

REVIEW ARTICLE

Retrospective analysis of clinical studies on *Sandhigata Vata*Dr. Deepa Chugh^{*1}, Dr. Anup B thakar², Dr. Mannat Marwaha³

¹M. D. scholar, Department of Panchakarma, Institute For Post Graduate Teaching & Research in Ayurveda, Gujarat Ayurved University, Jamnagar- 361008, Gujarat, India

²Associate Professor and I/C Head Department of Panchakarma, Institute For Post Graduate Teaching & Research in Ayurveda, Gujarat Ayurved University, Jamnagar- 361008, Gujarat, India

³M. D. Scholar, Department of Swasthwritta, Rajiv Gandhi Govt. Post Graduate Ayurvedic College, Paprola- 176063, Dist-Kangra, Himachal Pradesh, India

Received 10 Jun 2013; Revised 21 Sep 2013; Accepted 02 Oct 2013

ABSTRACT

Osteoarthritis (OA) is a chronic degenerative joint disease and is pervasive form of arthritis. It progresses slowly with usual signs and symptoms being pain, enlarged and deformed joints as well as limitation of the range of motion. It is a leading cause of disability affecting 60-70% of the population older than 60 years. Osteoarthritis can be considered as *Sandhivata* in *Ayurveda*. According to *Charaka Samhita Chikitsa Sthana 28 Sandhigata vata* is considered under *Vatavyadhi*. Considering *Sandhigata vata* both *Sandhiashrita* and being a *Vataj* disease various researches have been conducted to cure *Vata* aggravated in *Sandhi* with different indigenous drugs and measures including *Snehana* both systemic and external *Upnaha* and *Agnikarma*, *Virechana*, *Basti*, *Shamana Yogas* like *Guggulu*, *Vati* preparations etc. In most of the studies significant results were observed. So far no reports are available to suggest which modality has better result clinically. By analysing five studies conducted in different research institutes of India, here an attempt is made to elaborate the efficient treatment modality in management of *Sandhigata Vata*. After critically reviewing these researches it can be concluded that, all the treatment modalities are effective and their optimal clinical efficacy depends upon the particular stage or condition of the disease.

Key Words-*Agnikarma*, *Basti*, Osteoarthritis, *Sandhiatavata*, *Shamana*, *Upnaha*.

INTRODUCTION

Osteoarthritis (OA) is a chronic degenerative joint disease and is the commonest form of arthritis. It progresses slowly with usual signs and symptoms being pain, enlarged and deformed joints as well as limitation of the range of motion. is most frequent joint disease with prevalence of 22% to 39% in India^[1,2,3]

It is also a leading cause of disability affecting 60-70 % of the population older than 60 years. It usually affects the hand and large weight bearing joints, often the knee and the hip^[4].The worldwide prevalence estimate for symptomatic OA is 9.6% among men and 18% among women^[5]. It is the fourth leading cause of year lived with disability (YLD). It accounts for the decrease in activities of daily living (ADL) in elderly dependent population in the community^[6].Indisputably the risk factors in high risk population include female gender, old age,

overweight, history of previous injuries or surgeries on the knee^[7,8,9]. Among females, the prevalence of OA is said to increase during menopausal age. Many studies have shown that loss of oestrogen at the time of menopause increases the women's risk of getting osteoarthritis^[10].Although OA occurs all over the world, the prevalence and the pattern of the disease vary depending on the geographical distribution which in turn can provide valuable clues about the potential etiological factors. In ayurveda it is described as *sandhigata vata*. *Acharya charaka* described as "*sandhi gata anila*"^[11] various symptoms in different text involves : *akunchana prasaran vedana*, *shotha*^[12], *atopa*, *hanta sandhi* etc. Considering *sandhigata vata* both *sandhiashrita* and being a *vataj* disease various researches have been conducted to cure *vata* aggravated in *sandhi* with different indigenous drugs and measures including

