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A Comparative Clinical Study of *Mustadiyapana Basti* with and without *Konch Beej Churna* (Modified *Kala Basti* Schedule) in *Kampavata* (Parkinson's Disease) - Research Article

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ABSTRACT

Parkinson's disease is a progressive, neurodegenerative disorder impacting CNS and motor functions. According to *Basvrjyam*, *Kampavata* is one of the disorders of impaired *Vata* having *Karapad Tale Kampa* (Tremors), *Deha Bhramana* (Rombergism), *Nidrabhanga* (Disturbed sleep) and *Kshina Mati* (Dementia).^[1] *Panchakarma* is the pivot of *Ayurveda* cosmos. *Basti Karma* is known to be the best remedy for *Vata* disorders thus for this research, open labelled clinical study was done wherein 40 patients were taken in random manner having symptoms of *Kampavata* and were divided into two groups, group A received *Mustadiyapana Basti* with *Konch Beej Churna* and group B received *Mustadiyapana Basti* without *Konch Beej Churna* daily for 9 days evaluation and the result of both the group exhibited that the improvement provided by group A was better in both sign & symptoms like *Kampa*, *Gatisanga*, *Stambha* & *Vak Vikriti*, and in the sign of Picking of pins with hands, buttoning time, Marie sign (blink rate/min), rapid alternating movements, chest expansion, hand grip power, foot pressure in comparison to group B.

Key words: *Kampavata*, *Vata Vyadhi*, *Parkinson's disease*, *Mustadiyapana Basti*, *Panchakarma*.

INTRODUCTION

We are not our age, we are our energies is what we have heard a sentence that very much implies in our lives, how? We say as age advances, our body tissues start depleting gradually and diseases take in course only if one doesn't take care of the body. Age doesn't define your will to do any task but the zeal which one has from within. There can be 40y/o that are extremely

immature and 26-year-olds that are gracefully matured from their age. It is all about the energy inside our Brain. But what if we say this energy producing center in our brain gets depleted? A neurotransmitter called Dopamine fails to reach the nerve cells due to degeneration leading to slowness in movement tremors and rigidity in the body. This condition is known to be Parkinson's disease. Parkinson's usually affects the middle age, but it can occur as young onset PD due to genetic factor with its prevalence 0.3% of the whole population in industrialized countries and in India, 328/100000.^[2] According to *Ayurved*, mostly the neurological conditions come under the *Vata Vyadhis*. *Kampa* is defined as *Vepathu* in *Charak* as one of the 80 *Nanatmaj Vata Vikar*^[3] where there is core sign of *Kampa* (tremor). *Acharya Madhavakar* defined the condition as *Vepathu*^[4] and *Basavrjyam* described *Kampavata* as a whole word meaning with its symptoms such as *Karapad Tale Kampa* (Tremors), *Deha Bhramana* (Rombergism), *Nidrabhanga* (Disturbed sleep) and *Kshina Mati* (Dementia).

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Modern medications for the ailment involve Dopamine replacement therapy and Deep Brain Stimulation (DBS) with limited accessibility and several undesirable side effects. *Panchakarma* is the pivot of *Ayurveda* cosmos. *Basti Karma* is known to be the best remedy for *Vata* disorders with prolonged benefit and negligible side effects. *Basti* chosen for the disease was *Mustadiyapana Basti* since it is *Brumhaniya*, maintains life and reserve homeostasis in body,^[5] *Anuvasana Basti* of *Bruhat Chagaladya Ghrita*^[6] was given to the patient due to its wonderful effect on the *Kampa* and nourishment of tissues, *Sashtik Shali Pinda Swedan* was taken as adjuvant therapy due to its *Snigdha*, *Guru*, *Sheeta* and *Tridoshaghna* properties helps in improving rigidity, enhancing muscular strength.

AIM AND OBJECTIVES

- To evaluate the effect of *Mustadiyapana Basti* with *Konch Beej Churna* (modified *Kala Basti* schedule) in *Kampavata* (Parkinson's disease).
- To evaluate the effect of *Mustadiyapana Basti* without *Konch Beej Churna* (modified *Kala Basti* schedule) in *Kampavata* (Parkinson's disease).
- To compare the effect of *Mustadiyapana Basti* with and without *Konch Beej Churna* (modified *Kala Basti* schedule) in *Kampavata* (Parkinson's disease).

