A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF SHATAVHADI TAILA MATRABASTI WITH AND WITHOUT SHASTHIKASHALI PINDA SWEDANA IN THE MANAGEMENT OF JANUSANDHIGATAVATA W.S.R. TO KNEE JOINT OSTEOARTHRITIS

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Abstract

Background: *Sandhigatavata* is one among the *Vatavyadhi (*disease) mentioned in Ayurveda classics. *Sandhigatavata* can be compared with Osteoarthritis of contemporary medical science. *Basti karma* and *Shasthikashali Pinda swedana* are said to be the most effective treatment modalities to treat *Vatavyadhi*. Here an attempt was made to assess the effect *Satavhaditaila matrabasti* with and without Shasthikashaali pinda swedana in Sandhigatavata.

Methods: It is a comparative clinical trial. The study was conducted on 30 patients divided into Group A and Group B having 15 patients each. Group A patients were treated with 80 ml of *Shatavhaditaila matrabasti* along with *Shasthikashali Pinda swedana* for 10 days. The assessment parameters were noted before the treatment and after follow up(60th day). To assess the results, un paired and paired t test statistical analysis methods were used.

Results: Group *A Shatavhaditaila matrabasti* along with *Shasthikashali Pinda swedana* is found to be more effective as compared to Group B

Key Words: *ShatahvadiTaila, Matrabasti, Sandhigata vata,* Osteoarthritis

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Introduction:

Sandhigatavata is a type of *Vatavyadhi* characterized by *vatapurnadrutisparsha, Shotha, Vedana* during *Prasarana* and *Akunchana* [1]. Sandhigatavata is the most common form of joint disorder which occurs in old aged people and it affects functions of the joints especially weight bearing joints like knee joint. *Sandhigatavata* can be compared with Osteoarthritis(OA) of contemporary medical science. In India among 1,065,070,607 people 78,314,013 are suffering from osteoarthritis. Nearly, 45% of women over the age of 65 years have symptoms while radiological evidence is found in 70% of those over 65 years. OA of the knee is a major cause of mobility impairment, particularly among females. OA was estimated to be the 10th leading cause of nonfatal burden. [2]

Acharya *Bhavamishra* while explaining *Vatavyadhi* explained about *Sandhigatavata* [3]. Acharya Sushruta [4] and Madhavakara5 have added *Sandhi Shoola, Atopa, Sandhi Hanti*.
The trouble of *Sandhi* by *PrakupitaVata* is the main phenomenon in *Samprapti* of *SandhigatVata*. *Sandhis* come under the *MadhyamaRogaMarga* and thus, involvement of *MadhyamaRogaMarga, VataDosha* and *Dhatukshaya* figures disease *KashtaSadhya*. In this point of view, Ayurveda has a unique approach to cure i.e. two fold strategies comprising of 1) *Samshodhana* or Bio purification by Panchakarma therapy & related measures. 2) *Samshamana* or Palliation of imbalances by appropriately planned diet, drug, & lifestyle interventions.

In Ayurveda, all Acharyas have given prime importance to Snehana Chikitsa in the management of Sandhigatavata. Snehana can be performed both Bahya and Abhyantara[6]. Bahya snehana include abhyanga, tarpana, murdhni taila etc and Abhyantara snehana include bhojana, pana, nasya and Anuvasan Basti.Acharya Charaka has mentioned Shatahvadi Taila in the management of Vata diseases [7] Also there are references where it has been proved that Shasthikashali Pinda swedana in the management of Sandhigatavata. Hence in the present study, *Shatahvadi taila matrabasti* with and without Shasthikashali pinda swedana had been planned in the management of Sandhigatavata.