***Corresponding Author:** Dr. Deepa Chugh, **Email:** deeps.1110@gmail.com

snehana- both systemic and external, *upnaha* and *agnikarma* , *virechana*, *basti*, *shaman yogas* like guggulu, vati preparations etc . In most of the studies significant results were observed. So far no reports are available to suggest that which modality has better result clinically. With this background a review was carried out to know the efficient treatment modality in management of *sandhigata vata*. The studies that have been taken for review are as follows:

1. Dr. Kalpana shinde *et al.*, A clinical study on the role of panchatikta ghrita matra basti and panchatikta kshirapaka with shuddha ghrita in the management of sandhigatavata.2000.

2. Dr. Mukesh L. Chachla *et al.*, The clinical study of sandhi gata vata with special effects of parijat guggulu.1992.
3. Dr.Dhiraj D.Chandasna *et al.*, Further study on agnikarma in Sandhigata vata.1992.
4. Dr.Subhash Sharma *et al.*, To evaluate clinical effect of Panchtikta ksheer basti and Panchtikta Ghrita in management of Sandhivata w.s.r Osteoarthritis.
5. Dr. Praveen kumar *et al.*, Effect of vachadi upanaha and vachadi Ghana vati in sandhigata vata w.s.r to osteoarthritis.2005.

	Group		Contents	Dose	Duration
	Total patients				
Kalpana Shinde	14	Matra basti of Panchtikta ghrita.	Nimba Guduchi Patola Vasa Kantakari Ghrita Ksira	60ml O.D	21days.
	13	Kshirpaka group-panchtikta kshirpaka.		80 ml B.D	21days.
	15	Control group - Mridu abhyanga with bala taila for 10 mins. and nirgundipatra pinda sweda once a day and Yograja guggulu 500 mg twice a day.	AsperYoga Ratanakar(Vatavyadhi Nidana)		21 days
	20	Parijata guggulu vati	Parijata& guggulu in equal proportion	2 gm B.D	2 months
Mukesh I Chachla	20	Placebo	Beson		2 months
	7	Agnikarma locally.			
Dhiraj D Chandsna	7	Vatavidhvansadi yogafollowed by shudha guggulu vati 3 gm daily in divided dose .	Vatavidhvansa, pippalimoola, guduchi & shunthi in equal proportion.	1 gm T.D.S with luke warm water	1 month
	7	Locally agnikarma and internally Vatavidhvansadi compound and shudha guggulu.			
	15	Virechana karma followed by Panchtikta ghrita as shaman yoga	Virechana with Erand tailam.	Panchtikta ghrita 10 gm	20 days
SUBHASH SHARMA	14	Basti	NiruhaBasti: Makshika- 60gm. Saindhva -15gm. Ksheerbala Taila-60ml. Kalka(Madanphala & Shtavha)- 40gm. Kwatha- 200ml Prakshepa(Milk)- 200ml	480ml	Kala Basti schedule 16 days
			Anuvasana Basti: Ksheerbala tailam	60ml	
	10	Upnaha sweda with vachadi yoga for 3-6 hrs.per day .	Vacha,shatavaha, devdaru,rasna, erand,masha each in equal parts.		15 days
PRAVEEN KUMAR	10	Upnaha sweda + shamana with Ghana vati of same drugs.were given with ushanodaka anupana as prakbhakta.		4 tab-500 mg thrice a day.	6 weeks
	10	Placebo	Yava churna	2 tab.(500mg)	

RESULTS AND OBSERVATION

Kalpana Shinde

SYMPTOMS	GROUP -1	GROUP - 2	GROUP - 3
%age relief in Symptoms			
Sandhishoola	69% (p<0.001)	57.48% (p<0.001)	51.28%(p<0.001)

