



Research Article

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ROLE OF AN AYURVEDIC COMPOUND DRUG AND BRIMHANA BASTI IN THE MANAGEMENT OF SANDHIVATA VIS-A-VIS OSTEOARTHRITIS

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ABSTRACT

Vata Vyadhis are considered as Kashtasadhya vyadhi. Sandhivata is one among them which could not be normalized by use of single drug. Thus, to overcome the limitation of single drug therapy, addition of Vatahara, Shothahara, Vedanasthapana and Rasayana drugs were also done in Shamana Yoga (Chitrak, Ashwagandha, Guggulu, Punarnava, Guduchi and Yavakshar in vati form) for acquiring rapid action of the drugs to alleviate this chronic disease Sandhivata. Sandhivata is Vatavyadhi, which is due to kshaya (loss of body element). Basti is best treatment for Vata vyadhis, considering this Brimhana Basti (with Ashwagandha moola, Eranda moola, Bala moola, Nagbala moola, Shatavari kanda, Guda, Goghrita, Gokshir) is selected to access the outcome along with compound drug for comparative clinical evaluation. In present study 55 patients of Sandhivata were selected and were randomly divided into 3 groups. 18 patients in group A (Compound drug), 18 patients in group B (Sarvanga Abhyanga swedana and Brimhana basti) and 19 patients in group C (Sarvanga Abhyanga swedana, compound drug and Brimhana Basti). The study aimed at assessing the effect of Compound drug, Brimhana Basti with Abhyanga-swedana in Sandhigata Vata. The results indicate that all the groups obtained highly significant relief ($p < 0.01$) in almost all signs and symptoms of Sandhivata.

Key words: Sandhivata, Osteoarthritis, Brimhana Basti

INTRODUCTION

Acharya Charaka has described this disease first separately by the name “Sandhigata Anila” but has not included in 80 types of Nanatmaja Vata Vyadhis. Only three cardinal signs and symptoms of this disease have been described.¹ If Vata gets located in the joint and gets provoked there occurs swelling of joints which on palpation appear as if there are bags inflated with air and the movements of extension and flexion are accompanied with pain.

Acharya Sushruta, the profounder of the surgery gave similar description of the entity and is in agreement with Charaka’s signs and symptoms.² The line of its treatment is first explained by Sushruta as Snehana, Mardana, Upanaha, Bandhana, Agnikarma etc.³ This disease is also accepted in Ashtanga Samgraha and Ashtanga Hridaya. The symptoms and line of treatment are in accordance with Charaka and Sushruta without any amelioration to the subject.⁴⁻⁶

The disease Sandhivata can be defined as a disease of Sandhi (joints) with symptoms of Sandhishula (joint pain), Sandhishotha (swelling in joints) and Akunchan prasarana pravitti savedana (pain during movement like flexion and extension of joint). In Modern science, the similar condition of joints is explained as Osteoarthritis. According to WHO, osteoarthritis is the second commonest musculoskeletal problem in the world

population (30%) after backpain (50%).⁷ Osteoarthritis is a chronic degenerative disorder of multifactorial aetiology, characterized by loss of articular cartilage and periarticular bone remodelling. It involves the entire joint including the nearby muscles, underlying bone, ligaments, synovium and capsule. It causes the joint pain typically worse with weight bearing and activity and stiffness after inactivity. It most often affects middle-aged and older people, involving the neck, lower back, knees, hips and fingers. Nearly 70% of people over the age of 70 have X-ray evidence of the disease, but only half of these people ever develop symptoms.

Aims and objectives

- To assess the effect of Ayurvedic compound drug in Sandhigatavata.
- To assess the effect of Brimhana Basti with Abhyanga and swedana in Sandhigata Vata.

MATERIALS AND METHODS

A total of 60 patients of osteoarthritis vis-a-vis sandhivata were randomly selected for the present study from OPD and IPD of Kayachikitsa of Sir Sundarlal Hospital Institute of Medical Science, BHU, Varanasi irrespective of their Age, Sex and Religion, Habitat etc fulfilling criteria of diagnosis of OA in modern medicine and clinical features of sandhivata as described in Ayurveda.

