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JALAUKAVACHARANA AND RASANA LEPA IN VEDANA OF JANU SANDHIGATAVATA- A COMPARATIVE CLINICAL STUDY

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ABSTRACT

Advancing age in an adult is associated with several degenerative changes in the body. Though Osteoarthritis refers to the commonest form of degenerative joint disease, sparing no sex, race or geographic area affecting any joint, knee and hip are the principal large joints affected. It is said that pain is one of nature's earliest signs of morbidity and it stands pre-eminent to all sensory experiences by which humans judge the existence of disease within themselves. The management of pain in this condition has been a great challenge for Ayurveda practitioners. A comparative clinical study was designed with Group A of 20 patients being treated by *Jalaukavacharana* alone and Group B of 20 patients with *Rasanachoorna lepa.* The data of Group A and Group B were analyzed individually and compared by using contingency coefficient and two way ANOVA. Overall assessment showed moderate and slight improvement in most of the patients but only Group A recorded 3 patients finding marked relief and 1 having complete remission. There was a significant difference between the groups with Group A showing better improvement in all aspects. Though both *Jalaukavacharana and Rasana choorna Lepa* provided relief, *Jalaukavacharana* provided an acute and sustained relief.

Keywords: Osteoarthritis, *Jalaukavacharana, Rasanachoorna ,Sandigatavata.*

INTRODUCTION

Sandhigatavata is one such disease which is frequently associated with ageing. It has been enumerated under *vatavyadhi* and is in parlance with Osteoarthritis (OA) in the allied science. *Acharya Chakrapani* while commenting on *vayah* mentions that after the age of 60 the *dhatus* attain *"Heeyamanavastha".*[1] Statistics show that there is steady rise in overall prevalence of OA from the age of 30 years and by the age of 65years 80% of people have associated symptoms.[2] Though Osteoarthritis refers to the commonest form of degenerative joint disease. In India *Janu Sandhigatavata* or Osteoarthritis of knee is commonest. The attempts at providing better relief in case of *Sandhigata vata* have been only partially fulfilled. The modern counterpart has a wide range of NSAID's and local steroids to handle pain, but they are attached with the stigma of side effects leading to severe complications in the long term use. The above limitations call for an alternative treatment for acute management of pain which forms the principal symptom in *Janu Sandhigata vata.*

In Ayurvedic classics several methods have been indicated which are employed in management of pain. In general *raktamokshana* has been indicated in several conditions including *vatavyadhis like vatakantaka*[3]. Therefore J*alaukavacharana* and *Rasanachoorna lep*a was selected to manage the *vedana* in *Janusandhigata vata* more acutely and effectively.

MATERIALS AND METHODS

Study Design

A comparative clinical study

Research Design

Total 40 patients were assigned into 2 groups, namely A and B consisting of 20 patients in each group. Data were collected and a comparative clinical study was conducted.

Inclusion Criteria

- Patients of either sex between the ages of 40-70 years were selected.
- Both fresh and treated cases were selected.
- Patients with symptoms of *Janu Sandhigata vata* were selected.

Exclusion Criteria

- Patients with Rheumatoid arthritis, Rheumatic fever were excluded.
- Patients suffering from bleeding disorder were excluded.
- Patients suffering from systemic disorders which would decline the general condition of the patient and interfere with course of treatment were excluded.

Diagnostic Criteria

- Based on signs and symptoms of shoola and shota in janu sandhi.
- Radiological confirmation whenever necessary

Investigations

- X-ray was done when necessary

Intervention

Group A

- *Jalaukavacharana*[4] for 3 sittings, applied at the site of severe pain of the janu(anterior aspect)..

Group B

- *Rasanachoorna lepa*[5] (mixed with hot water) for 30 minutes for 1 week Follow up was done after every 15days of treatment.

Methods of Assessment of Treatment

The results were assessed on the basis of WOMAC Osteoarthritis index.[6]WOMAC

Sl.No.	Details	1st	7th
01	Pain walking		
02	Pain – Stair climbing		
03	Pain – Nocturnal		
04	Pain – Rest		
05	Pain – Weight bearing		
06	Morning Stiffness		
07	Stiffness occurring – day		
08	Level of Difficulty		
09	Descending stairs		
10	Ascending stairs		
11	Rising from sitting		
12	Standing		

13	Bending to the floor		
14	Walking on flat		
15	Getting in / out of bed		
16	Sitting		
17	Getting on and off toilet		
18	Heavy domestic duties		
	Grand total		

Overall assessment was done on basis of following criteria

- Complete relief – Score reduced to 0
- Marked improvement – Reduction in score between 41-60 points
- Moderate improvement – Reduction of score between 21-40 points
- Slight improvement – Reduction in score between 0-20 points

RESULTS AND OBSERVATION

Showing the Nature of Pain

Nature of Pain	Group A	Group B	Total
Severe	20	18	38 (95%)
Mild	00	02	2 (5%)
Total	20	20	40 (100%)

Majority of patients, ie., 38 (95%) of them had severe pain while only 2 (5%) of them had mild pain.