Sandhishotha	74.1% (p<0.001)	46.96% (p<0.05)	50% (p<0.05)
Akunchana prasarana vedana	90.2% (p<0.001)	56.09% (p<0.001)	60% (p<0.001)
Sandhisphutana	40.3% (p<0.01)	35.11% (p<0.01)	30.1% (p<0.01)
Stambha	69.3% (p<0.001)	62.60% (p<0.001)	54.89% (p<0.001)
Sparsasahyata	64.9% (p<0.001)	50% (p>0.05)	82.10% (p<0.001)

Basti therapy was found more effective in controlling *Sandhishula*, *Sandhishotha*, *akunchanaprasarna vedana*, *Sandhisphutan* and

Stambha But control group was found more effective in relieving *Sparshasahyata*.

Mukesh I Chachla (1992)

SYMPTOMS	GROUP -1
	%age relief in Svmtoms
Pain	90.38% (p<0.001)
Swelling	74.5% (p<0.001)
Stiffness	65.78% (p<0.001)
Crepitation	17.24% (p<0.05)
Akunchanaprasarana vedana	33.33% (p<0.001)
Shrama Asahyata	21.42% (p<0.01)
Morning stiffness	14.81% (p<0.001)

In placebo group no significant result was observed in any signs and symptoms of *Sandhigatavata*.

Dhiraj D Chandsna

SYMPTOMS	GROUP -1	GROUP - 2	GROUP - 3
	%age relief in Symptoms		
Pain	73.7% (p<0.001)	44.4% (p<0.001)	85.70% (p<0.001)
Swelling	81.8% (p<0.001)	50.0% (p<0.05)	85.70% (p<0.001)
Stiffness	66.7% (p<0.01)	63.6% (p<0.05)	100% (p<0.001)
Crepitation	100.0% (p<0.05)	41.7% (p<0.01)	100% (p<0.01)
Savedanaprasarana- akunchana Pravriti	85.7% (p<0.001)	41.2% (p<0.05)	85.70% (p<0.001)
Tenderness	71.4% (p<0.001)	41.7% (p<0.05)	100% (p<0.001)
Shramasahyata	38.5% (p<0.1)	77.8% (p<0.05)	100% (p<0.01)
Sandhigatihani	64.3% (p<0.001)	50.0% (p<0.05)	85.70% (p<0.001)

Comparative analyses of results show that the patients of group 1 and 2 were benefited equally,

whereas the patients of group 3 were more benefited than group 1 and 2.

SUBHASH SHARMA (2000)

SYMPTOMS	GROUP-1	GROUP -2
VAS(Visual analogue scale)	56.98%	46.68%
Degree of severity	54.25%	51.25%
Joint pain	67.44%	46.09%
Tenderness	61.79%	51.19%
Restriction of flexion	73.00%	71.00%
Oedema	85.84%	78.96%
Pain during movement	51.28%	50.00%
Walking distance	46.15%	46.41%
Local crepitation	24.81%	21.32%
Morning stiffness	68.05%	69.00%

Inter group comparison shows that there is significant difference in the effect of therapy on VAS (p<0.05) and joint pain (p<0.05) in both groups but no such significant difference observed

on other symptoms like degree of severity, tenderness, oedema, walking distance, crepitations, morning stiffness etc.(p>0.05).

PRAVEEN KUMAR (2005)

	Group-1	Group-2	Group-3
	%age of relief		
Sandhi shoola	43.48% (p<0.001)	75% (p<0.001)	10.52% (p<0.10)
Sandhi shotha	35.71% (p<0.05)	56% (p<0.001)	16.67% (p<0.10)
Sandhigraha	42.86% (p<0.001)	76% (p<0.001)	15% (p<0.10)
Prasarna akunchana vedana	38.09% (p<0.001)	88% (p<0.001)	5.80% (p<0.10)
Sandhi sphutana	46.67% (p<0.01)	50% (p<0.001)	14.28% (p<0.10)

Statistically all these values were significant. The results obtained for symptoms of *Sandhigatavata* in group-2 showed higher %age of improvement

than gr-1. Placebo therapy showed an unsatisfying type of result in improvement of any of symptoms

DISCUSSION

As *Sandhigatavata* is *Madhyamamargagata Vatika disorder*^[13] in which *Vata* gets lodged in *Sandhi*. Hence to treat *Sandhigatavata* drugs acting on both *Vata* and *Asthi* should be selected. Considering this point, *Basti* medicated with *Tikta dravya*, *Ghrita* and *Kshira* is specially recommended in treatment of *Asthivaha Srotodusti*.

