ISSN: 2322 - 0902 (P)
ISSN: 2322 - 0910 (O)

International Journal of Ayurveda and Pharma Research

Research Article

LOCAL EFFECT OF *SARSAPADI TAILA* IN THE MANAGEMENT OF UNCOMPLICATED OSTEOARTHRITIS W.S.R TO *SANDHIVATA*: A PILOT STUDY

Sharma Pooja[1]*, Kajaria Divya[2]

*[1]PG Scholar, [2]Assistant Professor, Department of Kayachikitsa, All India Institute of Ayurveda, Sarita Vihar, Gautam puri, New Delhi, India.

ABSTRACT

Osteoarthritis (degenerative joint disease) is the most common joint disorder and it mostly affects cartilage. Osteoarthritis (OA) is of two types, primary (idiopathic) and secondary. In idiopathic osteoarthritis, the most common form of the disease, no predisposing factor is apparent. Secondary OA is pathologically indistinguishable from idiopathic OA but is attributable to an underlying cause. The NSAIDs are the main drugs of choice in modern medicine which have lots of side effects and therefore are not safe for long-term therapy. According to Ayurveda OA can be correlated with *Sandhivata* which is mentioned by Acharya Charak as a sign and symptoms of *Sandhigatavata* are *Shula, Shotha, Stambha, Sparsha-asahyata, Sphutana, Akunchana Prasarana Vedana*. The aim of the present study was to see the local effect of *Sarsapadi Taila*, two times in a day for 30 days. Ingredient of *Sarsapadi taila* is *Sarsap taila*, *Aadrak* and *Ajwain.* The preparation of *Taila* was done as mentioned in Sharangdhar Samhita. The ratio of the three components is Kalka (*AadraK+ Ajwain*) one part, *Sneha dravya* (*Sarsap taila*) four parts and *Drava* (water) should be 16 parts. A pilot study was done in All India institute of Ayurveda hospital. In present study total 25 patients were treated with *Sarsapadi Taila* which was already taking modern analgesics. After the whole study results were analyzed and tapering the analgesic dose of medicine, there was mild significant changes in the condition of the patients. It is advised to *Sarsapadi Taila* can be used for the treatment of *Sandhivata* for a long time.

KEYWORDS: Osteoarthritis (OA), *Sarsapadi taila, Sandhivata*, corticosteroids, *Aadrak*.

INTRODUCTION

Osteoarthritis is the clinical and pathological outcome of a range of disorders that results in structural and functional failure of synovial joints.[1] Traditionally, it has been considered a disease of articular cartilage. The current concept holds that osteoarthritis involves the entire joint organ, including the subchondral bone, menisci, ligaments, periarticular muscle, capsule, and synovium.

Osteoarthritis is one such disease wherein a rise in incidence is being observed owing to faulty diet and lifestyle. The disease usually affects in the fourth decade, and the occurrence increases linearly with age.[2] The incidence of osteoarthritis in India is as high as 12%. It is estimated that approximately four out of 100 people are affected by it. Osteoarthritis is the most common articular disorder begins asymptomatically in the 2nd and 3rd decades and is extremely common by age 70. Almost all persons by age 40 have some pathologic change in weight bearing joint, 25% females and 16% males have symptomatic osteoarthritis. Unilateral OA is more prevalent in male and bilateral OA in female.[3] It is a degenerative disease characterized by loss of articular cartilage and synovial inflammation, joint stiffness, swelling, pain, and loss of mobility being its hallmark symptoms.[4] The disease has a propensity to affect the weight- bearing joints such as the knee and hip most commonly and is hence a potent cause of disability.

Allopathic treatment has its own limitation in managing this disease. It can provide either conservative or surgical treatment and is highly symptomatic and with troublesome side effects. Whereas such type of conditions can be better treatable by the management and procedures mentioned in *Ayurvedic* classics.[5] The symptoms of OA correlate with *Sandhigata Vata* explained under *Vatavyadhi*. *Sandhivata* is first described by Acharya Charaka as *Sandhigata Anila* with symptoms of *Shotha* (swelling) which on palpation feels like a bag filled with air and *Shula* (pain) on *Prasarana* and *Akunchana* (pain on flexion and extension of the joints).[6] Acharya Sushruta also mentioned *Shula* and *Shotha* in this disease leading to the diminution (*Hanti*) of the movement at joint involved.[7]

Madhavakara adds *Atopa* (crepitus in joint[8]) as additional feature of it. The pathologic underpinnings of this disease are attributing to the aberration of *Vata* and *Kapha Dosha*, affecting the *Asthi* (bone), *Sandhi* (joint), *Mamsa* (muscle), and *Snayu* (ligament).

