Chinese Traditional Medicine Journal

ISSN : 2693 6356
2018 | Vol 1 | Issue 3

Osteoarthritis Pain Reduction with Ajamodadi Vati (An Ayurvedic Formulation)

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Abstract

Background: Formerly known as degenerative joint disease, osteoarthritis (Sandhigata Vata) is now classified as a disease of the Vata humor in Ayurveda. Vata, Kapha, and Sleshmadhara Kala (the joint mucous membrane) are the key Doshas (humors) involved in the pathophysiology of age-related degenerative joint disease. Sandhigata Vata Ajamodadi Vati (an Ayurvedic preparation) will be studied for its analgesic effects. Substances and Techniques: Thirty patients who met the study's requirements participated for a total of 30 days. In the experiment, the medication was given at a daily dosage of 3 grams. The findings revealed that the trial medicine was statistically significant in reducing the complaints measured by both subjective and objective indicators (with the exception of swelling). The trial medicine Ajamodadi Vati showed excellent analgesic impact against osteoarthritis pain, the results revealed.

Keywords: *Osteoarthritis, Ajamodadi Vati, Sandhigata Vata, and Analgesic Effect*

Introduction

Osteoarthritis (OA) is the most prevalent musculoskeletal disorder in the world (30%) after back pain (50%). The reported prevalence of osteoarthritis in rural India is (5.78%). Among 80% of world population the prevalence is usually seen in the age group of 60-65 yrs with some radiological evidences[1,2]. It is the most common form of joint disorder amongst the elderly and obese persons which is a major cause of morbidity and chronic disability as well as burden on health care resources especially for the elderly. This disease keeps an insidious attack, which runs for many years causing the loss of function as well as deformity of the joints. Elderly osteoarthritis is the leading cause of chronic disability and some 1,00,000 people in the United States are unable to walk independently from bed to bathroom because of OA[3].

In Ayurveda the condition is equated to *Sandhivata* or *Sandhigata Vata.* Even though *Sandhigata Vata* is not mentioned in Vedic literature, *Acharya* Charaka, Madhavakara, etc. have dealt this condition under the context of *Vata Vyadhi*. *Sandhigata Vata* is also commonly called as *Sandhivata* .

In spite of the scientiꢀc advancement in the ꢀeld of Medicine, a large number of people suffer from OA all over the world without a permanent relief from this disease. It is said that current treatment for osteoarthritis is purely based on control of symptoms because there is no disease modifying osteoarthritis drug yet. Intra-articular steroids are widely used, even though they provide marked relief from symptoms but they loose their effect within weeks tomonths.

Ayurveda opines that *Vyadhi* (disease) is a condition in which body suffers from pain. Hence it is believed that reliving the pain is the main treatment to state

that the disease is subsided. It is clear to state that *Vedana* (pain) and *Shotha* (swelling) are the main features of *Sandhigata Vata*, wherein *Vedanahara* and *Shothahara* are the drugs of choices. *Ajamodadi Vati* is indicated for the *Sandhivata* by *Acharya* Yogaratnakara. Out of the composition of the drug *Sunthi*, *Vruddhadaru* and *Ajamoda* are known analgesics. Thus in this study an effort is being made to assess the efficacy of *Ajamodadi Vati* as *Lakshanika Chikitsa* (symptomatic management) in *Sandhigata Vata* especially in reliving pain.

Materials & Methods:

In the present study the investigators objective was to study the efficacy of trial drug as determined by ordinal the difference between the baseline data of the parameters to the after treatment data.

a) **Study Design:** Preliminary open clinical study

b) **Source of data, Sample Size and Grouping:** Patients suffering from osteoarthritis were selected from Dept. of K.C., P.G.S. & R. C., OPD, of Shree D.G.M.A.M.C. & H. Gadag, Karnataka. 30 patients in a single group.

c) **Trial drug:** *Ajamodadi Vati* [4] containing 10 ingredients (table-1).