Patients were divided in 3 groups. Out of 60 patients only 55 cases could completed the treatment i.e.2 months of total duration of trial therapy. The study was ethically cleared by ethics committee of BHU. (Dean/2011-12/172 on 14/18-5-2011)

Exclusion Criteria

- History or presence of other active inflammatory or Rheumatic diseases.
- Severe articular inflammation as confirmed by physical examination.
- History of traumatic arthritis.
- Patients aged below 40 years and aged above 65 years.
- Patients of OA without knee joint involvement.
- Substantial abnormalities in Haematological, hepatic, renal or metabolic functions.
- Treatment history of systemic and intra articular corticosteroids administration within 3 month prior to enrolment.

Inclusion Criteria

- Patients aged between 40 - 70 years.
- According to Ayurveda classic, to follow the literary symptomatology viz. Vatapurnadritisparsha sophra (air filled bag like swelling), Prasaranaakunchanyoh Pravrittishcha Savedana (painful flexion and extension movements), Shoola (pain), Stambha (joint stiffness), Sankocha (muscular spasm) etc.
- Persistent Osteoarthritic symptoms for at least 6 months.
- Cases of primary Osteoarthritis only.
- Patients without any anatomical deformity and involvement of knee joint.

Diagnosis

Subjective Criteria: Patients having the signs and symptoms of Sandhivata (Table 1) as described in Ayurvedic texts. Severity index of OA (knee joint) measured both before and after treatment on the basis of clinical criteria (Algo functional lequense index of severity for knee OA; Table 5)

Objective Criteria: The routine hematological and biochemical investigations, RFT and estimation of C-reactive protein (CRP) were carried out before and after treatment. The diagnosis was confirmed by X-ray examination of the involved joint
For differential diagnosis R.A. factor was also taken.

Statistical Analysis

The intra-group comparison was done to see the effect of treatment using paired-‘t’ test. The inter-group comparison between different groups one-way ANOVA (Analysis of Variance) was applied and value of F test was determined. Wherever F test resulted statistically significant, post-hoc test was applied for multiple comparisons, identifying significant pairs of groups.

Grouping

Patients were divided in three groups. (Table 2)

Posology

Ayurvedic Compound drug

The combination consists of Chitrak, Aswagandha, Guduchi, Guggulu, Punarnava, Yava kshara. The vati contains(per day)chitrak 2 gm, Aswagandha 5gm,Guduchi 5gm,Guggulu 5 gm, Punarnava 3 gm and Yava kshar 500-1000 mg.

The vati was used in the dose of two vati TID in a day with lukewarm water. The weight of each vati was approximately 3.5 gm.

Brimhana Basti

Brimhana basti of Yoga basti (8 days) were given for two consecutive months.

Poorva Karma

- Deepan,pachana with Chitrakadi vati for 2 days and
- Abhyanga-svedan for 5 days with Panchguna Tail.
- Anuvasana Basti with Mahanarayana tail-50 to 100ml with saindhav and shatpushpa-2 to 8 gm each in increasing manner for 5 days.

Brimhana basti was prepared as Ksheerpaka of following drugs (as mentioned in Ayurvedic text) with 500 ml milk and 500 ml water till it remains only 500 ml and then mixed with Go ghrita 125ml and guda 30gm.

The individual ingredients for decoction for Basti therapy were

Bala moola, Nagbala moola, Eranda moola, Ashwagandha moola and Shatavari kanda.

Dosage

The trial Basti therapy was used along with Anuvasana Basti as Yog Basti. The dosage of individual ingredient and of prepared Basti liquid was as indicated in table 3.
Total liquid = 500 ml. / Asthapana Basti, after preparation

OBSERVATIONS

In the present study, majority of the patients were from the age group of 50-60 years (53.33%). Majority of the patients were females (63.33%), 45% were housewives, 38.33% were belonging to lower middle class and 55% were residing in urban area. 40% of the patients were having addiction to tobacco derivatives, 66.67% were having vata-kaphaja prakriti, and 50% were having vishamagni.

A total of 46.67% patients had chronicity more than 5 years followed by 3-5 years (26.67%), family history was found negative in 80% patients.

Effect of treatment on Algo Funtional Lequence Index
 In group A initial mean \pm S.D. was 7.3 \pm 4.5 which decrease to 4.19 \pm 3.65 after treatment, it was statistically highly significant result (t= 4.21, p < 0.01) & %relief of group A patients was 43%. In group B mean was decreased from 10.47 \pm 2.69 to 1.13 \pm 0.83 shows highly significant result (t = 15.57, p < 0.01) & % relief is 89.2%. In group C initial mean 11.77 \pm 2.47 was decreased to 0.42 \pm 0.30, it was also statistically highly significant result (t = 20.89, p<0.01) & % relief is 96.4%. The difference in

means was highest in group C followed by group B & A respectively. Thus the efficacy of treatment given to different groups was in this order C>B>A.

