Data

Patients of either sex were selected randomly based on the symptoms of *Kampavata*, the screened patients were randomly divided into two groups group A and group B with 15 patients in each group.

Inclusion Criteria

1. Patients with signs and symptoms of Kampavata explained in classical text
2. Patients of either sex with presenting classical symptoms of Parkinson's diseases and Patient was diagnosed as case of Parkinson's Disease
3. Matra bastiarha patients
4. Patients between age group of 40 to 75 years.

Exclusion Criteria

1. Patients suffering from confirmative other major systemic diseases, uncontrolled diabetic mellitus and uncontrolled high blood pressure.
2. Patients with the severe progression rate of Parkinson's diseases.
3. Marta bastianarha patients
4. Patients below age of 40 years and above age of 75 years

Grouping

Groups	**No of Patients**	**Trail Drugs**	**Duration of The Study**
Group A	15	Matrabasti with Masha taila	9 days
Group B	15	Matrabasti with Ksheerabalataila 7 aavarthita	9 days

INTERVENTIONS:

Duration:

Duration of procedure - 9 days.

Assessment -

On 0^{th} day (before treatment),

On 9^{th} day (soon after treatment)

On 24^{th} (After 15 days of treatment)

Follow-up - After 15 days of treatment

	GROUP A	GROUP B
Purva Karma	Sarvangaabhyanga with ksheerabala taila and bhashpa sweda	Sarvangaabhyanga with ksheerabala taila and bhashpa sweda
Pradhana Karma	Matra basti was performed with Masha taila in dose of 60ml was inserted through rectum.	Matra basti was performed with Ksheerabalataila 7 aavarthita in dose of 60ml was inserted through rectum.
Paschat Karma	Rest in supine position	Rest in supine position
Time of Administration	Morning soon after Breakfast	Morning soon after Breakfast
Quantity (Matra)	60ml	60ml
Duration of Procedure	9 consecutive days.	9 consecutive days.

Assessment Criteria

Assessment of the condition was done based on the detailed proforma adopting standard methods of scoring for subjective parameter and objective parameters.

- Pre test assessment- Before the commencement of treatment (0 day).
- Post test assessment- After the completion of treatment (9^{th} and 24^{th} day).

PARAMETERS OF THE STUDY:

Subjective Parameters:

Assessment Scoring System

Grade	Kampa (Tremor)	Gatisanga (Bradykinesia)	Vakavikriti (Speech disorder)	Stambha (Rigidity)
0	No tremors	Can walk brisk without aid.	Normal speech.	No rigidity
1	Unilateral slight tremor present at rest, decreased byaction, increases by emotions and stress and disappears during night	Can walk without assistance slowly but withshuffling gait.	Variable tone of voice, slight slurring of speech.	Cog-wheel rigidity feebly present and on continuous examination vanishes
2	Bilateral tremor	Can walk without assistance slowly with shuffling with retropulsion/pr opulsi on.	No echoing, dysarthria present but speech is clearly understandable , monotony present.	Rigidity demonstrablein one of major joints.
3	Tremors not violent but presentin less number of organs mentioned below	Can walk slowly but needsubstantial help, shuffling with retropulsion, propulsion with lack of associated movements.	Monotonous voice, split consonance but understandable , speaks freely with examiner.	Patients sits properly but cog-wheel rigidity demonstrablein all major joints, slow eye ball movements without staring appearance.
4	Bilateral violent tremors along with tremors in tongue and/or in eyelids, lips and not suppressed or diminished by willed movement	Unable to raise from bed and to walk without assistance.	Incomprehensive words, monotonous voice, echoing, speaks only on insistence of examiner.	Marked rigidity in major jointsof limbs, patient maintains abnormal sitting postures, stared eyes.

