



## Research Article

### A COMPARATIVE STUDY ON AGNIKARMA AND INDIGENOUS DRUGS IN THE MANAGEMENT OF JANU SANDHIGATA VATA W.S.R. TO OSTEOARTHRITIS OF KNEE JOINT

Shubham Puri<sup>1</sup>, B. S. Savadi<sup>2\*</sup>

\*<sup>1</sup>PG Scholar, <sup>2</sup>Professor, Department of Post Graduate Studies in Shalya Tantra, S.J.G Ayurvedic Medical College & Hospital, Koppal, Karnataka, India.

#### ABSTRACT

*Sandhigatavata* is the most common joint disorder worldwide. *Sandhigatavata* is a *Vatavyadhi* affecting people in the *Vardhakyavastha*. The disease is characterized by *Dhatukshaya* and *Lakshanas* reflective of vitiated *Vata*. Therefore, the agents / therapies which are *Vatahara*, *Shoolahara* and *Stambhahara* properties should be advised in this disease. The study is focused on rectification of vitiated *Vayu* by *Agnikarma* and internal medication which helps to subside the *Rooksha* and *Sheetaguna* of *Vata*. **Objectives:** The study is aimed to evaluate the efficacy of Indigenous drugs (*Indravaruni*, *Pippaali* with Jaggery) in the management of *Janusandhigatavata* and to compare the effects of *Agnikarma* and Indigenous drugs in management of *Janusandhigatavata*. **Method:** The present study is 'Comparative clinical trial'. Study was done in two groups. In this study, *Agnikarma* received group of patients were compared with orally treated group of patients. **Result:** Comparatively both the groups have almost same significance in the parameters. In terms of two parameters especially in pain and range of movements, *Agnikarma* treated patients showed very good result. **Interpretation:** On the basis of the results of both the groups it was observed that, both the groups have almost same significance in the parameters. But Group-B shows more net mean effect and long lasting effect even in follow-up period. With respect to the parameters in pain and in range of movements, *Agnikarma* treated patients showed very good response. **Conclusion:** *Agnikarma* was found very effective in the management of *Janusandhigatavata*.

**KEYWORDS:** *Agnikarma*, *Pippaali*, *Indravaruni*, *Sandhigatavata* Osteoarthritis, *Rajat Shalaka*.

#### INTRODUCTION

Osteoarthritis is disorder of synovial joints. It is characterized by progressive degenerative changes in the articular cartilages over the years, particularly in the weight bearing joints. Due to pain and swelling, the mobility of joints is restricted (*Stambha*), and on movement results in excruciating pain (*Prasarana Akunchanayoho Vedana*), which becomes unbearable even on mild touch in the form of tenderness (*Sparsha Asahyata*).<sup>[1]</sup>

The treatment of *Sandhigata Vata* should be aimed at minimizing pain, optimizing function and reducing disability. The line of treatment told by *Acharayas* for the management of *Sandhigata Vata* is to use *Vatashamana Chikitsa*.<sup>[2]</sup>

Among them *Agnikarma* due to its *Ushna Guna* eliminates the vitiated *Vata Dosha* and there is no fear of petrification and bleeding, and ultimately it produces balancing effect on vitiated *Vata Dosha*.<sup>[3]</sup> *Acharyas* clearly mentioned that the *Vata* which is localized in *Sandhi* destroys the actions of the joints and give rise to pain and swelling in them.<sup>[4]</sup>

*Agnikarma*, for the treatment of *Vata* vitiated in *Snayu* and *Sandhi* is clearly mentioned in classics. The compound formulation selected for the study is taken from *Bhavprakash Chikitsaprakran*.<sup>[4]</sup>

It is necessary to have safe, effective, economic, patient friendly treatment modality in present era. Hence in this study an attempt is made to evaluate and compare the effect of *Agnikarma* and Indigenous drugs in *Janu Sandhigata Vata* w.s.r. to Osteoarthritis of knee.