MATERIALS AND METHODS

Patients with features of *Kampavata* (Parkinson's disease) were selected randomly from OPD and I.P.D of *Panchakarma* dept. of Patanjali Bhartiya Ayurvedigyan Avum Anusandhan Sansthan, Haridwar. It was a clinical study with pre and post-test design wherein a minimum of 40 patients experiencing *Kampavata* (Parkinson's disease) were selected irrespective of their gender, caste, creed or occupation.

Patients were divided into 2 groups randomly, each comprising of 20-20 patients on the basis of inclusion and exclusion criteria with detailed clinical history and physical examination. Routine Lab investigations like CBC, FBS, PPBS were done in each patient to rule out other pathological conditions and physical examination was done to rule out the disease.

Inclusion Criteria

- Patient with age group : 18 -70 yrs.
- Patient with classical features of *Kampavata* (Parkinson's disease).
- Diagnosed cases of *Kampavata* (Parkinson's disease) by MRI (brain), PET scan and symptoms related to the disease will be selected.
- Patient of any socio-economic status, both sexes and all ethnic origins.
- Patients fit for *Basti Karma*.

Exclusion Criteria

- Patients below the age of 18 years and above 70 years.
- Patients having any other disease-causing Tremors and Bradykinesia excluding Parkinson's disease on above criteria.
- Patients suffering from severe Insulin resistance, thyroid abnormalities, or cardiac disease.
- Patients unfit for *Basti Karma*.

Research design

It is a randomized open label clinical study where patients were assigned in two groups each comprising of 20 patients and a period of treatment for 9 days.

Group - A

Patients of this group were administered *Mustadiyapana Basti* with *Konch Beej Churna* in modified *Kala Basti*^[7] Schedule with *Anuvasana Basti* of *Bruhat Chagaladya Ghrita*.

Day		1 st Day	2 nd Day	3 rd Day	4 th Day	5 th Day	6 th Day	7 th Day	8 th Day	9 th Day
Basti	M	A	A	N	N	N	N	N	N	A
Basti	E	-	-	A	A	A	A	A	A	-

M- Morning, E- Evening, A- *Anuvasana Basti*, N- *Niruha Basti*

Group - B

Group B patients were administered *Mustadiyapana Basti* without *Konch Beej Churna* in modified *Kala Basti*

schedule with *Anuvasana Basti* of *Bruhat Chagaladya Ghrita*.

Day	1 st Day	2 nd Day	3 rd Day	4 th Day	5 th Day	6 th Day	7 th Day	8 th Day	9 th Day
Basti	M	A	A	N	N	N	N	N	A
Basti	E	-	-	A	A	A	A	A	-

M- Morning, E- Evening, A- *Anuvasana Basti*, N- *Niruha Basti*

Composition of medicine

Ingredients of *Anuvasana Basti*

<i>Ghrita (Bruhat Chagaladya Ghrita)</i>	96ml
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Ingredients of *Mustadiyapana Basti with Konch Beej Churna*

Dravya	Quantity
<i>Makshika (Honey)</i>	100ml
<i>Saindhava Lavana</i>	8gms
<i>Go Ghrita</i>	150ml
<i>Shatawa, Yashtimadhu, Kutaja, Rasanjana, Priyangu, Konch Beej Churna</i>	60gms
<i>Mustadiyapana Kwatha</i>	250ml
<i>Go Dugdha</i>	120ml
<i>Masha Rasa</i>	80ml
Total quantity	768ml

Ingredients of *Mustadiyapana Basti without Konch Beej Churna*

Dravya	Quantity
<i>Makshika (Honey)</i>	100ml
<i>Saindhava Lavana</i>	8gms
<i>Go Ghrita</i>	150ml

<i>Shatawa, Yashtimadhu, Kutaja, Rasanjana, Priyangu</i>	60gms
<i>Mustadiyapana Kwatha</i>	250ml
<i>Go Dugdha</i>	120ml
<i>Masha Rasa</i>	80ml
Total quantity	768ml

Procedure - *Niruha Basti*

Poorva Karma

Niruha-Basti is indicated to be administered at noon (*Madhyahna*), after the digestion of previous meal or empty stomach. It is presumed that when stomach is full, peristalsis is stimulated, and intestinal contents are pushed to end point. If *Niruha* is given in full stomach, it will hamper the intestinal activities leading to complications. *Adho Abhyanga* with suitable *Sneha* and mild *Swedan* should be done prior to the administration of *Basti*. Patient is asked to lie down on his left side and keep head on his arms in form of pillow with body relaxed and straight. The right leg should be drawn up to his chest and the left leg should be straightened.