During inter-group comparison (One Way ANOVA) it can be concluded that treatment was statistically highly significant (p<0.001). But there is significant difference in treatment was found (POH test) between group A&B, A&C after 60 days (Table 6)

Table 1: Symptoms and their grading score

Grading of Clinical features		
1	Sandhishhula (Joint pain)	0-No Pain
		1-Mild pain
		2-Moderate pain but no difficulty in walking
		3-Slight difficult in walking due to pain
		4-Severe difficulty in walking
2	SandhiShohta (Swelling)	0-No swelling
		1-Slight welling
		2-Moderate swelling
		3-Severe swelling
3	AkunchanaPrasaranajanya Vedana (Pain during flexion and Extention)	0-No pain
		1-Pain without winching of face
		2-Pain with winching of pain
		3- Prevent complete flexion
		4-Does not allow passive movements
4	Hantсандhigata/Sandhivishlesha/ (Kriyahani)- Inability of movements	0-No
		1-Yes
5	Stambha (Stiffness)	0-No Stiffness
		1-Mild Stiffness
		2-Moderate Stiffness
		3-Severe difficulty due to stiffness
		4-Severe difficulty more than 15 min
6	Vatapurnadrutisparsha	
7	SandhiSphutana (Crepitation)	0-No crepitus
		1-palpable crepitus
		2-Audible crepitus
8	Sparshashasyata (Tenderness)	0-No tenderness
		1-Patient says tenderness
		2-Winching of face on touch
		3-doesnot allow to touch the joint

Table 2: Grouping

Groups	No. of patients Registered	No. of patients completed follow-ups	Therapy given	Therapy durations
A	20	18	Ayu. Compound drug	7 gm TDS/day for consecutive 2 months
B	20	18	Brimhana basti	8 Days in a month for 2 months
C	20	19	Ayu. Compound drug and Brimhana basti	Basti for 8 days, 7 gm TDS/day of comp. drug for 2 months

Table 3: Basti dravya preparation

Bala moola	25gm
Nagbala moola	25gm
Eranda moola	25gm
Ashwagandha moola	25gm
Shatavari kanda	25gm
Ksheer(milk)	500ml
Guda (jaggery)	30gm
Go Ghrita	125ml
Water	500 ml

Table 4: Severity Score

Handicap	Score	Total score 0-24
Extremely severe	= > 14	
Very severe	=11-13	
Severe	= 5-10	
Moderate	= 2-5	
Mild	= 0-1	

Table 5: Algo Functional Lequesne Index of Knee OA

	Description	Points
A	Pain/discomfort – 0 = No Pain	
	During nocturnal bed rest	0
	Only on movement or in certain position	1
	Without movement	2
2	Duration of morning stiffness/pain after getting up	0
	less than 15 min.	1
	15 min. or more	2
3	Remaining standing for 30 min. ↑pain	1
4	Pain on walking	0
	Only after walking some distance	1
	Early after starting	2
5	When Getting up from sitting position without the help of arms	1
B	Maximum distance walked	
	Without limit	0
	More than 1 km but limited	1
	More than 1 km about 15 min	2
	From 500-900m(about 15 min)	3
	From 300-500m	4
	From 100-300m	5
	Less than 100m	6
	With one walking sticks	7
With two walking sticks	8	
C	Activities of daily living	
	Can you go up a standard flight of stair	
	Easily	0
	With mild difficulty	0.5
	With moderate difficulty	1
	With marked difficulty	1.5
	Impossible	2

Table 6: Effect of treatment on Algo Funtional Lequesne Index

Group	Mean ± SD					Within the group comparison paired t – test BT – AT
	BT	15 Days	30 Days	45 Days	60 Days	
Group A	7.3±4.5	6.84±4.37	5.61±4.51	4.7±3.32	4.19±3.65	1.08±1.09 t =4.21 p <0.01
Group B	10.47±2.76		4.31±2.69		1.13±0.83	9.05±2.47 t =15.57 p <0.01
Group C	11.77±2.47		2.15±1.42		0.42±0.30	11.39±2.38 t =20.89 p <0.01
Between the group comparison one way ANOVA	F= 9.01 p<0.001		F=5.84 P<0.01		F=15.89 P<0.001	
Post HOC test significant pairs (p <0.05)	A,B A,C		A,C		A,B A,C	