#### Objectives of the Study

- To review the literature related to *Sandhigatavata* as well as osteoarthritis.
- To evaluate the efficacy of Indigenous drugs (*Indravaruni*, *Pippaali* with Jaggery) in the management of *Janusandhigatavata*.
- To evaluate the effect of *Agnikarma* and its role in *Janusandhigatavata*.
- To compare the effects of *Agnikarma* and Indigenous drugs in management of *Janu-*

*sandhigatavata.*

## Historical Review

Acharya Charaka described it as *Sandhi-Gata-Anila*, which is a synonym of *Sandhigata Vata* in the chapter *Vatavyadhi Chikitsa*. He explained this condition under the "*Sthana Bheda Vayu Lakshana*".<sup>[5]</sup> *Sandhigata Vata* is not directly mentioned under *Vataja Nanatmaja Vikara* but condition "*Janu Bheda*" is mentioned. That can be compared with *Janu Sandhigatavata*.<sup>[6]</sup>

Acharya Sushruta explained *Lakshanas* of *Sandhigatavata* in *Nidanasthana* in *Chikitsa Sthana* specific line of treatment has been mentioned as, description is similar to *Sushruta Samhita*. Both the texts haven't dealt with the aspect of *Nidana*. But they have given importance to *Upakramas* like *Upanaha*, *Agnikarma*, *Bandhana*, *Snehana* and *Unmardana*.<sup>[7]</sup>

## MATERIALS AND METHODS

In this work the main aim was to evaluate the comparative efficacy of oral Indigenous Drugs and *Agnikarma* with *Rajat Shalaka* in *Janusandhigatavata* W.S.R. OA of Knee joint.

After the completion of the full treatment, the results were assessed by comparing the before treatment data with the after treatment data.

### Exclusion criteria

- Patients with any systemic diseases like DM, HTN, TB, Pregnancy, HIV.
- Patients below the age of 40 yrs and above the age of 60 yrs.
- Contra-indication of *Agnikarma*.
- Secondary arthritis
- Patients on steroid therapy
- Patient undergone surgery
- Systemic disorders
- Any injury/trauma

### Inclusion criteria

- Patients presenting with classical *Lakshanas* of *Janu Sandhigata Vata*
- Patient with either sex age group between 40 yrs and 60 yrs

### Subjective Parameters:

- Janusandhi Shula(pain)
- Stambha(stiffness)
- Range of movements

### Objective Parameters:

- *Shotha*(swelling)
- *Sandhiaatopa*(crepitation)

## Research Design

Comparative clinical trial was conducted. The patients were assigned in to 2 equal groups. i.e. Group-A-15 patients were received Oral Indigenous Drugs.

Group-B-15 patients were received *Agnikarma* with *Rajat Shalaka*.

The subjective and objective parameters were made out to assess the clinical response in both the groups and readings were taken before the procedure, after the procedure and after the follow-up period.

### Grading of parameters

The results were evaluated by observing subjective and objective parameters by grading method. The grading was done in the following manner.

#### Subjective Parameters

##### *Janusandhi Shula* (pain)

- Grade 0 – No complaints
- Grade 1 – tells on enquiry
- Grade 2 – complaints frequently
- Grade 3 – excruciating condition

##### *Stambha*(stiffness)

- Absence of stiffness -Grade 0
- Stiffness of joint < 30 minutes – 1
- Stiffness of joint > 30 minutes – 2
- Total loss of joint movement grade - Grade - 3

##### Range of movements using goniometer

- Angle of flexion Grade Normal flexion 130'- 0
- Lesser than 130 & more than 100'-1
- Lesser than 100' & more than 75'-2
- Lesser than 75'--3

#### Objective Parameters

##### *Shotha*(swelling)

- Grade 0 – No complaints
- Grade 1 – slightly oblivious
- Grade 2 – covers well over the bony prominence
- Grade 3 – much elevated

##### *Sandhiaatopa* (crepitation)

- Grade 0 – None
- Grade 1 – mild on examination
- Grade 2 – felt/ heard
- Grade 3 – heard (pt c/o of sound from the knee joint)

## Observation and Results

In the present clinical study subjective and objective changes were considered for the assessment of Ayurvedic management of *Janu Sandhigatavata* by various treatments like oral medication and *Agnikarma*. Thirty patients were selected and divided 15 patients in each Group. For Group-A patients, oral indigenous drug compound was administered and for Group-B patients received *Agnikarma* with *Rajat shalaka*.