Table 1: Depicting the ingredients of *Ajamodadi Vati*

SNo	Sanskrit Name	Latin Name	Quantity
1	***Ajamoda***	*Apium leptophyllum*	1 *Tola*
2	***Pippali***	*Piper longum*	1 *Tola*
3	***Velam (Vayuvidanga)***	*Embelica rebes*	1 *Tola*
4	***Shatapushpa***	*Foeniculum vulgare*	1 *Tola*
5	***Chitrakamoola***	*Plumbago zeylanica*	1 *Tola*
6	***Shunti***	*Zingiber officinale*	1 *Tola*
7	***Haritaki***	*Terminalia chebula*	1 *Tola*
8	***Vrudhadaruk***	*Ipoemia petalodea*	1 *Tola*
9	***Saindhava Lavana***	Rock salt	1 *Tola*
10	***Guda***	Jaggery	Q.S.

d) **Dose:** 3 gms/24 hrs in divided doses (1 gm TDS)

e) **Duration of Study :** 30 days

f) Selection Criteria:

Exclusion criteria:

- Patients below 30 years and above 70 year of age
- Pregnant woman & lactating mother.
- Associated with simple or compound fractures.
- Associated with any other systemic or metabolic disorders.
- Patient on steroid therapy
- Patient under gone surgery

Inclusion criteria:

- Patients suffering from the symptoms of *Sandhivata* (Osteoarthritis) of one year
- Patients of either gender aged between 30-70 years are included-as the condition is commonly found in the either sex, but not specific to the old age.

g) Parameters:

Subjective Parameters:

1) *Prasarana Akunchana Pravruti Vedana* (Pain during flexion and extension of joints)
- Grade 0 – No Complaints
- Grade 1 – Tells on Enquiry
- Grade 2 – Complains Frequently
- Grade 3 – Excruciating Condition

2) *Sandhi Graha* (stiffness)
- Grade 0 – Absent
- Grade 1 – Present

3) *Sparsha Akshamatva* (pain by touch)
- Grade 0 – No Complaints
- Grade 1 – Says the joint is tender
- Grade 2 – Winces the affected joint
- Grade3 – Winces and withdraws the affected joint

4) *Shotha* (Swelling)
- Grade 0 – No Complaints
- Grade 1 – Slightly obvious
- Grade 2 - Covers well over the bony prominence
- Grade 3 - Much elevated

5) *Vatapoorana Druti Sparsha* (Bursitis)
- Grade 0 – No Bursitis
- Grade 1 – Minimum Bursitis observed
- Grade 2 - Moderate Bursitis observed
- Grade 3 - Prominent Bursitis observed

Objective Parameters

1) Joint pain: grading was based upon the moderate universal pain assessment tool which is a visual analogue scale to assess pain in patients.

2) Pain assessment through standardized Mc Gill's questionnaire

3) Swelling: was measured with a tape and graded

4) Walking time: to cover 21 meters was recorded and grades.

Grade 0 – Up to 20 seconds
Grade 1 – 21-30 seconds
Grade 2 - 31-40 seconds
Grade 3 – 41-50 seconds
Grade 4 – 51-60 seconds

I) Ethical Clearance: was obtained from Institutional Ethics Committee after which the study was started.

Results:

A total number of 170 patients were scrutinized at OPD level and 30 patients were enrolled for the study randomly. All the 30 patients completed the stipulated duration of 30 days and no dropouts were reported.

a) Gender and Age

There was no speci◎city observed with reference to the gender because the prevalence of *Sandhigata Vata* is common in both males and females, but females may be more prone to osteoporosis in post menopausal period. Conceptually age certainly has effect because as the age advances there is *Kapha Kshaya* (Decrease of humor *Kapha*) and *Vata Vruddhi* (Increase in humor *Vata*). Patients aged 50-60 years dominated the study. However an early onset of the disease was also noted in the age group of 30-40 years. The effect of drug on gender revealed that 7 out of 12 males and 9 out of 18 females had moderate response.

b) Evaluation of pain data

Among 30 patients all of them reported with pain of variable intensity. 100% of patient experienced pain during ◎exion & extension of the affected joint, 96.67% of them had joint swelling, 93% of them had stiffness which restricted their activities and nearly 80% patients reported pain by touch (Table 2). 46.66% of patients experienced generalized pain. 43.33% of patients were noted by aching type of pain and 10% of people with burning type of pain (Table 2).

