A clinical study to evaluate the efficacy of Matra Basti with Yamaka Sneha in Janu Sandhigata Vata W.S.R. to Knee Osteoarthritis

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Introduction

Osteoarthritis is a degenerative disease affecting weight bearing joints, often described as wear and tear arthritis. Knee joint is the most important weight bearing joint in the body and osteoarthritis of the knee joint is the most common joint disorder usually seen in the elderly people and the people who do excessive physical deeds. Due to the increased prevalence of this disorder it has become a major problem and burden over the society, indirectly reducing the working potency resulting into dependency. The two cardinal radiological features of osteoarthritis are joint space narrowing and osteophytes.[1]

The prevalence of osteoarthritis rises progressively with age such that by 65years 80% of people have radiographic evidence of osteoarthritis, though only 25-30% are symptomatic. The knee and hip are the principal large joints involved, affecting 10-25% of those aged over 65years.[2]

In old age, all Dhatus undergo Kshaya, thus leading to Vata Prakopa and making individual prone to many diseases. Among them Sandhivata stands top in the list.

It is characterized by Vatapurna Driti Sparsha, Prasarana Akunchana Vedana, Shotha and Atopa.[4,5,6] So Osteoarthritis of knee can be correlated to the Janu Sandhi Vata due to the similarities in the symptoms of both.

Ayurveda, describes treatment principle of Sandhigata Vata as “Sneha Upanaham Agnikarma Bandhana Unmardanani Cha.” Sushruta has mentioned the treatment for Sandhivata as Snehana, Swedana, Upanaha, Agnikarma, Bandhana and Unmardana[7]. Vagbhata explained that Sneha should be used according to Yukti, for Bhakshana, Basti, Nasya, Abhyanga, Gandusha, Murdhni Taila, Karna Poorana and Akshi Tarpana.[8]

Basti is advised as best in the treatment of Vata disorders in Charaka Samhita.[15]Acharyas says that when Vata Dosha is causing disease in Sandhi then treatment using Sneha should be administered.[11,12,16] Matra Basti is a type of Sneha Basti in which lesser quantity of Sneha is used i.e. 1½ Pala approximately 70ml. It can be given at all times without any restrictions.[17,18] Yamaka means combination of two Sneha[19]. According to Charaka, Tila Taila is Bala Artham, Snehana Agryam,[20] Ushna, Kapha-Vataghna and Bhagnachyutasandhanam. Vasaa possesses Guru, Ushna, Madhura and Vata Shamaka properties. It is indicated in Sandhi Asthi Marma Ruja.[21]Acharya Charaka even emphasized on the usage of Vasaa in the person who does excessive Vyayama.[22]

Here, as the disease is Vardhakya Janya Vyadhi and Dhatukshyajanya Vyadhi[3] the main aim of treatment is Vatashamana and Bhrumhana. Matra Basti which acts as Brumhana & Vatashamaka. Vasaa is best in Sandhi Ashthi, Marma Ruja and Tila Taila is Balakara & Snehana Agrya. So, to evaluate the efficacy of Matra Basti with Yamaka Sneha i.e Tila Taila and Vasaa were selected for the study in Niraam Sandhigata Vata.

Aims and Objective

To evaluate the effect of Matra Basti with Yamaka Sneha (Tila Taila and Vasaa) in Niraama Janu Sandhigata Vata.

Materials and Methods

Drug Source

Omentum and large intestine were procured from disease free healthy goats, cleaned well and Vasaa is prepared under the supervision of Bhaishajya Kalpana expert in Rasashala of Shri J. G. C. H. S. Ayurvedic Medical College, Ghataprabha. Murchita Tila Taila is purchased from GMP certified company

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Sample Source

Patients were randomly selected from OPD, IPD and Camp of Shri J G C Hospital, Ghataprabha, Dist. Belagavi.

Method of Drug Preparation

Preparation of Vaasa

The fat from Aja Mamsa was collected first. It was cleaned with plain water and the impurities were separated. Then it was put in a vessel and heated on mild fire. Slowly the fat began to melt into liquid. This obtained liquid i.e., Vasa was filtered and stored in a clean container.

Preparation of Tila tail

The Murchita Tila Taila was purchased from GMP certified company.

Method of Collection of Data

A. **Study Design -** Single blind clinical study.

B **Sample Size -** A minimum 30 patients suffering from Janu Sandhigata Vata belonging to either sex irrespective of socio economic status and cast were selected for the clinical study.

C. **Diagnostic Criteria**

- Sandhi Shoola (VAS)
- Sandhi Graha (Stiffness)
- Akunchana Prasarana Vedana (Rom)
- Sparsha Asahyatva (Tenderness)
- Sandi Sphutan (Crepitus)

D. **Inclusion Criteria**

- Patient fulfilling the diagnostic criteria
- Patient fit for Matra Basti
- Patients between the age group of 40-70years
- Niraama Sandhigata Vata

E. **Exclusion Criteria**

- Saama Sandhigata Vata
- Pregnant women and lactating mothers
- Osteoarthritis associated with any systemic disorders such as tuberclusis, malignancy, trauma and rheumatoid arthritis, hypertension and DM etc
- Patient having knee effusion, ligamental tear and fracture, infective arthritis.