The Guggulu is used mainly in *Vata vyadhi*. The reason it lies on the part of chemical constituents of Guggulu and its *Rasa*,^[14] *Guna*^[15], *Virya* and *Vipaka* which play an important role for overcoming the ailments. Guggulu removes the factor of *Dhatukshaya* by its Madhura, Katu, Tikta, Kashaya Rasa and Picchila, Snigdha Gunas. It is also effective by removing the obstruction in *Srotas* due to *Lekhana* property in case of disorder caused by *Margawarna*. Moreover arthritis results from dysregulation of pro-inflammatory cytokines (e.g. tumour necrosis factor and interleukin-1beta) and pro-inflammatory enzymes that mediate the production of prostaglandins (e.g. cyclooxygenase-2) and leukotrienes (e.g. lipooxygenase), together with the expression of adhesion molecules and matrix metalloproteinases, and hyperproliferation of synovial fibroblasts. All of these factors are regulated by the activation of the transcription factor nuclear factor-kappa B. Thus, agents that suppress the expression of tumour necrosis factor-alpha, interleukin-1beta, cyclooxygenase-2, lipooxygenase, matrix metalloproteinases or adhesion molecules, or suppress the activation of NF-kappaB, all have potential for the treatment of arthritis. Numerous agents derived from plants can suppress these cell signaling intermediates, including guggulsterone (guggul), boswellic acid (salaki guggul). Indeed, several preclinical and clinical studies suggest that these agents have potential for arthritis treatment.^[16]

Parijata being *Ushna* in virya is strongly *Vata shamaka*. It acts as analgesic and anti inflammatory, *anulomana*, *deepana*, *kaphaghna* and *vata shamaka* in nature

Sandhigata Vata is produced by vitiated *Vata Dosha* with anubandha of *Kapha*. So *Agnikarma* is considered as best therapy to pacify these doshas.

Due to *Ushana*, *Tikshana*, *Sukshma*, *Ashukari* *guna* it removes the *srotavrodha* and pacify the vitiated *Vata* and *Kapha Dosha* and increase the *Rasa*

rakta samvahan (Blood circulation). Due to more blood circulation, it probably flush away the pain producing substance and patients get relief from symptoms.^[17] Also in *Agnikarma*, we transfer therapeutic heat to *twak dhatu* (skin) and gradually to deeper structure^[18] which helps in pacifying pain and other symptoms. When heat is applied to the skin, it causes more blood to flow into the area. When blood flow increases to an area, it brings along oxygen and nutrients that can help to speed healing. Heat helps to relax muscles, which can decrease some types of pain sensations. The sensation of heat on the skin also provides something called an analgesic effect: it alters the perception of pain so patient don't hurt as much.^[19]

Also *Vatavidhvansa* made from Guduchi, Pippalimoola, Shunthi and guggulu acts as *Vata shamaka* due to their *Ushna virya*.