Samprapti Ghatakas

Nidana	*Vata Prakopaka Nidana*
Dosha	*Vata, Vyanavayu, Shleshaka Kapha*
Dushya	*Asthi, Majja, Meda*
Srotas	*Asthivaha, Majjavaha* and *Medovaha*
Srotodusti	*Sanga*
Agni	*Mandagni*
Dosha marga	*Marmasthi Sandhi*
Roga marga	*Madhyam*
Udbhavathana	*Pakvashaya*
Vyaktasthana	*Asthi – Sandhi*

Aims and objectives

1. A pilot study of *Sandhivata*
2. To evaluate the efficacy of *Sarsapadi Taila* in the management of *Sandhivata*

Drug review

Ingredients of *Sarsapadi Taila*

S.No.	Hindi name	Botanical name	Parts used
1.	*Ajwain*	*Trachyspermum ammi*	Seed
2.	*Aadrak*	*Zingiber officinale*	Rhizome
3.	*Sarshap taila*	*Brassica juncea*	-

Preparation of the herbal oil

All the herbs were procured from local traders and authenticated by a qualified botanist in our research center. The oil was prepared as mentioned in *Sharangardhar samhita* ratio of oil (4 parts): *Kalka* (1 parts): water (16 parts).

MATERIALS AND METHODS

The present clinical study was conducted in department of Kayachikitsa, All India Institute of Ayurveda, Sarita Vihar, Gautam Puri New Delhi. In this study, 25 patients suffering from knee joints pain diagnosed with sign and symptoms and willing to participate in the clinical study were selected irrespective of sex, caste and religion from the OPD of Kayachikitsa, AIIA. Consent was obtained from all the participants before including them in the study.

Inclusion criteria

- Patients of either sex aged between 25 to 70 years
- Classical sign and symptoms of *Sandhigatavata*.
- Patients without any anatomical deformity were included.
- Patients who were taking modern analgesics.
- Patient willing and able to participate in the study.

Exclusion criteria

- Patients age below 25 years and above 70 years.
- Pregnancy and lactation
- Diabetes mellitus
- Hypertension
- Heart disease
- Renal pathology
- Rheumatoid arthritis
- Past history of Koch's
- Carcinoma

Study Design

Pilot study

Trial Methodology: Open clinical trial

Grouping: Total 25 clinically diagnosed patients of osteoarthritis as *Sandhivata* were taken in a single group.

Follow up studies

- All patients were regularly followed once after 7 days, 14 days, 21days and 30 days.
- Improvement and other effects were noted down.

Duration of trial

- Total duration of trial: 30 days.

Assessment Parameters

- Subjective assessment

Clinical sign or symptoms of the *Sandhivata*as mentioned in classical texts.

- Objective assessment

Table for scoring of criteria assessment

Pain at the Time of Physical Work

Grade	0	1	2	3	4
Morning	No pain	Mild pain	Moderate	Severe pain	Cannot move freely
Night	No pain	Mild pain	Moderate	Severe pain	Cannot move freely
Sitting	No pain	Mild pain	Moderate	Severe pain	Severe pain

Rising from sitting	No pain	Mild pain	Moderate	Severe pain	Cannot move freely
Walking	No pain	Mild pain	Moderate	Severe pain	Cannot move freely
Ascending Stairs	No pain	Mild pain	Moderate	Severe pain	Cannot move freely
Descending Stairs	No pain	Mild pain	Moderate	Severe pain	Cannot move freely
Weight bearing	No pain	Mild pain	Moderate	Severe pain	Cannot move freely
Getting in & out of toilet	No pain	Mild pain	Moderate	Severe pain	Cannot move freely

Pain on Joint Movements (Flexion & Extension)