Results on Overall Improvement

Gradings	Group A	Group B	Total	Overall %
Slight improvement (Reduction in score by 0-20 points)	2	11	13	32.5 %
Moderate improvement (Reduction in score by 21-40 points)	14	09	23	57.5%
Marked improvement (Reduction in score by 41-60 points)	03	00	03	7.5%
Complete Remission (Score reduced to 0)	01	00	01	2.5%
Total	20	20	40	100%

The overall result suggest that there was moderate improvement in 57% of patients ie., 23 of them, followed by slight improvement in 32% patients ie., 13 of them, 8% patients ie., 3 of them had marked improvement, all of them belonged to Group A and finally 3% ie., only one patient had complete relief. He too belonged to Group A.

DISCUSSION

Maximum number of patients were among 61-70 years group which again proves that degeneration with age as one of the prime pathology of OA. Most of the patients were treated (33 cases) and very few cases were fresh(7cases). The chronicity among the treated was very high. This shows that since pain is the predominant symptom among the patients they approach the physician for early treatment. Greater number of patients belonged to the group between 61-70 kg. They were all over weight in comparison to their height. Therefore this goes to prove the fact that overweight or obesity is one of the causes for *Janu Sandhigata vata*. Greater number of patients had a chronicity ranging 1-5 years and most of the remaining had more the 5 years of history. This shows the *yapya* nature of the disorder. It also showed that though patients approached for treatment they only preferred treatment working on pain rather than the pathology thus making disorder chronic[7].There was highly significant improvement in both groups. But according to WOMAC grading, Group A proved to be better than Group B. The difference in improvement between the groups too was seen to be highly significant Group A showed clear upper hand in all the parameters considered for the study. This observation showed the local effect of treatment pertaining to pain where the analgesic and anti-inflammatory effect was observed.

In Pain: In all 5 questions pertaining to pain Group A showed highly significant improvement(55.5%) while Group B showed highly significant improvement in 3 questions pertaining to pain and statistically significant improvement in 2 of them. In all cases of *Jalaukavacharana i*t was seen that pain came down drastically after the first

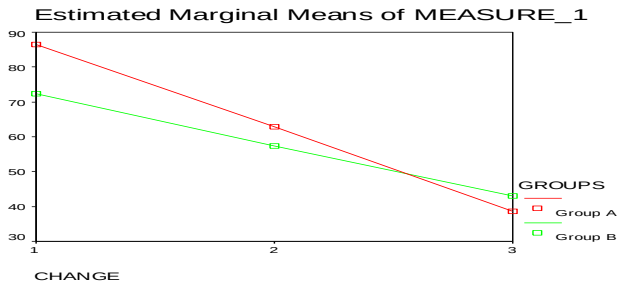
sitting. The analgesia was seen only after a gap of 1-2 days. There was maximum analgesia at the bite of site and about 2 cm radius. This was assessed by deep palpation at site of bite. The analgesic effect due to *Jalaukavacharana*[4]was restricted to site of bite but no generalized effect was seen. In *Jalaukavacharana* group there was progressive improvement with every sitting . The analgesia brought about was a motivating factor for the patients to come for next follow ups. After the duration of active treatment the decrement in pain remained the same throughout the study duration. The patients who came back for regular follow up after the study period too did not complaint of much pain for 1-2 months. The*lepa* group patients had slow but steady decrease in pain and analgesia once attained was seen to be distributed in all the areas within the treatment area. Though there was highly significant improvement statistically but patients were not completely satisfied with amount of relief in symptoms.WOMAC index question was used which showed highly significant improvement statistically.