OBJECTIVE PARAMETERS:

https://neurotoolkit.com/updrs/ MDS-UPDRS calculation link

MDS-Unified Parkinson's Disease Rating Scale (MDS-UPDRS)

Part 1 - intellectual function, mood, behavior

Part 2 – activities of daily living

Part 3 – motor examination

Part 4 – motor complications

RESULTS

Table 1 . Effect on Part 1 between the group

Assessment Observation Recorded	Descriptive Statistics			Mann Whitney U Test Rank				Test Statistic				
	Groups	Mean	SD	N	MR	SR	Md	U	W	Z	p	r
BT	Group A	23.66	7.23	15	14.43	216.5	26	96.5	216.5	- 0.667	0.505	0.13
	Group B	25.20	5.34	15	16.58	248.5	25.2					
AT	Group A	18.40	5.06	15	12.73	191	20	71	191	- 1.732	0.083	0.02
	Group B	21.86	5.01	15	18.27	274	22					
AF	Group A	13.40	3.71	15	11.03	165.5	15	45.5	165	- 2.801	0.005	0.001
	Group B	19.06	5.09	15	19.97	299.5	20					

Table 2 . Effect on Part 2 between the group

Assessment Observation Recorded	Descriptive Statistics			Mann Whitney U Test Rank				Test Statistic				
	Groups	Mean	SD	N	MR	SR	Md	U	W	Z	p	r
BT	**Group A**	34.46	5.70	15	18.53	278	35	67	187	- 1.899	0.58	0.49
	Group B	30.80	5.83	15	13.27	187	31					
AT	**Group A**	28.13	4.12	15	15.97	239.5	28	105.5	225.5	- 0.293	0.770	0.07
	Group B	27.20	5.91	15	15.03	225.5	27					
AF	**Group A**	20.33	2.96	15	11.73	176	20	56	176	- 2.359	0.018	0.60
	Group B	24.33	5.80	15	19.27	289	24					

Table 3 . Effect on Part 3 between the group

Assessment Observation Recorded	Descriptive Statistics			Mann Whitney U Test Rank				Test Statistic				
	Groups	Mean	SD	N	MR	SR	Md	U	W	Z	p	r
BT	Group A	54.33	8.43	15	19.53	293	56	52	172	-2.524	0.012	0.65
	Group B	45	9.30	15	11.47	172	45					
AT	Group A	44.26	7.85	15	17.57	263.5	45	81.5	201.5	-1.289	0.197	0.33
	Group B	40.13	9.56	15	13.43	201.5	40					
AF	Group A	32.80	6.23	15	12.70	190.5	32	70.5	190.5	-1.751	0.080	0.45
	Group B	26.6	8.99	15	18.30	274.5	38					

Table 4. Effect on Part 4 between the group

Assessment Observation Recorded	Descriptive Statistics			Mann Whitney U Test Rank				Test Statistic				
	Groups	Mean	SD	N	MR	SR	Md	U	W	Z	p	r
BT	Group A	4.73	0.96	15	14.5	217.5	5	97.5	217.5	-0.654	0.513	0.16
	Group B	4.93	0.88	15	16.5	247.5	5					
AT	Group A	4.40	1.12	15	14.3	214.5	4	94.5	214.5	-0.798	0.425	0.20
	Group B	4.66	0.97	15	16.7	250.5	4					
AF	Group A	3.20	0.67	15	11.7	176	3	56	176	-2.516	0.012	0.64
	Group B	3.93	0.88	15	19.2	289	4					

Table 5: Effect on Kampa between the group

Assessment	Group	Mean	SD	SEM	Median	Unpaired t	
						T value	P value
BT	GRP1	3.3	0.61	0.15	3	0.00	0.292
	GRP 2	3.3	0.48	0.12	3		
AT	GRP1	2.4	0.63	0.16	3	-1.387	0.769
	GRP 2	2.8	0.67	0.17	3		
AF	GRP1	1.6	0.63	0.16	2	-3.822	0.265
	GRP 2	2.4	0.50	0.13	2		

Table 6: Effect on Gatisanga between the group

Assessment	Group	Mean	SD	SEM	Median	Unpaired t	
						T value	P value
BT	GRP1	3.46	0.51	0.133	3	1.969	0.295
	GRP 2	3.06	0.59	0.153	3		
AT	GRP1	2.46	0.51	0.133	2	-0.714	0.526
	GRP 2	2.60	0.50	0.130	3		
AF	GRP1	1.86	0.51	0.133	2	-1.256	0.434
	GRP 2	2.13	0.63	0.165	2		