Virechaka drugs are having *Ushna*, *Tikshna*, *Sukshma*, *Vyavayi* and *Vikasi* property, they reaches *Hridaya* by virtue of its *Virya* and then following the *Dhamani* it pervades the whole body through large and small *Srotasa*. The *Panchabhautika* combination of *Virechaka* drugs i.e. *Prithvi*, *Jala* and by the virtue of their properties helps in eliminating the morbid humor from *Shakha* to *Kostha* and then out of the body. Secondly, the action of *Virechana* drugs can be considered as either secretory or osmotic in action. During the time of excessive work by intestine, blood supply increases and plasma portion is pulled to intestine. Extra cellular fluid is the medium of the exchange between plasma portion of blood and interstitial fluid that fills the spaces between the cells. This extra cellular fluid on reaching the

plasma portion circulates all over the body and comprises of various toxic products, which when passing through intestine may provide the path for elimination of toxic products which in turn helps in relieving the symptoms like pain, inflammation etc.

Basti is important for maintaining the level of myelopoiesis in the bone marrow.^[20] *Sneha Basti* or *Brimhana* type *Basti* acts over different systems of the body by virtue of its multidimensional actions. Orthopedic conditions being specifically caused by *Vitiation of Vata Dosha* are primarily treated with *Basti*. Bone remodelling depends upon the *Asthidhara Kala* which is nothing but the *Purishdhara Kala*^[21] i.e. structurally the colon. Intestinal flora is one of the main functional unit

of colon and of *Niruha Basti* nourishes this bacterial flora and maintains the bone health. Gut is the chief organ that is associated with absorption and excretion functions of the body. Removal of inflammatory mediators and toxic matters depends upon healthy gut. *Basti* causes colon cleansing that removes accumulated wastes and unhealthy microbial flora and initiates better absorption and effective excretion which prevents accumulation of toxins which can be stated in ayurvedic terms as *Ama* formation. *Basti* is helpful to reduce the excess of morbid matter, purifies every channel normalizes the function of *Vata*.

Sushruta clearly mentioned the effect of sweda in *sandhirogas* (*Sandhien Stabdham chestayedashu yukta*)^[22] and typically mentioned *Upanahasweda* in *Vata rogas*^[23]. *Upanaha Sweda* is *Vatashamaka* by virtue of its *Ushana, snigdha guna* it combats with the properties of *Vata doshas* like *Sheeta, Ruksha, laghu*. The associated symptoms due to prakopa of *kapha dosha* are also reduced due to properties like *Ushana, Ruksha* and *tikshana* properties of *Sweda dravaya*. Thus at the same time the symptoms caused by both *Vata* and *Kapha doshas* are reduced by *Upanaha Sweda* and *Sheetata, Shoola, Stambha* etc. caused by these *doshas* are reduced.^[24]

Regarding intensity of pain *Parijata guggulu* and *Upanaha sweda* with *Shamana* therapy has given results more than 75% which was more as compared to other therapies. Also in symptom *Sandhishotha Basti, Virechana, Agnikarma* and *Upanaha* have given best results. In symptoms like joint crepitation and pain while moving *Basti* and *Agnikarma* have given more percentage relief as compared to other therapeutic modalities. This can be explained on basis of fact that in initial phase of acute pain and inflammatory oedema drugs having anti-inflammatory properties reduces inflammation and hence reduces pain. Also *Upanaha* is a type of *Sweda* which acts like a deep heating modality and gives anti-inflammatory effect by clearing the inflammatory mediators from affected joint. *Agnikarma* itself is a modality that gives deep heating and simultaneously alters pain signal intensity. *Basti, Matrabasti, Kshirapaka* are the modalities that gives nourishment to the joint and removes vitiated *Vata* thereby impede the degenerative process. Even *Virechana* therapy cleans the obstruction in *Srotasa* ensuring best nutrition and drainage of Vitiated *Doshas* from joint.

CONCLUSION

All the treatment modalities are found effective in the management of *Sandhigata Vata*. However based upon the clinical presentation or stage of the disease, suitable modality can be utilized. *Upanaha, Parijata Guggulu* or other *Shamana* drugs can be used to relieve the acute inflammation and pain. *Basti, Kshirapaka, Matrabasti, Virechana* are the modalities that can be employed after the initial acute phase is over and repairing or remodeling of joint is expected. *Agnikarma* has to be utilized if no relief is obtained with systemic approach or other external therapies.