Pradhan Karma

The *Basti* is taken in the *Basti-Putaka* and tied well placing the *Basti Netra* in position. The trapped air in *Basti-Yantra* is expelled by gently pressing the *Basti-Putaka*. Anal region and the *Netra* should be smeared with oil. Gently probe the anal orifice with the index finger of the left hand and introduce the *Basti Netra* through it into the rectum up to first *Karnika* without shaking. Keeping in the same position, press the *Basti-Putaka* with right hand with adequate force. The amount of time taken for squeezing should be 30 *Matra Kala*. Remove carefully the *Basti-Netra* when a little quantity of *Niruha* has remained inside the *Basti Putaka*.^{[8],[9]}

Pashchat Karma

Patient should be gently struck three times on each of the soles and over the buttocks. He is made to lie on his back as long as it would take to count up to

hundred. The lower limb should be in raised position by means of pillow in such a way that the active principle (*Veerya*) of the *Basti* spreads throughout the body. If a patient gets the urge for defecation he can attend. After passing the motion at an appropriate time patient is allowed to take solid food immediately. Nutritional food must be given since after taking food *Kapha* is increased and has nullifying action on *Vata Vriddhi* produced by *Niruha*.

Adjuvant Therapy

Sashtik Shali Pinda Swedan

Criteria for assessment

- Improvement of signs and symptoms were assessed with appropriate scorings at the end of treatment course.
- The assessment was based on subjective & objective parameters of *Kampavata* (PD)

Grading of *Kampa* (Tremor)

Scale	Score
Bilateral violent tremor along with tremor in tongue, eyelids lips and not suppressed or diminished by willful movement.	4
Tremor not violent but present in smaller number of organs mentioned above.	3
Bilateral tremor.	2
Unilateral slight tremor present at rest decreased by action, increases by emotion and stress and disappears during night.	1
No tremor.	0

Grading of *Gatisanga* (Gait)

Scale	Score
Unable to raise from bed and walk without assistance.	4
Can walk slowly but need help, shuffling with retropulsion/ propulsion lack of associated movement.	3
Can walk without assistance slowly with shuffling with retropulsion/ propulsion.	2

Can walk without assistance slowly but with shuffling gait.	1
Can walk brisk without aid.	0

Grading of *Vakvikriti* (Loss of Speech)

Scale	Score
Incomprehensive words, echoing, speaks only on insistence of examiner.	4
Monotonous voice, slur speech not understandable.	3
No echoing, dysarthria present but speech is understandable monotony present.	2
Variable tone of voice, slight slurring of speech.	1
Normal speech.	0

Grading of *Stambha* (Rigidity)

Scale	Score
Marked rigidity in major joints of limbs, patients maintain abnormal sitting postures, stared eyes.	4
Patients sits properly but Cog-wheel rigidity demonstrable in major joints slow eyeball movements without staring appearance.	3
Rigidity demonstrable on one of major joints.	2
Cog-wheel rigidity feebly present and on continuous examination vanishes.	1
No rigidity.	0

Grading of Picking of pins with Hands Test

Scale	Score
Marked slowness	3
Moderate slowness	2
Mild slowness	1
No slowness	0

Grading of Buttoning time

Scale	Score
Extreme slowness (above 60 seconds)	3
Moderate slowness (40 – 60 sec.)	2
Mild slowness (25 – 40 seconds)	1

Normal (< 25 seconds)	0
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Marie sign

Scale	Score
Extreme slowness (below 10 blinks).	3
Moderate slowness (10-15 blinks)	2
Mild slowness (15-20 blinks)	1
Normal (above 20 blinks/min.)	0

Rapid Alternating Movement

Scale	Score
Normal movement	2
Slowness of movement	1
Inactivity or extreme slowness of movement	0

Chest Expansion

Scale	Score
Severe expansion deformity (< 0.5 cm)	3
Moderate deformity (0.5 –1cm)	2
Mild deformity (1 – 2 cm)	1
Normal (above 2 cm)	0

Hand Grip Power

Scale	Score
Poor power (below 20mmHg)	3
Moderate power (20 – 30 mmHg)	2
Good power (30 – 40mmHg)	1
Normal power	0

Foot Pressure

Scale	Score
Poor pressure (below 20 kg).	3
Moderate pressure (20 –30kg)	2
Good pressure (30 - 40 kg),	1
Normal (above 40 kg)	0

OBSERVATION AND RESULTS

Table 1: Showing the effect of therapy on subjective parameters in Group A.