**Table 1: Results of Group-A i.e. of Oral Group A**

Remarks	No. of patients	%
Good response	01	07
Marked response	07	47
Moderate response	06	40
Mild response	01	06
No response	00	00

In Group-A, Among 15 (100%) patients, 1 (07%) patients got good response, 7 (47%) patients got marked response and 6 (40%) patients were responded moderately, 1 patient got mild response, no patient were found as no response.

**Table 2: Results of Group-B i.e., of Agnikarma Group**

Remarks	No. of patients	%
Good response	04	27
Marked response	09	60
Moderate response	02	13
Mild response	00	00
No response	00	00

**Table 4: Showing the Statistical Analysis of parameters of Group-A**

Group A	Mean		Change %	±SD	±SE	T	P
	B.T.	A.T.					
Janusandhi Shula (Pain)	2.27	1.13	50.00	0.52	0.13	8.50	<0.001
Stambha (stiffness)	1.27	0.60	52.63	0.62	0.16	4.18	<0.01
Range of movements	1.53	0.80	47.83	0.46	0.12	6.20	<0.001
Shoatha (swelling)	1.60	0.87	45.83	0.59	0.15	4.78	<0.001
Sandhiatopa (crepitation)	1.60	0.73	54.17	0.35	0.09	9.54	<0.001

**Statistical conclusion**

To compare the mean effect of parameters after treatment, statistical analysis is done by using paired t-test by assuming that, the mean effect of all the parameters are same in group.

Here the parameters like- Pain, Range of Movements, Swelling and Crepitation are shown highly significant as  $p < 0.001$ . The parameter stiffness showed significant as  $p < 0.01$ .

**Table 5: Showing the Statistical Analysis of Parameters of Group-B**

Group B	Mean		Change %	±SD	±SE	T	P
	B.T.	A.T.					
Janusandhi Shula (Pain)	2.27	0.80	64.71	0.52	0.13	11.00	<0.001
Stambha (Stiffness)	1.13	0.47	58.82	0.62	0.16	4.18	<0.01
Range of Movements	1.53	0.47	69.57	0.59	0.15	6.96	<0.001
Shoatha (Swelling)	1.53	0.60	60.87	0.88	0.23	4.09	<0.01
Sandhiatopa (Crepitation)	1.53	0.60	60.87	0.80	0.21	4.53	<0.001

**Statistical conclusion**

To compare the mean effect of parameters after treatment, statistical analysis is done by using paired t-test by assuming that, the mean effect of all the parameters are same in group.

Here the parameters like- Pain, Range of Movements, and Crepitation are shown highly significant as  $p < 0.001$ . The parameters like Stiffness and Swelling are shown significant as  $p < 0.01$ .

In Group-B, Among 15 (100%) patients, 4 (27%) patients got good response, 9 (60%) patients got marked response and 02 (13%) patients were responded moderately, no patient were found as no response and mild response.

**Table 3: Showing the Overall Assessment**

Remarks	No. of patients	%
Good response	05	17
Marked response	16	53
Moderate response	08	27
Mild response	01	03
No response	00	00

Among total of 30 patients, 05 (17%) got good response, 16 patients (53%) got marked response and 08 patients (27%) were responded moderately, 1 (03%) patient got mild response and none of patients got no response.