Grade	**0**	**1**	**2**	**3**	**4**
Right	No pain	Mild pain	Moderate	Severe pain	Cannot move freely
Left	No pain	Mild pain	Moderate	Severe pain	Cannot move freely

Tenderness

Grade	**0**	**1**	**2**	**3**	**4**
Right	No	Mild pain on palpation	Moderate pain with change express	Severe pain with withdrawal	Don't allow to touch
Left	No	Mild pain on palpation	Moderate pain with change express	Severe pain with withdrawal	Don't allow to touch

Swelling

Grade	0	1	2	3	4
Right	No swelling	Mild swelling	Moderate swelling	Very severe swelling	Cannot move legs
Left	No swelling	Mild swelling	Moderate swelling	Very severe swelling	Cannot move legs

Frequency of Taking Analgesics

Grade	**O**	**1**	**2**	**3**	**4**
Modern analgesics	No analgesic taken	1-2 times/ month	1-2 times/week but not daily or more	Once a day	2 or more analgesic/day

Result

Effect of *Sarsapadi Taila* on *Sandhivata* in 25 patients is described in below table on the basis of scoring of symptoms.

S. No.	**Sign and symptoms**	**BT (mean)**	**AT (mean)**	**BT-AT**	**% relief**	**SD**	**SE**	**t value**	**P value**
1.	Pain at the time of physical work	73.6	63.96	9.64	13.09	4.66	0.93	10.33	P<0.001
2.	Pain on joint movements	16.32	12.2	4.12	25.24	2.10	0.42	9.77	P<0.005
3.	Tenderness	15.52	10.64	4.88	31.44	1.9	0.32	12.84	P<0.0005
4.	Swelling	16	11.24	4.76	29.75	2.61	0.52	9.08	P<0.005
5.	Frequency of taking analgesics	16.96	12.64	4.32	25.47	3.44	0.68	6.26	P<0.05

Observation

On the basis of the symptoms, scoring was done and results were calculated according to the scoring. The outcome of the *Sarsapadi Taila* was well described in the above table. Here only one group was taken so paired t-test was applied for evaluating the effectiveness of the *Taila*. After observing the above values it is clear that *Sarsapadi Taila* is really very effective in treating OA specially *Sandhivata*.

DISCUSSION

In the *Samprapti* of *Sandhigatavata, Prakupita Vata* gets situated in *Asthi Sandhi* where *Khavaigunya- Rikta Srotas* is already present. Then *Dosha Dushya Sammucchana* takes place in *Asthi Sandhi* and further in *Samprapti*, the disease *Sandhigatavata* appears with its symptoms. *Sandhigatavata* is *Kastasadhya vyadhi* because all the *Vatavyadhis* are difficult to cure and they are said as *Mahagada*. So being a *Vatavyadhi, Sandhigatavata* is *Kastasadhya*. *Madhyama Rogamarga*, situation in *Marma Asthi Sandhi*, vitiation of *Asthi* and *Majja, Dhatukshya, Vriddhavastha* also makes it *Kastasadhya.*

Medicated oils have principally three components namely, *Drava* or *Qwatha* (a liquid which may be aqueous decoction of one or more herbs, or juice of herbs or milk), *Kalka* (a fine paste of the herbs) and *Sneha dravya* (a vegetable oil). The ratio of the three components are, *Kalka* one part, *Sneha dravya* four parts and *Drava* should be 16 parts.

Mustard oil (*Brassica juncea* [L.] Czern.) contains about 60% monounsaturated fatty acids (42% erucic acid and 12% oleic acid), 21%

polyunsaturated fatty acids (6% the omega-3 alpha-linolenic acid and 15% the omega-6 linoleic acid), and about 12% of saturated fats.[9] Omega-3 fatty acids have potency to improve OA due as its metabolites have inhibitory role in the production of inflammatory cytokines responsible for arthritic pain and also effective against arthritic pain as well as other symptoms, including joint stiffness.[10,11] Mustard oil has stimulant and counter irritant properties and it is also mentioned in classical Ayurvedic literatures.[12] Due to these properties, it is included in "The Ayurvedic Pharmacopoeia of India".[13]

Ajwain (*Trachyspermum ammi* Sprague.), with its characteristic aromatic smell and pungent taste, is widely used as a spice in curries. It has been shown to possess digestive stimulant,[14] hypo-lipidemic[15], anti-inflammatory[16], anti-microbial[17], anthelmintic[18], bronchodilating, anti-hypertensive, hepatoprotective, antispasmodic[19], antilithiasis, diuretic[20], abortifacient[21], galactogogic[22], anti-platelet-aggregatory[23], antitussive[24], antifilarial[25], gastroprotective[26], nematicidal[27], anthelmintic[28], detoxification of aflatoxins[29].