Source and Mechanism of pain in OA[8]

Source		Mechanism
Synomium	-	Inflammation
Subchondral bone	-	Medullary HTN, Micro fracture
Osteophyte	-	Stretching of periosteal nerve endings
Ligament	-	Stretch
Capsule	-	Inflammation and distension
Muscle	-	Spasm

In Stiffness: It was seen that Group A showed highly significant improvement in 2 questions pertaining to stiffness but Group B showed insignificant improvement in one and statistically significant in the other. The reason for this could be that the ingredients in leech saliva has a cytolytic acting on the free and waste substances found in joint spaces which are contributory factors for stiffness. The other reason being the vasodilatory and anti-inflammatory action of leech saliva ingredients which bring about the decongestant action. The action in *Jalaukavacharana* group is faster because the saliva is directly injected into the site of pathology. The analgesic action as mentioned earlier is also one of the causes for betterment in stiffness. In *Rasanachoorna lepa* the drug action starts after absorption through epidermal tissues. The absorption of the *choorna* is minimal and is a slow process. The time consumed for absorption of *choorna* in sufficient quantity so as to bring about its action seems to be much more than the duration of active treatment employed in the procedure of treatment. Therefore there is a delayed action in the *Rasanachoorna lepa* group.

Overall Results



The above results shows significant difference between the groups with P value less than 0.001. The difference in improvement between the groups was highly significant with *Jalaukavacharana* group dominating over *Rasanalepa* group. Most patients in *Jalaukavacharana* group could avoid the oral analgesics for a long time after treatment while most in *Rasanalepa* group had to take recourse to analgesics. Overall assessment showed moderate and slight improvement in most of the patients but only Group A recorded 3 patients finding marked relief and 1 having complete remission. There was a significant difference between the groups with Group A showing better improvement in all aspects

MODE OF ACTION OF *JALAUKA*

The *Jalauka* used for the treatment has probably more than one mode of action[9] ,it can be discussed under a headings.

i) Due to blood sucking action

ii) Due to secretory action

List of Chemicals	**Action**
Apyrase	Inhibits platelets of blood clotting cells so that the blood does not clot and continue to flow.
Destabilase	Appear to actually dissolve blood clots and inhibits platelets
Hyaluronidase	Selectively breaks up tissue to allow the other chemicals in saliva to work, may also have anti-septic action.
Eglin	Inhibits inflammation so that leech can remain attached and the tissue does not get inflamed.
Bdellin	Inhibits the body's natural defense mechanism of dissolving invading protein,
Lipases	Enzymes that dissolve fat.
Hirudin	This acts by inhibiting the action of thrombo kinase. It inhibits the platelet aggregation and thus the coagulation cascade.
Vasodilators	Keeps the blood vessels dilated so that the leech can continue to feed on the blood

Acharya Vagbhata while explaining above *Varna, shopha* mentions that in cases of *vedanayukta* conditions ,*Jalauka* is specifically indicated. This also shows that *Jalauka* is beneficial in painful condition.[9] ,[10]

MODE OF ACTION OF *RASANA CHOORNA*.[11]

Botanical name – *Pluchea lanceolata*.

The stem, rhizome and leaves of the plant are used. The plant is greatly used in treating neurological and skin lesions by using its anti-inflammatory and muscle relaxant property. The plant contains Moretenol, moretenol acetate hexacosanoic acid and tetracosanoic acid along with many secondary metabolites. With proper isolation of the active priniciple, it acts by its anti-arthritic and anti-inflammatory action. Plant derived drug serves as a prototype to develop more effective and less toxic medicine.

In *Jalaukavacharana*showed a upper hand,*Rasanachoornalepa* too was good in most questions pertaining to the above category.It was seen that among all the activities most patients complained of difficulty in getting up from squatting position. This complaint of the patients was bettered by *Jalaukavacharana* to a greater extent than *Rasanalepa*. A clear proportionality relation was seen between reduction in pain and stiffness with that of level of difficulty in performing various functions. This showed that pain and stiffness in patients influenced the ability of patients to work.

CONCLUSION

The *lakshanas of Sandhigata vata* mentioned in texts are very well appreciated in the patients. They correlate with the l*akshanas* of osteoarthiritis.The application of *Rasanachoorna lepa* did serve as an important *upashaya* in most cases during the study. *Jalaukavacharana* produced better analgesia compared to *Rasanachoorna lepa. Jalaukavacharana* produced better result in obese patients.The analgesic effect of *Jalaukavacharana* lasted longer than that produced by *Rasanachoorna lepa. Rasanachoorna lepa* took longer duration to bring about analgesia compared to *Jalaukavacharana. Jalaukavacharana and* lepa can be performed on OPD basis and therefore can be implemented in clinical practice. The analgesic effect of Jalauka can be tried in varied conditions dominated by pain like vatakantaka, vishvachi.

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