**Table 6: Showing the Statistical Analysis of inter Group comparison**

AT	Group A				Group B				T	P
	N	Mean	± S.D.	±SE	n	Mean	± S.D.	±SE		
<i>Janusandhi shula</i> (pain)	15	1.13	0.35	0.09	15	0.80	0.77	0.20	1.52	>0.05
<i>Stambha</i> (Stiffness)	15	0.60	0.51	0.13	15	0.47	0.52	0.13	0.71	>0.05
Range of movements	15	0.80	0.41	0.11	15	0.47	0.52	0.13	1.95	>0.05
<i>Shotha</i> (swelling)	15	0.87	0.52	0.13	15	0.60	0.63	0.16	1.26	>0.05
<i>Sandhiatopa</i> (Crepitation)	15	0.73	0.59	0.15	15	0.60	0.63	0.16	0.60	>0.05

**Statistical conclusion**

To compare the mean effect of 2 Groups, the 'un-paired t'- test is used, by assuming that; the mean effect of 2 Groups after the treatment is same. From the analysis, all the Subjective parameters and Objective parameters are shows in- significant (non Significant), as 'p>0.05'.

On the basis of the results of both the groups it was observed that, comparatively both the groups have almost same significance in the parameters. But Group-A shows more net mean effect and long lasting effect even in follow-up period and group B shows less variations.

**Table 7: showing intergroup comparisons based on mean AT**

AT	Group 'A' Mean	Group 'B' Mean
<i>Janusandhi shula</i> (pain)	1.13	0.80
<i>Stambha</i> (stiffness)	0.60	0.47
Range of movements	0.80	0.47
<i>Shotha</i> (swelling)	0.87	0.60
<i>Sandhiatopa</i> (crepitation)	0.73	0.60

**Table 8: Showing the individual study of Group-A (BT to AF)**

Group A	Mean		Change %	±SD	±SE	T	P
	B.T.	A.F.					
<i>Janusandhi shula</i> (pain)	2.27	0.93	58.82	0.82	0.21	6.32	<0.001
<i>Stambha</i> (stiffness)	1.27	0.47	63.16	0.77	0.20	4.00	<0.01
Range of movements	1.53	0.73	52.17	0.41	0.11	7.48	<0.001
<i>Shotha</i> (swelling)	1.60	0.80	50.00	0.56	0.14	5.53	<0.001
<i>Sandhiatopa</i> (crepitation)	1.60	0.67	58.33	0.46	0.12	7.90	<0.001

**Statistical conclusion**

To compare the mean effect of parameters after treatment, statistical analysis is done by using paired t-test by assuming that, the mean effect of all the parameters are same in group.

Here the parameters like- Pain, Range of Movements, Swelling and Crepitation are shown highly significant as p<0.001. The parameter stiffness showed Significant as p<0.01. This shows that, the treatment is having long-lasting result.

**Table 9: Showing the individual study of Group-B (BT to AF)**

Group B	Mean		Change %	±SD	±SE	T	P
	B.T.	A.F.					
<i>Janusandhi shula</i> (pain)	2.27	0.53	76.47	0.46	0.12	14.67	<0.001
<i>Stambha</i> (stiffness)	1.13	0.33	70.59	0.68	0.17	4.58	<0.001
Range of movements	1.53	0.47	69.57	0.59	0.15	6.96	<0.001
<i>Shotha</i> (swelling)	1.53	0.53	65.22	0.76	0.20	5.12	<0.001
<i>Sandhiatopa</i> (crepitation)	1.53	0.53	65.22	0.76	0.20	5.12	<0.001

**Statistical conclusion**

To compare the mean effect of parameters after treatment, statistical analysis is done by using paired t-test by assuming that, the mean effect of all the parameters are same in group.

In Group-B; the subjective parameters like- Pain, Stiffness, Range of Movements and objective parameters like Swelling and Crepitation are shown highly significant as  $p < 0.001$ . This analysis clearly shows that *Agnikarma* is giving long lasting effect even after follow up; results are significantly sustained.