Ginger has staring potential for treating a number of ailments including degenerative disorders (arthritis and rheumatism), digestive health (indigestion, constipation and ulcer), cardiovascular disorders (atherosclerosis and hypertension), vomiting, diabetes mellitus, and cancer. It also has anti-inflammatory and anti-oxidative properties for controlling the process of aging. Furthermore, it has antimicrobial potential as well which can help in treating infectious diseases.[30]

After application of this oil, a significant number of patients with decreased joint mobility were also improved. This may be due to the combined effect of decrease in pain, tenderness, and swelling, which contributed to improvement of joint condition and its mobility. The efficacy of *Sarsapadi Taila*, it was found effective for chronic pain of musculoskeletal origin and showed continuous reduction of pain, tenderness, and improvement of joint mobility with clinically significant results seen within 30 days of treatment. It is considered being safe as topical application.

CONCLUSION

Concisely, this pilot study, which investigated the effects of *Sarsapadi Taila* on patients who were suffering from chronic pain of musculoskeletal origin, showed that this topical preparation was mild effective in reducing patient's subjective pain and tenderness. These results suggest that the local application of *Sarsapadi Taila* was mild effective in *Sandhivata* Pain.

REFRENCES

1. Nuki G. Osteoarthritis: a problem of joint failure. Z Rheumatol 1999;58: 142-7.
2. Altman RD. Early management of osteoarthritis. Am J Manag Care 2010;16:S41-7.
3. Acheson RM, Collart AB. New haven survey of joint diseases. XVII. Relationship between some systemic characteristics and osteoarthrosis in a general population. Ann Rheum Dis 1975; 34:379-87.
4. Musumeci G, Aiello FC, Szychlinska MA, Di Rosa M, Castrogiovanni P, Mobasheri A, et al. Osteoarthritis in the XXIst century: Risk factors and behaviours that influence disease onset and progression. Int J Mol Sci 2015;16:6093-112.
5. Allen KD, Golightly YM. Epidemiology of osteoarthritis: State of the evidence. Curr Opin Rheumatol 2015; 27:276-83.
6. Shastri R, Upadhaya Y, editors. Charaka Samhita of Agnivesha, Chikitsa Sthana, Ch. 28, Ver. 37, Edition reprint. Varanasi: Chaukhambha Bharti Academy; 2007. p. 783.
7. Shastri AD, commentator. Sushrutha Samhita of Sushruta, Sutra Sthana, Ch. 1, Ver. 28-29, 11th ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2001. p. 230.
8. Upadhaya Y, editor. Madhava Nidana, Ch. 22, Ver. 21, 13th ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2002. p. 463.
9. Entry for Mustard Oil in the United States Department of Agriculture, Agriculture Research Service. National Database for Standard Reference. Release 27. [Last accessed on 2015 Apr 13].
10. Zainal Z, Longman AJ, Hurst S, Duggan K, Caterson B, Hughes CE, et al. Relative efficacies of omega-3 polyunsaturated fatty acids in reducing expression of key proteins in a model system for studying osteoarthritis. Osteoarthritis Cartilage. 2009; 17:896–905.
11. Goldberg RJ, Katz J. A meta-analysis of the analgesic effects of omega-3 polyunsaturated fatty acid supplementation for inflammatory joint pain. Pain. 2007;129:210–23.
12. Panda H. Herbs cultivation and medicinal uses. Delhi: NIIR; 2004. pp. 183–4.
13. Anonymous. 1st ed. Vol. 6. New Delhi: Ministry of Health and Family welfare, Department of AYUSH Government of India; 2008. p. 210. The Ayurvedic Pharmacopoeia of India, Part 1.
14. Vasudevan K, Vembar S, Veeraraghavan K, Haranath PS. Influence of intragastric perfusion of aqueous spice extracts on acid secretion in