Table 7: Effect of therapies on symptoms & signs in different groups

Symptoms & Signs	Group A (In %)	p-value	Group B (In %)	p value	Group C (In %)	p value
Pain	25	p<0.001	100	p<0.001	100	p<0.001
Swelling	25	p<0.001	50	p<0.001	85	p<0.001
Tenderness	30	p>0.05	30	p<0.001	75	p<0.001
Crepitus	33.3	p>0.05	55.6	p<0.001	36.8	p<0.01
Restriction of Movement	10	p<0.01	63.3	p<0.001	75	p<0.001
Joint Stiffness	8	p>0.05	45	p<0.001	75	p<0.001
Severity Index of Disease	43	p<0.01	89.2	p<0.01	96.4	p<0.01
ESR	24.33	p<0.001	13.45	p<0.01	28	p<0.01
CRP	32.31	p<0.01	18	p>0.05	40	p<0.01

Table 8: Results

Results	Group A	%	Group B	%	Group C	%
Complete Improvement	0	0%	3	16.7%	7	36.8%
Marked Improvement	6	33.3%	11	61.1%	11	57.9%
Moderate Improvement	6	33.3%	1	5.6%	1	5.3%
Mild Improvement	6	33.3%	0	0%	0	0%
Unchanged	0	0%	3	16.7%	0	0%

DISCUSSION

Probable mode of action

Compound Drug

The drug consists of Chitrak, Aswagandha, Guduchi, Guggulu, Punarnava, Yava kshara. This vati acts by the action of Agnisamata, Vatashamana, Rasayana, Analgesics, Anti-inflammatory, Anti oxidants, Sthaulyahara and Brimhana properties of its ingredients.

According to Ayurveda, treatment is ‘Vighatana of Samprapti’.

1. Agnisamata – Because Ayurveda believes Mandagni is responsible for the production of all the diseases. In Sandhivata Vriddhavastha leads Agnivaishmya and same Agnivaishmya leads Vataprakopa. So to achieve Agnisamata Chitrak is very essential for the Shamana of the diseases.

2. Vatashamana – As like Agni, Vayu is responsible for the production of any disease. Sandhivata is a type of Vatavyadhi which occurs due to Vataprakopa. So for the Shamana of Sandhivata, treatment should be which can do Vatashamana. Guggulu have best vatasamak property.

3. Kaphavridhhi (Increase Snigdha guna) – In Sandhivata, srotas in Asthi Sandhi is rikta which provides place to Vata to get situated there. By treatment Rikta srotas is filled by Sneha. Thus Khavaigunya is corrected and Shamana is achieved by Guggulu and Ashwagandha. Ashwagandha increases kapha by its snigdha guna.

4. Rasayana – Sandhivata specially occurs in Vriddhavastha due to Dhatukshya. Rasayan drugs nourish Dhatus and overcome Dhatukshya. Aswagandha, Guduchi and Guggulu have best rasayana properties.

According to Modern Medical science treatment is -

5. Analgesics – to provide relief in pain and for this Guggulu is best.

6. Anti inflammatory drugs – Punarnava due to its mutrala (diuretic) property reduces swelling. Guggulu also have anti inflammatory property. It is reported significant in rats in cotton pellet test (Indigenous drugs of India 1958). The water fraction of the methanol extract of plant leaves was effective in rat paw inflammation and was effective inhibitory action of human polymorphonuclear in vitro.

7. Anti-oxidants e.g. Vitamin A, B, C, E etc – To prevent the joint from oxidative damage. Antioxidants nourish all the tissues. Ashwagandha and Guduchi have best antioxidant properties.

8. Weight reduction – Osteoarthritis mainly occurs in weight bearing joints. Obesity is a risk factor for Osteoarthritis. Excess weight gives burden to the joint and that leads joint damage.⁷ 11 pound weight reduction cuts 50% risk for Osteoarthritis. 5% Weight loss in over weight patients gives 18% gain in overall functions.⁸ According to a study, the overload effect of overweight and obesity on the joint cartilage explains part of the increased risk of developing osteoarthritis in obese people.⁹ So, weight reduction is very essential for the treatment of Osteoarthritis. According to Ayurveda, Sthaulya-Obesity mainly occurs due to Medasagni

Mandya which leads Amamedavridhhi. Due to Vriddha Meda, Medasavrittavata occurs which is the cause for Vata Prakopa. On the other hand, due to Medasagni Mandya which is Poshya Dhatu for Asthi and Majja, Asthi and Majjadhatu kshaya occurs. Khavaigunya takes place in Asthi and Majjavaha Srotas where Prakupita Vata comes and gets situated and the disease Sandhivata produces. So, to correct the Sthaulya or Medavridhhi, is essential for Avaranjanya Sandhivata. Chitrak and Yavakshar have Lekhan property and Punarnava have mutral and shothahar¹⁰ property due to its lekhan and mutral property it reduces weight.