**Table 10: showing intergroup comparison based on mean AF**

AF	Group 'A' Mean	Group 'B' Mean
<i>Janusandhi Shula</i> (Pain)	1.13	0.80
<i>Stambha</i> (Stiffness)	0.60	0.47
Range of Movements	0.80	0.47
<i>Shohta</i> (Swelling)	0.87	0.60
<i>Sandhiatopa</i> (Crepitation)	0.73	0.60

**Table 11: showing intergroup comparison based on mean BT, AT & AF**

Group A	Mean B.T.	Mean A.T.	Mean A.F.
<i>Janusandhi Shula</i> (Pain)	2.27	1.13	0.93
<i>Stambha</i> (Stiffness)	1.27	0.60	0.47
Range Of Movements	1.53	0.80	0.73
<i>Shohta</i> (Swelling)	1.60	0.87	0.80
<i>Sandhiatopa</i> (Crepitation)	1.60	0.73	0.67

**Table 12: showing mean values of Agnikarma group BT; AT & AF**

Group B	Mean B.T.	Mean A.T.	Mean A.F.
<i>Janusandhi shula</i> (pain)	2.27	0.80	0.53
<i>Stambha</i> (stiffness)	1.13	0.47	0.33
Range of movements	1.53	0.47	0.47
<i>Shohta</i> (swelling)	1.53	0.60	0.53
<i>Sandhiatopa</i> (crepitation)	1.53	0.60	0.53

**DISCUSSION**

Osteoarthritis is degenerative disorder so age is the most deciding risk factor for Osteoarthritis. As the age increases, chances radiological evidence of Osteoarthritis in the joints also increases.

The *Chikitsa* of *Sandhigatavata* in *Ayurvedic* texts bend towards *Vatanashak* therapies. Procedures like *Snehana*, *Swedana* and *Agnikarma* are found to be very promising. *Ayurveda* has list of variety of *Vatashamak Vatis*, *Rasas*, *Kwathas*, *Churnas* and *Asava-Arista* having *Vatashamak* properties. Promising results can be obtained, followed by educating patient regarding *Pathyas* and *Apathyas*. *Ayurveda* believes in balancing of *Doshas* to generate health. Following this principle and after that choosing best suitable treatment modality according to condition of patient can deliver higher success rate in management of *Janusandhigatavata*.

Patients categorized in group A got 59% decrease in pain, which is a significant change. Patients belonging to group B treated with *Agnikarma* therapy got 76% decrease in pain. It is clear that *Agnikarma* provides better relief in terms of parameter like pain. While observing the patient

during treatment I observed that many patients belonging to *Agnikarma* group described immediate relief and decrease in pain where patients belonged to orally treated group described gradual reduction in pain. Patient belonged to *Agnikama* Group looked more satisfied in terms of parameter like pain.

*Agnikarma* is known for virtue of its *Dosha Shamaka* efficacy, which is used to correct the vitiated *Dosha* to maintain the *Tri-Doshik* equilibrium and that is the main aim of therapy. *Agni Karma* is stated in classics' as the ultimate therapy for those disorders which are not curable with other measure. *Janusandhigata Vata* is produced by vitiated *Vata Dosa* with *Anubandha* of *Kapha*. So *Agnikarma* is considered as best therapy to pacify these *Doshas*. Because *Agni* possesses *Usna*, *Tiksna*, *Suksma*, *Asukari Guna*, which are anti *Vata* and anti *Kapha* properties. *Agnikarma* was done by *Rajata Shalaka*. Silver is one of the best conductors of both electricity and heat. The character of physical heat of hot *Shalaka* transferred as therapeutic heat to *Twak Dhatu*.

Therapeutic heat increase the *Dhatwagni*, so metabolism of *Dhatu* is proper and digest the *Ama*

*Dosa. Janu Sandhi* gets proper nutrition from *Purva Dhatu* and *Asthi, Majja Dhatu* become more stable. Patients relieve from all symptom.