anesthetized albino rats. Indian J Gastroenterol. 2000;19:53–6.
15. Kumari KS, Prameela M. Effect of incorporating Carum copticum seeds in a high fat diet for albino rats. Med Sci Res. 1992;20:219–20.
16. Thangam C, Dhananjayan R. Antiinflammatory potential of the seeds of Carum copticum Linn. Indian J Pharmacol. 2003;35:388–91.
17. Bonjar GH. Anti yeast activity of some plants used in traditional herbal-medicine of Iran. J Biol Sci. 2004;4:212–5.
18. Priestley CM, Williamson EM, Wafford KA, Sattelle DB. Thymol, a constituent of thyme essential oil, is a positive allosteric modulator of human GABA(A) receptors and a homo-oligomeric GABA receptor from Drosophila melanogaster. Br J Pharmacol. 2003;140:1363–72.
19. Gilani AH, Jabeen Q, Ghayur MN, Janbaz KH, Akhtar MS. Studies on the antihypertensive, antispasmodic, bronchodilator and hepato protective activities of the Carum copticum seed extract. J Ethnopharmacol. 2005; 98:127–35.
20. Ahsan SK, Shah AH, Tanira MO, Ahmad MS, Tariq M, Ageel AM. Studies on some herbal drugs used against kidney stones in Saudi folk medicine. Fitoterapia. 1990;61:435–8.
21. Nath D, Sethi N, Srivastav S, Jain AK, Srivastava R. Survey on indigenous medicinal plants used for abortion in some districts of Uttar Pradesh. Fitoterapia. 1997;68:223–5.
22. Kaur H. Estrogenic activity of some herbal galactogogue constituents. Indian J Anim Nutr. 1998;15:232–4.
23. Srivastava KC. Extract of a spice – Omum (Trachyspermum ammi)-shows antiaggregatory effects and alters arachidonic acid metabolism in human platelets. Prostaglandins Leukot Essent Fatty Acids. 1988;33:1–6.
24. Boskabady MH, Jandaghi P, Kiani S, Hasanzadeh L. Antitussive effect of Carum copticum in Guinea pigs. J Ethnopharmacol. 2005;97:79–82.
25. Mathew N, Misra-Bhattacharya S, Perumal V, Muthuswamy K. Antifilarial lead molecules isolated from Trachyspermum ammi. Molecules. 2008; 13:2156–68.
26. Ramaswamy S, Sengottuvelu S, Haja SS, Jaikumar S, Saravanan R, Prasadkumar C, et al. Gastro protective activity of ethanolic extract of Trachyspermum ammi fruit. Int J Pharm Biosci. 2010;1:1–15.
27. Pelczar MJ, Chan EC, Krieg NR. Microbiology. New York: McGraw Hill International; 1988. Control of microorganism by physical agents; pp. 469–509.
28. Velazhahan R, Vijayanandraj S, Vijaya samundeeswari A, Paranidharan V, Samiyappan R, Iwamoto T, et al. Detoxification of aflatoxins by seed extracts of the medicinal plant, Trachyspermum ammi (L.) Sprague ex Turrill structural analysis and biological toxicity of degradation product of aflatoxin G1. Food Control. 2010;21:719–25.
29. Anilakumar KR, Saritha V, Khanum F, Bawa AS. Ameliorative effect of ajwain extract on hexa-chlorocyclohexane-induced lipid peroxidation in rat liver. Food Chem Toxicol. 2009;47:279–82.
30. Shukla Y, Singh M. Cancer preventive properties of ginger: A brief review. Food Chem Toxicol. 2007;45:683–90.

Cite this article as:
Sharma Pooja, Kajaria Divya. Local Effect of Sarsapadi Taila in the Managmenment of Uncomplicated Osteoarthritis w.s.r to Sandhivata: A Pilot Study. International Journal of Ayurveda and Pharma Research. 2019;7(5):28-32.
Source of support: Nil, Conflict of interest: None Declared

***Address for correspondence**
Dr Sharma Pooja
PG Scholar,
Department of Kayachikitsa, All India Institute of Ayurveda, Sarita Vihar, Gautam puri, New Delhi, India.
Email: drpoojansharma@gmail.com
Phone: 9610796106