Table 2 : Evaluation of Pain

Complaints	% of patients effected
Sandhi Shotha	96.66
Prasarana Akunchana Vedana	100
Sandhi Graham	93.33
Sparsha Akshamatwa	80
Nature of Pain	
Pricking	10
Aching	43.33
Generalized	46.66

The joints involved in the majority of patients were Knee joint (70%), interphalangeal joints (46.6%), Ankle (26.66%), Lumbar Spine (16.66%), Cervical and Axial (6.66%).

C) Assessment of the effect

Post treatment the trial drug showed 55.44% relief in pain due to *Prasarana* & *Akunchana*, 23.25% relief in *Sandhi Graha*, 43.08% relief in *Sparsha Akshamatwa* and 38.57 % relief in *Sandhi Shotha* (Table 3).

Table 3: Effect of trial drug on Pain

Parameter	Mean Score BT	Mean Score AT	Mean Difference	% Improvement
Prasarana Akunchana Vedana	1.93	0.86	1.07	55.44
Sandhi Graham	0.86	0.66	0.2	23.25
Sparsha Akshamatwa	1.23	0.7	0.53	43.08

The trial drug *Ajamodadi Vati* showed statistically signi◎cant result in alleviating *Vatapurna Driti Sparsha, Sandhi Shota* (Subjectively) and Joint Pain. Walking time also improved signi◎cantly with improvement in MC Gills Pain assessment questionnaire. However Swelling evaluated objectively by measuring did not show any signi◎cant difference statistically (Table 4).

Discussion

Sandhigata Vata even though is explained as one of the derivatives of *Vata* there is no speci◎c *Nidana* (etiology) explained and is most of the time related to ageing. There is an intimate relation between *Vata* and *Kapha* in *Sandhigata Vata*. Restoration of *Vata* to its normal state helps in the management of *Sandhigata Vata.*

Table 3: Statistical assessment on effect of trial drug on Subjective & Objective Parameter

Sl no	Parameter	Mean BT	Mean AT	% of Improvement	SD	SEM	t value	P Value	Significance
1	*Vataporna Driti Sparsha*	1.033	0.466	54.88	0.568	0.103	5.504	<0.001	HS
2	*Sandhi Shota*	1.4	0.9	35.71	0.572	0.104	4.807	<0.001	HS
3	Joint pain	7.766	2.1	73.50	1.268	0.231	24.502	<0.001	HS
4	Swelling	309.53	309.06	05.25	9.722	1.775	00.262	<0.40	NS
5	Walking time	2.633	1.566	40.52	0.365	0.066	16.16	<0.001	HS
6	MC Gills Pain Questionnaire	13.10	09.16	30.00	1.874	0.0003	13.13	<0.001	HS

In present study maximum numbers of patients belonged to age group of 50-60 years, which is suggestive of the involvement of *Vata* predominance and the symptoms of joint pain is being age related. The combination *Ajamodadi Vati* is said to be possessing *Vedanahara* (analgesics) effect by virtue of its pharmaco-dynamic properties [5]. The main *Dosha* in *Sandhivata* is *Vata*, with degeneration of joints being one of the components. The combination of the trial drug not only acts as a pain reliever but also acts on *Ama* (Biological waste) with its *Deepana* (carminative) and *Pachana* (digestive) properties [5]. *Ajamodadi Vati* with its ingredients express anti-inflammatory and analgesic action by regulating the *Shleshmadhara Kala Shotha* (Inflammation of the mucus membranes of the joints).

Conclusion

The results of the preliminary pilot study suggest that the trial drug when used in *Sandhigata Vata* produces a significant *Vedhanahara* (Analgesic) effect by virtue of the pharmaco-dynamic properties possessed by its ingredients. However a clinical study with larger sample size and for longer duration may be helpful in understanding the exact mode of the action. The therapeutic effect of drug in specific joint pain may also be assessed to know its efficacy.

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