Group A	Mean		Median		SD		Wilcoxon W	P	% Effect	Result
	BT	AT	BT	AT	BT	AT				
Kampa (tremor)	2.20	0.80	2.00	1.00	0.83	0.62	-4.053 ^b	0.0000506	63.64	Sig
Gatisan ga (gait)	1.85	0.75	2.00	0.50	1.14	0.91	-3.947 ^b	0.0000790	59.46	Sig
Stambha (rigidity)	2.35	0.75	2.00	1.00	0.99	0.72	-4.008 ^b	0.0000612	68.09	Sig
Vakvikriti (loss of speech)	0.90	0.35	0.00	0.00	1.17	0.49	-2.565 ^b	0.0103207	61.11	Sig

Table 2: Showing the effect of therapy on subjective parameters in Group B.

Group B	Mean		Median		SD		Wilcoxon W	P	% Effect	Result
	BT	AT	BT	AT	BT	AT				
Kampa (tremor)	2.40	1.30	2.00	1.00	0.99	0.80	-3.947 ^b	0.0000790	45.83	Sig
Gatisan ga (gait)	1.65	0.70	2.00	1.00	0.75	0.66	-4.146 ^b	0.0000338	57.58	Sig
Stambha (rigidity)	1.95	0.70	2.00	1.00	1.00	0.73	-3.727 ^b	0.0001936	64.10	Sig
Vakvikriti (loss of speech)	1.60	0.85	2.00	1.00	1.23	0.88	-3.771 ^b	0.0001624	46.88	Sig

Table 3: Showing the effect of therapy on objective parameters in Group A.

Group A	Mean		Median		SD		Wilcoxon W	P-Value	% Effect	Result
	BT	AT	BT	AT	BT	AT				
Pin Picking Test (Right Hand)	1.95	1.00	2.00	1.00	0.60	0.56	-4.359 ^b	0.0000131	48.72	Sig

Pin Picking Test (Left Hand)	1.80	1.00	2.00	1.00	0.83	0.56	-3.771 ^b	0.0001624	44.44	Sig
Buttoning time	1.90	0.85	2.00	1.00	0.55	0.59	-4.379 ^b	0.00119	55.26	Sig
Marie Sign	1.90	0.95	2.00	1.00	0.85	0.76	-3.945 ^b	0.00800	50.00	Sig
Rapid Alternating Movement	0.60	1.50	1.00	1.50	0.50	0.51	-4.243 ^c	0.00221	60.00	Sig
Chest Expansion	0.90	0.25	1.00	0.00	0.72	0.55	-3.606 ^b	0.003115	72.22	Sig
Hand Grip Power	2.10	0.90	2.00	1.00	0.55	0.64	-4.179 ^b	0.00293	57.14	Sig
Foot Pressure	1.85	0.70	2.00	1.00	0.67	0.73	-4.234 ^b	0.00230	62.16	Sig

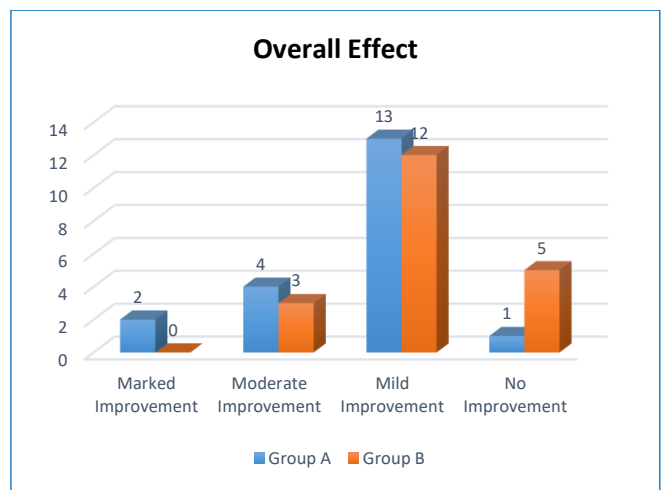
Table 4: Showing the effect of therapy on objective parameters in Group B.