9. Make surrounding tissue strong - Muscles, ligaments and tendons are responsible for the joint stability. So surrounding tissue of the joint must be strong to prevent or to cure the Osteoarthritis. If they are weak, joint damage will occur soon even with the minimal load. Aswagandha, Guggulu and Guduchi have Balya property, which makes tissue strong.

Brimhana Basti

Brimhan Basti is a good nutritive measure in degenerative disorders. Hence, a combination of theses in trial therapy “Brimhan Basti” may provide good results in pacifying the disease. It may produce reduction in pain, swelling, restriction of movement, stiffness and a little bit in crepitations, whereas Basti therapy may improve the health and may cause the slowing of degenerative process of the body.

Basti mainly acts on ascending colon, descending colon, rectum, anus and their nerves. Use of unwholesome diet, with the length of time, leads to clogging of the micro channels present in GIT that absorb Rasa Dhatu. Furthermore due to stagnation this Mala (intestinal toxins) get reabsorbed in the body. These reabsorbed Mala produce various ailments. Basti radically removes these entire Mala factor from the intestines and thus cures the diseases.¹¹ Basti may acts through the nervous system or through the enteric receptors.

According to modern medical science, as per Basti /Enema concerned, in rectal route, the rectum has a rich blood and lymph supply and drug can cross the rectal mucosa like other lipid membrane. Thus by entering in general circulation, Basti drugs acts on whole the body.

Severity of the Knee OA: Table 4

Effect of therapies on symptoms & signs in different groups

It can be concluded from the table 4 that in group A 25% relief was observed in pain while it was 100% in group B and C and it was also statistically highly significant in all three groups (p<0.001). In swelling relief in group A was 25%, and it was 50% and 85% respectively in group B and C and it is statistically highly significant in all groups (p<0.001). In Crepitus relief was 33.3% not significant statistically (p>0.05) in Group A, in Group B and C relief was 55.6% and 36.8 statistically significant (p<0.01). In tenderness relief was 30% in Group A and B while it was

25% in Group C. In restriction of movements relief was 10% in Group A, 63.3% in Group B and 75% in Group C which is statistically significant. In joint stiffness 8% relief in Group A, 45% in group B and 75% relief in group C was observed which is statistically highly significant in B and C Groups. In severity index of disease 43% relief in Group A, 89.2% relief in Group B and 96.4% relief in Group C was observed which is statistically highly significant in B and C Groups. In ESR 24.33% relief in group A, 13.45% in Group B and 28% in Group C was observed and also it was statistically significant. In CRP value 32.31% decrement in Group A, 18% in Group B and 40% in Group C was observed which was highly significant in Group C (Table 7).

Complete improvement was observed in none of the patients in Group A, in 3 patients in Group B, and in 7 patients in Group C. Marked improvement was noted in 6, 11 and 11 patients respectively in Group A, B and C. Moderate improvement was observed in 6, 1 and 1 patients in Group A, B and C respectively. Mild improvement was found in 6 patients in Group A while in none of the patients in B and C. No change was observed in 3 patients in Group B while in none of the patients in Group C (Table 8).

CONCLUSION

According to the literary profile, this disease is Asadhya or incurable in nature, this is also supported by the recurrence of same type of complaint in the patient included in the present clinical study. The medication can give only symptomatic relief for certain period. Effect of compound drug (samsaman) and Brihan Basti (Samsodhana/ purification measures) for Sandhivata (OA) is confirmed due to its systemic effect on dhatukshaya and vitiated Vata, These therapies have proved their significance in individual group as well as overall effect of combination therapy (Trial drug with basti) is found to be superior than individual therapy which is also proved

by observing the better result symptomatically as well as statistically in group C. Since sample size was very small, so it is very difficult to give a definite conclusion, but this work would undoubtedly provided the strong base for further studies.

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