Table 7: Effect on Vak Vikruti between the group

Assessment	Group	Mean	SD	SEM	Median	Unpaired t	
						T value	P value
BT	GRP1	2.66	0.48	0.12	3	1.29	0.148
	GRP 2	2.40	0.63	0.16	2		
AT	GRP1	2.26	0.45	0.11	2	-0.66	0.058
	GRP 2	2.40	0.63	0.16	2		
AF	GRP1	1.46	0.51	0.13	1	-2.85	0.490
	GRP 2	2.13	0.74	0.19	2		

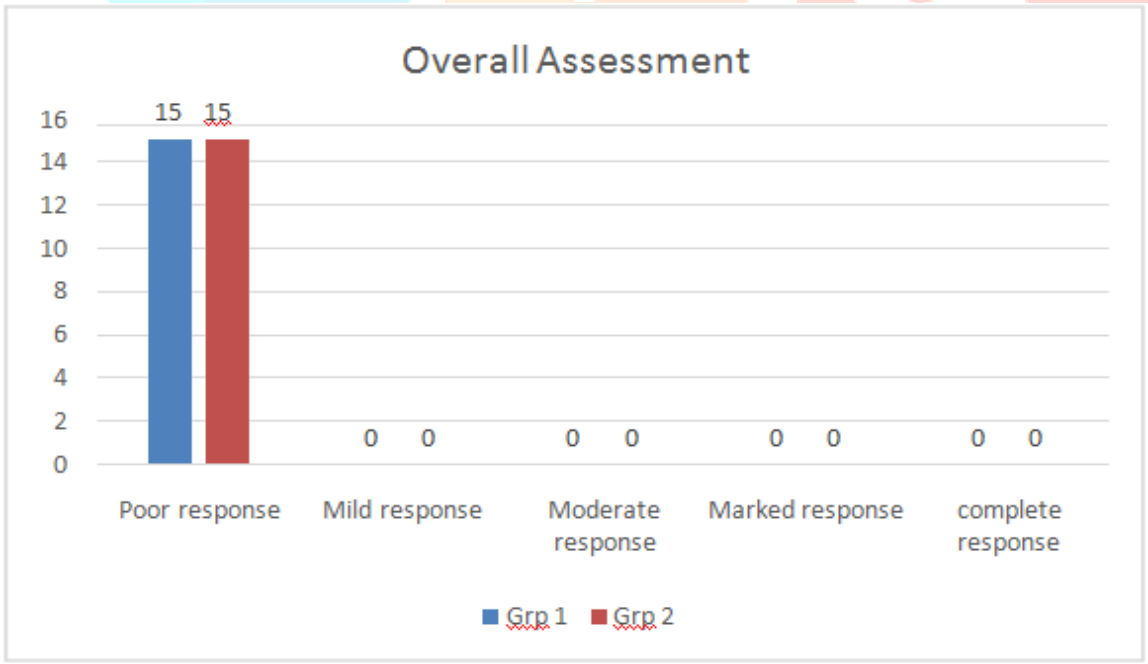
Table 8: Effect on Stambha between the group

Assessment	Group	Mean	SD	SEM	Median	Unpaired t	
						T value	P value
BT	GRP1	2.4	0.63	0.165	2	0.887	0.509
	GRP 2	2.2	0.59	0.153	2		
AT	GRP1	2.2	0.45	0.118	2	0.357	0.737
	GRP 2	2.2	0.56	0.144	2		
AF	GRP1	1.5	0.51	0.133	2	-2.683	<0.001
	GRP 2	1.9	0.25	0.066	2		

Table 9: Overall assessment

Response Grouping	Response	Group A		Group B	
		No of Subjects	%	No of Subjects	%
0%-25%	Poor response	15	100%	15	100%
25%-50%	Mild response	0	0%	0	0%
50%-75%	Moderate response	0	0%	0	0%
75%-99%	Marked response	0	0%	0	0%
>99%	Complete response	0	0%	0	0%
Total		15	100%	15	100%

Graph: Overall effect of the Therapies



DISCUSSION

Basavarajiyam has described detailed symptomatology of Kampavata as 'Karapadatalekampa' (tremors in hands and legs), Deha Bhramana (rombergism), Nidra Bhanga (insomnia) and Kshina Mati (impairment of intellect) which is equivalent to Parkinson's disease.