Intervention Chart

Sl.	Type of Medicine	Time	Quantity	Duration	Apparatus
01.	Murchita Tila Taila + Vaasa	In morning Immediately after food	70ml (35ml+35ml)	9days	Basti Putaka(100ml syringe), Bastinetra (Rubber catheter)
02.	Follow up	2 follow up 15th& 30th day after the completion of treatment			

Treatment Chart

Sl.	Karma	For Matra Basti
01.	Poorva Karma	Evacuation of natural urges. Patients should be given Sarvanga Abhyanga & Swedana. 70ml of Yamaka Sneha prepared by adding 35ml of each Murchita Tila Taila & Vasaa. Make it warm by indirect heat and fill the syringe and attach it with rubber catheter. Patient asks to have Alpa Laghu Ahara.
02.	Pradhana Karma	Immediately after food ask Patient to lie on table in left lateral position after applying Sneha to catheter & anal orifices, catheter has to be inserted in anal canal till 4 inches carefully. While introducing catheter patient should take deep breath & ask him not to sneeze, cough. In ordered to avoid entry of air into Pakwashaya small quantity of Yamakasneha has to be retained in syringe while taking it out.

03.	Paschyata Karma	Sphiktadana, Padautksepana. Massage on abdomen in anti-clock wise direction. Parihara Vishaya of Anuvasana Basti.
04.	Treatment duration	09 Days
05.	Study follow up	2 follow up, 15th& 30th day after completion treatment

Assesment Criteria

Subjective Parameter

- Sandhi Shoola (VAS)
- Sandhi Graha (Stiffness)

Objective Parameters

- Akunchana Prasarana Vedana (Rom)
- Sparsha Asahyatva (Tenderness)
- Sandi Sphutan (Crepitus)

Methodology

The progress are noted on the basis of assessment parameters (both subjective and objective), before treatment and after treatment in specially prepared case sheet.

Statistical Analysis

The observations were analyzed critically and scientifically by employing some statistical test such as f test.

Criteria for Assessing the Total Effect

Considering the overall improvement had shown by the patient in sign and symptoms, the total effect of the therapy has been assessed as below.

The overall results were assessed based on data obtained before and after the treatment. The percentage of improvement is calculated and graded in following ways –

- No Improvement – Less than 25% of the obtained result.
- Mild Relief – 25% to 50% of the obtained result.
- Moderate Relief – 50% to 75% of the obtained result.
- Marked Relief – More than -75% of the obtained result.
- Complete Improvement – 100% relief in the obtained result

Statistical Analysis

Observation	Maximum	No of patients	Percentage
Age	51-60	13	43.33
Religion	Hindu	29	96.66
Gender	Female	16	53.33
Marital Status	Married	30	100
Occupation	House wife	16	53.33
Socio economical status	Middle class	21	70
Diet	Mixed food	18	60
Nidan	Ruksha Aharaja/Viharaja	30	100
Precipitating factor	Long standing & walking	16	53.33
Involvement of joint	Both knee joint	30	100
Mode of Onset	Chronic	30	100

Results

The results are considered as mirror of the scientific research done by the scholar. The results obtained on Subjective Clinical Parameters such as Vedana, Sandi Graha, objective criteria such as Akunchana Prasarana Vedana, Sparsha Asahyatva, Sandi Sphutan given as follows:

Showing the effect of therapy on Vedana

Symptoms	No. of Patients (n)	Mean ± S.D.				"p" Value One way ANOVA	p Summary
		BT	AT	FU1	FU2		
Vedana	30	3.267 ± 0.6397	2.533 ± 0.7761	1.600 ± 0.8550	0.5000 ± 0.5085	< 0.0001	****
	% of Relief		22.46%	51.02%	84.69%		
	P Value		< 0.0001	< 0.0001	< 0.0001		

Showing the effect of therapy on Sandi Graha among enrolled patients

Symptoms	No. of Patients (n)	Mean ± S.D.				"p" Value One way ANOVA	p Summary
		BT	AT	FU1	FU2		
Sandhi Graha	30	2.467 ± 0.5074	1.900 ±0.6074	1.067 ± 0.6397	0.3667 ± 0.4901	< 0.0001	****
	% of Relief		22.98%	56.74%	92.43%		
	P Value		< 0.0001	< 0.0001	0.0003		

Showing the effect of therapy on Akunchana Prasarana Vedana

Symptoms	No. of Patients (n)	Mean ± S.D.				"p" Value One way ANOVA	p Summary
		BT	AT	FU1	FU2		
Akunchana Prasarana Vedana	30	3.133 ± 0.6814	2.500 ± 0.7311	1.367 ± 0.8087	0.5000 ± 0.5085	< 0.0001	****
	% of Relief		20.20%	56.36%	84.04%		
	P Value		< 0.0001	< 0.0001	< 0.0001		