REFERENCES

1. Chopra A, Patil J, Bilampelly V. The Bhigwan (India)COPCORD: Methodology and first information report, APLAR. J Rheumatol 1997; 1:145-54.
2. Chopra A, Patil J, Bilampelly V, Relwane J, Tandle HS. Prevalence of rheumatic disease in rural population in Western India: A WHO-ILAR-COPCORD study. J Assoc Physicians India 2001; 49:240-46.
3. Mahajan A, Jasrotia DS, Manhas AS, Jamwal SS. Prevalence of major rheumatic disorders in Jammu. JK Science 2003; 5:63-66.
4. Nevitt MC, Felson DT, Lester Gayle. Osteoarthritis initiative – Protocol for Cohort Study. <http://oai.epiucsf.org/datarelease/docs/StudyDesignProtocol.pdf> last accessed on 2012-11-07.
5. Prevalence and pattern of symptomatic knee osteoarthritis in Nigeria-A community based study.
6. Epidemiology of knee Osteoarthritis – Results from Framingham study.
7. Felson DT, Zhang Y. An update on the epidemiology of knee and hip osteoarthritis with a view to prevention. Arthritis Rheum 1998; 41(8):1343–55.
8. Felson DT, Chaisson CE. Understanding the relationship between body weight and osteoarthritis. Baillieres Clin Rheum 1997; 11(4):671–81.
9. Oliveria SA, Felson DT, *et al.* Body weight, body mass index, and incident symptomatic osteoarthritis of the hand, hip, and knee. Epidemiology 1999; 10(2):161–6.
10. Generalized osteoarthritis is a hormonally mediated disease-1989.

11. Agnivesha, Charak Samhita commentary by Pandit Kashinath Shastri and Dr. Gorakh Nath, Chikitsa Sthana 28/37, 2007 p. 783.
12. Agnivesha, Charak Samhita commentary by Pandit Kashinath Shastri and Dr. Gorakh Nath, Chikitsa Sthana 28/37, 2007 p. 783.
13. Agnivesha, Charak Samhita commentary by Pandit Kashinath Shastri and Dr. Gorakh Nath, Sutra Sthana 11/48.
14. Ashtanga Sangraha Samhita, Ut; 49/164-175.
15. Bhava Prakash Nighantu, Karpuradi Varga/32-45.
16. Khanna D, Sethi G, Ahn KS, Pandey MK, Kunnumakkara AB, Sung B, Aggarwal A, Aggarwal BB. Division of Immunology, Department of Medicine, University of Cincinnati, Cincinnati, OH, USA.
17. Sehgal U, Rajgopal M, Dwivedi RR. Role of agnikarma and ajamodadivati in the management of Sandhigata vata w.s.r cervical spondylosis. *Ayu* 2009;30:345-9.
18. Vyasdeva Mahanta, Tukaram S. Dudhamal, Sanjay Kumar Gupta. Management of tennis elbow by Agnikarma. *J Ayurveda Integr Med* 2013;4:45-7
19. McCarberg, Bill and O'Connor, Annie. [A New Look at Heat Treatment for Pain Disorders Part 1](#). American Pain Society Bulletin. 14:6, 2004.
20. Tada T, Yamamura S, Kuwano Y, Abo T. Level of myelopoiesis in the bone marrow is influenced by intestinal flora. [Cellular Immunology](#). 1996 Oct 10; 173(1):155-61.
21. Dalhana on Sushruta kalpasthana 4/45, Varanasi, India, Chaukhamba Surabharati Prakashana, 2008;546
22. Sushruta samhita Chikitsa Sthana 32/122.
23. Sushruta Samhita Chikitsa Sthana 32/14.
24. Agnivesha, Charak Samhita commentary by Pandit Kashinath Shastri and Dr. Gorakh Nath, Sutra Sthana 14/13.