Group B	Mean		Median		SD		Wilcoxon W	P-Value	% Effect	Result
	BT	AT	BT	AT	BT	AT				
Pin Picking Test (Right Hand)	2.05	1.10	2.00	1.00	0.51	0.31	-4.146 ^b	0.000338	46.34	Sig
Pin Picking Test (Left Hand)	1.80	1.00	2.00	1.00	0.70	0.46	-3.771 ^b	0.0001624	44.44	Sig
Buttoning time	2.05	1.15	2.00	1.00	0.51	0.37	-4.243 ^b	0.00221	43.90	Sig
Marie Sign	1.95	0.90	2.00	1.00	0.94	0.64	-3.827 ^b	0.0001295	53.85	Sig
Rapid Alternating Movement	0.60	1.50	1.00	1.50	0.50	0.51	-4.025 ^c	0.000570	60.00	Sig

Chest Expansion	1.10	0.40	1.00	0.00	0.72	0.50	-3.742 ^b	0.0001828	63.64	Sig
Hand Grip Power	2.20	1.15	2.00	1.00	0.52	0.67	-4.185 ^b	0.000286	47.73	Sig
Foot Pressure	2.15	1.15	2.00	1.00	0.59	0.67	-3.879 ^b	0.0001047	46.51	Sig

RESULT

Diagram 1: Assessment of Overall Effect of therapy



Group A - 65% patients showed mild improvement since *Kampavata* (Parkinson’s disease) being a neurodegenerative disorder, followed by 20% showed moderate improvement, 10% showed marked improvement with recent diagnosis of the disease and 5% showed no improvement.

Group B - 60% patients showed mild improvement, 25% showed no improvement followed by 15% with moderate improvement and 0% with no marked improvement.

DISCUSSION

The nervous system is an extraordinarily complex system that send and receive ample amount of information simultaneously but is prone to diseases and injury. Ayurved has a unique concept of *Tridosha* as constituents of human body. They are the functional entities that maintain the body as well as mind. *Vayu* is life, it is the strength and sustainer of the body which holds the body together. *Prana Vayu* is situated in the

Mastishka (Brain). It commands the intellect, *Chitta* and *Indriyas* responsible for salivation, swallowing, respiratory movements. Derangement of it leads to diseases in which one among them is *Kampavata* producing a cardinal sign as *Kampa*. *Basti Chikitsa* in *Panchakarma* is the ultimate treatment for *Vata* disorders and works on the basis of *Veerya* of the drugs amalgamated in the *Basti*.

Overall effect of therapies

In Group A, 10% of patients of *Mustadiyapana Basti* with *Konch Beej Churna* provided marked improvement with the symptoms, 20% of patients had moderate improvement in group A whereas 15% had moderate improvement in group B, we could see mild improvement with 65% in group A patients whereas in group B, 60% got relief. 25% of patients had no improvement in group B whereas 5% were patients of group A who got no improvement. Thus, there is adequate data provided by this study to show that Group A *Mustadiyapana Basti* with *Konch Beej Churna* had a moderate level of role in the management of *Kampavata*.

CONCLUSION

Kampavata is one the 80 *Nanatmaj Vata Vyadhi*, which has unknown etiology but once it affects the patient, it may be precipitated by *Chinta*, *Shoka*, *Bhaya* and all *Hetu's* under *Vata Vikar*. There was no adverse drug reaction and other toxic effect observed during and after the treatment. On comparison, both the groups were found decent effect in the management of disease. Both the procedures are effective and safe for all the patients which were included in the study. But Group A, *Mustadiyapana Basti* with *Konch Beej Churna* shows marginally better effects in the patients as compared to Group B of *Mustadiyapana Basti* without *Konch Beej Churna*. *Konch Beej Churna* act as natural Dopamine hence facilitating in the reduction of the sign and symptoms. Adjuvant Therapy *Sashtik Shali Pinda Swedan* is having *Snigdha*, *Guru*, *Sheeta* and *Tridoshaghna* properties provided improvement in

rigidity, enhancing muscular strength, and lightness in the body.

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