Because of its crippling nature and non-availability of curative treatment, Parkinson's disease has remained a great problem. Though in modern medical science, a lot of research works have been done. Some medications like Carbidopa, Levodopa, recently some neurosurgeries like thalamotomy, subthalamotomy, some brain stimulation technique like thalamic stimulation, subthalamic stimulation are used for Parkinson's disease, but no therapy is present which stops the progress of Parkinson's disease.

In Ayurvedic classics different types of treatment measures have been counseled to adopt in various type of Kampavata. Acharya Charaka has mentioned Asthapana Basti for Vepathu. Acharya Vangasena has advised Swedana, Snehana, Anuvasana, Niruha Basti, Shirobasti and Virechana etc in the management of Kampavata.

Probable mode of Action on Masha taila Matra basti

- Masha taila is one of the effective oil widely used for many neurological condition.
- Masha is the main ingredient, other ingredients are Dashamoola dravya, Chagamamsa and many Kalka dravyas, as base tila taila was used.
- Masha is said to be Param vatahara due to Madhura rasa, Guru snighda guna, Ushna virya and Madhura vipaka with vatahara karmas
- Masha also indicated in Nervous disability, paralysis and weakness of memory.
- Dashamoola indicated in Vatavyadhis due to vatahara properties.
- Chagamamsa is sarvaroga prashamanam and promotes vidya, swarya, bala etc.
- Tilataila with snigdha, guru properties pacifies ruksha, khara properties of vata and due to Sukshma, Vyavayi, vikasi, Vishada and sara properties increases permeability of cell membrane.
- Godugda having Madhura rasa, Guru snigdha guna and Madhura vipaka pacifies vata dosha.
- Maximum of kalka ingredients are posses vata kaphahara properties.

- Keeping all in mind this taila was selected for Matra basti. When medicated oil reaches rectum and colon, presence of short chain fatty acids in oil allows direct diffusion of drugs from epithelial cells in to capillary blood villi showing its generalized effect.

Probable mode of action on Ksheerabala taila 7 Aavarthita Matra basti

- All the three ingredients Bala, Ksheera, and Til taila possess Madhura rasa and vipaka.
- Madhura rasa mitigates both vata and pitta dosha, dhatunam prabalam, tarpayati and jeevayati.
- Tila taila possess tikta rasa, most effective in mitigating pitta and kapha dosha in addition to madhura rasa
- Tikta rasa is effective in Murcha prashamana, medhya, ushna veerya of tilataila reduces Vata and kapha.
- The presence of antioxidants prevents the possible damage of neurons.

Probable mode of Action of Matra basti

- Matra basti drugs travels to Pakvashaya initially and gains control over vatadosha, does vata shaman and Rasayana of dhatus.

CONCLUSION

The following conclusions are drawn after logical interpretation of the results obtained in this clinical study, which are listed below:

- Masha is said to be Param vatahara due to Madhura rasa, Guru snighda guna, Ushna virya and Madhura vipaka with vatahara karmas. Masha also indicated in Nervous disability, paralysis and weakness of memory. Dashamoola indicated in Vatavyadhis due to vatahara properties. Chagamamsa is sarvaroga prashamanam and promotes vidya, swarya, bala etc. Tilataila with snigdha, guru properties pacifies ruksha, khara properties of vata and due to Sukshma, Vyavayi, vikasi, Vishada and sara properties increases permeability of cell membrane. Godugda having Madhura rasa, Guru snigdha guna and Madhura vipaka pacifies vata dosha. Maximum of kalka ingredients are posses vata kaphahara properties.

- All the three ingredients Bala, Ksheera, and Til taila of Ksheerabala taila possess Madhura rasa and vipaka. Madhura rasa mitigates both vata and pitta dosha, dhatunam prabalam, tarpayati and jeevayati. Tila taila possess tikta rasa, most effective in mitigating pitta and kapha dosha in addition to madhura rasa. Tikta rasa is effective in Murcha prashamana, medhya, ushna veerya of tilataila reduces Vata and kapha. The presence of antioxidants prevents the possible damage of neurons.

- All the 30 patients from both the groups showed poor response ie; below 25%

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