Showing the effect of therapy on Sparsha Asahyatva

Symptoms	No. of Patients (n)	Mean ± S.D.				"p" Value One way ANOVA	p Summary
		BT	AT	FU1	FU2		
Sparsha Asahyatva	30	2.433 ± 0.5040	1.900 ± 0.6074	0.9333 + 0.7397	0.3000 ± 0.4661	< 0.0001	****
	% of Relief		21.9%	61.65%	87.66%		
	P Value		< 0.0001	< 0.0001	< 0.0001		

Showing the effect of therapy on Sandhi Sphutana

Symptoms	No. of Patients (n)	Mean ± S.D.				"p" Value One way ANOVA	p Summary
		BT	AT	FU1	FU2		
Sparsha Asahyatva	30	1.667 ± 0.4795	1.133 ± 0.6288	0.5333 ± 0.5074	0.3333 ± 0.4795	< 0.0001	****
	% of Relief		32.03%	68.02%	80.02%		
	P Value		< 0.0001	< 0.0001	0.0007		

Over All Result

The percentage of improvement in individual symptoms of Sandivata after treatment and third follow-up

The overall assessment of percentage of improvement of the therapy was assessed on the basis of 06 parameters immediately after treatment and third follow up.

Showing various criteria wise overall results

CRITERIAS	AT	FU2
Sandi Shoola (VAS)	22.46%	84.69%
Sandi Graha (Stiffness)	22.98%	92.43%
Akunchana Prasarana Vedana (Rom)	20.20%	84.04%
Sparsha Asahyatva (Tenderness)	21.9%	87.66%
Sandi Sphutan (Crepitus)	32.03%	80.02%

Over all changes immediate after treatment 23.91% improvement was observed and after follow up 2nd 85.77% effect of therapy was seen. Hence marked relief was found by Matra Basti with Yamaka Sneha.



Probable Mode of Action of Basti with Yamaka Sneha

Basti acts mainly on Asthi and Majjavaha srotas. Asthi is the seat of Vata Dosha. Dalhana says that Pureesha dhara kala and Asthidhara kala are one another the same. So we can assume that if Pureesha dhara kala gets purified and nourished; the Asthi vaha srotas will also be purified and nourished. Also another factor is about the relation between Pittadhara kala and Majja dhara kala, Pitta dhara kala and Grahani.

As an opinion says about the spread of Basti dravya till Grahani and Grahani is the seat of Agni, the nutrients may get absorbed and thereby nourishes the Majja dhara kala, which is having a strong bond with Vata and the nervous system. It is practically seen that after appropriate administration of Basti karma the Vata vyadhi will be reduced.

The Gastro intestinal tract has a nervous system known as "Enteric Nervous System" lie entirely in the wall of the gut, beginning in the Oesophagus and extending all the way to anus.

The number of neurons in this enteric system is about 10 corers almost equal to the number in the Spinal cord. It especially controls gastro intestinal movements and Secretion.

The two plexuses in enteric system are mesenteric plexus and Sub mucosal plexus. The Sigmoidal, Rectal, and anal regions of the large intestine are considerably better supplied with parasympathetic fibres than other portions. They are mainly stimulatory in action especially in the defecation reflexes.

Most of the Absorption in the large intestine occurs in the proximal half of the colon, giving

this portion the naming absorbing colon. Absorption through the gastrointestinal mucosa occurs by active transport and by diffusion.

The Rectum has rich blood and lymph supply and the drugs can cross the rectal mucosa like other lipid membranes.

Thus unionized and lipid soluble substances are readily absorbed from the rectal mucosa. Small quantities of short chain fatty acids such as those from the Butterfat are absorbed directly into Portal Circulation rather than being converted into Triglycerides.

This is because short chain fatty acids are more Water Soluble and allows direct diffusion from the epithelial cells into the Capillary blood of the Villi. More ever a Volume of about 1000cc of gas is estimated to be present in Gastro intestinal tract which can be readily expelled by Bastikarma.

Discussion on Yamaka Sneha

Yamaka means combination of two Snehadravyas[19]. According to Charaka Tila Taila is Bala Artham, Snehana Agryam,[20] Ushna, Kapha Vataghna and Bhagnachyutasandhanam.

Vasaa possesses Guru, Ushna, Madhura and Vata Shamaka properties. it is indicated in Sandhi Asthi Marma Ruja.[21] Acharya Charaka even emphasized on the usage of Vasa in the person who does excessive Vyayama[22].

Considering the basic aim of treatment in Sandhi Vata is to do Vatashamana and Bhrumhana. Hence, Matra Basti which acts as Brumhana & Vatashamaka. Vasaa is best in Sandhi Ashthi, Marma Ruja and Tila Tail is Balakara & Snehana Agrya, by above all properties its showing significant effect in Janu Sandhigata Vata.

Conclusion

- On all observation in this study it's found to be observed that prevalence rate is more in female patients and 51-60 years age group.
- All subjective and objective criteria showing significant result with no replacement of symptoms during follow up study.
- After treatment the average mean percentage of all parameter shows immediate after treatment 23.91% improvement was observed and after follow up 2nd 85.77% effect of therapy was seen.
- Marked relief was found in Matra Basti with Yamaka Sneha in Janu Sandhigata Vata.

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