Therapeutic heat goes to deeper and neutralized the *Sita Guna* of *Vata* and *Kapha Dosa*. Vitiated *Dosa* becomes comes to equilibrium phase and patient relieve from symptom.

### CONCLUSION

- *Janu Sandhigatavata* can be correlated with Osteoarthritis (Knee Joint) of contemporary science.
- *Pippali* and *Indravaruni* both are having good capacity to reduce the symptoms of O.A. of knee joint if taken with Jaggery as *Anupana*.
- Modified adoption of *Agnikarma* with *Rajat Shalaka* has given very promising result specially by decreasing pain which is one of the cardinal features of *Janusandhigatavata*.
- In both groups Group-A and Group-B; the subjective parameters like- Pain, Stiffness, Range of Movements and objective parameters like Swelling and Crepitation are shown highly significant as  $p < 0.001$ .
- In both the Groups, among 15 patients in each group, 5 patients (17%) got good response (more than 75% improvement in all the parameters) and 16 patients (54%) got marked response (51-75% improvement in all the parameters), 8 patients (27%) got moderate response (26-50% improvement in all the parameters) only 1 patient (4%) got mild response (below than 25% improvement in all the parameters), none of patient found as no response.
- Comparatively both the groups have almost same significance in the parameters. In terms of two parameters especially in pain and range of movements, *Agnikarma* treated patients showed very good result.
- Both are the safe treatments so, no complications were observed in this study.
- *Agnikarma* was found very effective in the

management of *Janusandhigatavata*.

- The study can be conducted for a longer duration so as to know the lasting results of the clinical effects.

### REFERENCES

1. Acharya Jadhavaji Trikamaji, Susruta, SusrutaSamhita, with commentary of Dalhana, 9th edition Chaukhambha Orientalia Varanasi, 2009, pp824, Nidanasthana chap-1, slg- 28, pg-261.
2. Acharya Jadhavaji Trikamaji, Susruta, Susruta Samhita, with commentary of Dalhana, 9th edition Chaukhambha Orientalia Varanasi, 2009, pp824, Chikitsa Sthana Chapter- 4, Slg-8, Pg-420.
3. Bhisagratna Pandit Sri Brahma Sankara Mishra, Sri Bhavamisra, Bhavaprakash, with Vidyotini Hindi Commentary, Varanasi: Choukambha Sanskrit Samsthan, 7th edition, Bhavprakashashya Madhyamkhand Chikitsaparakarnam Vatavyadhirogadhikar, Chapter-24/259, Page-265.
4. Vaidya Jadavaji Trikamaji Acharya edited Charaka Samhita, Sutra Sthana, Chapter 20, Shloka No.11, Edition: Reprint 2008, Pub: Chaukhamba Surbharati Prakashan, K.37/117, Gopal Mandir lane, Post box No.1129, Varanasi (UP), Page No 113.
5. Dr. Shivprasad Sharma edited Astanga Sangraha, Chikitsa Sthana, Chapter 23, Shloka No.11, Edition: First 2006, Pub:Chowkhamba Sanskrit Series Office, K.37/99, Gopal Mandir lane, Post box No.1008, Varanasi (UP), Page No.565.
6. Prof. Priyavrat Sharma edited Bhela Samhita, Chikitsa Sthana, Chapter 24, Shloka No.48-49, Edition: Reprint 2005, Pub: Chaukhamba Visvabharati, Oriental Publishers and Distributer, Post Box No. 1084, K.37/109, Gopal Mandir Lane, Varanasi (UP), Page No.455.
7. Shree Govardhana Sharm edited, Basavarajeeyam, chapter 6th Pub:Choukamba Vidyabhavan, Varanasi; 1984 Page no .106.

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#### \*Address for correspondence

**Dr B.S.Savadi**

Professor,

Department of Post Graduate

Studies in Shalya Tantra, S.J.G

Ayurvedic Medical College &

Hospital, Koppal, Karnataka, India.

Email: [savadi.savitha@gmail.com](mailto:savadi.savitha@gmail.com)

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