Aim and Objectives:
- To evaluate the effect of *Shatahvadi taila matrabasti* along with Shasthikashali Pinda Swedana in the management of *Jaanu Sandhigatavata.*
- To evaluate the effect of *Shatahvadi taila matrabasti* alone in the management of *Jaanu Sandhigatavata*
- To compare the effect of *Shatahvadi taila matrabasti* with and without Shasthikashali Pinda swedana in the management of *Jaanu Sandhigatavata*

Materials and Methodology:

Study Design: Double arm comparative clinical Study

Period of experimentation: Total 3 years

Date of commencement of study: 01/06/2019 and **date of completion of study:** 30/05/2022
CTRI id: CTRI/2019/06/019945

Sample selection method: Patients were selected randomly with symptoms of *Janusandhigatavata*

Selection of Patients:30 Patients were selected randomly with symptoms of *Janusandhigatavata* irrespective of sex, religion, age etc. from OPD and IPD Department of Panchakarma, Shri Veer Pulikeshi Rural Ayurvedic Medical College and Hospital, Badami. Patients were then subjected to detailed clinical history based on specially prepared case proforma. Then the patients were subjected to 80mlof *Shatahvadi taila matrabasti* and ShasthikashaliPinda swedana for10 days.

Study duration: Clinical assessment was done at baseline and after 60 days. Clinical Data obtained from the trial was analyzed with unpaired and paired t -test method & the results are presented.

Inclusion Criteria: -
1. Patients having textual symptoms of *Sandhigatavata – niramaavastha* with special reference to *janu sandhi* were taken as a subject to study.
- *Sandhi Shoola*
- *Sandhi Shotha*
- *Vatapurna Druti Sparsha*
- *Graha* (Restricted movement)
2. Patients who are fit for *matrabasti* and Shasthikashali Pinda swedana.
3. Patient who were ready to give written consent.

Exclusion Criteria:
1. Patients with other joints deformities or diseases which are not related to

JanuSandhigatavata, such as *Amavata, Vatarakta.*

2. Patient with rheumatic arthritis, tubercular arthritis, infective arthritis, syphilitic arthritis, gout, traumatic arthritis, and gonorrheal arthritis, fracture of Knee joint and those who needed surgical care were excluded.
3. Neoplasm
4. Permanent joint damage.
5. Known cases of Cardiac disease, Pulmonary TB, Pregnancy, DM, Paralysis, HIV, Neurological disorders.

6. Having severe crippling deformity.

Interventions:
Poorva karma:
Preparation of the patient:
The patient was clearly explained about the procedure and treatment was started only after he/she was convinced about the treatment. Above mentioned specific investigations were done apart from the routine investigations.

Group A	Group B
• *Sthanika Abhyanga* with *Moorchita Tilataila* and Shasthikashali Pinda swedana was performed over the affected knee joint.	• *Sthanika Abhyanga* with *Moorchita Tilataila* and nadi swedana was performed over the affected knee joint.
• Light meal was given to patient prior to Basti.	• Light meal was given to patient prior to Basti.

Pradhana karma: Administration of Matrabasti with Shatahvadi Taila (80 ml)

Paschat Karma : The patients were advised to avoid talking loudly, travelling, walking long distance, sitting in a single posture for long duration, eating unwholesome food, sleeping in day time and sexual activities.

Assessment Criteria
Assessment of the result was done based on the following grading.

Sandhishula **(Pain)**
  Grade
• No pain   0
• Mild pain   1
• Moderate pain but no difficulty in walking   2
• Severe pain and difficulty in walking   3
SparshaAsahyata **(Tenderness)**
  Grade
• No tenderness   0
• Patient feels tenderness   1
• Winching of face on touch   2
• Does not allow to touch the joint   3
Sandhigraha **(Stiffness)**
  Grade
• No stiffness   0
• Mild stiffness   1
• Moderate stiffness   2

• Severe stiffness   3
Sandhishotha **(Swelling)**
  Grade
• No swelling   0
• Mild swelling   1
• Moderate swelling   2
• Severe swelling   3
Sandhisphutana **(Crepitus)**
  Grade
• No crepitus   0
• Palpable crepitus   1
• Audible crepitus   2
Restriction of movement (ROM)
  Grade
• Absence of movement restriction.   0
• Restriction of movement <25%   1
• Restriction of movement 25% - 50%   2
• Restriction of movement > 50%   3
Visual Analogue Scale (VAS):
  Grade
• 0 cm.   0
• 1-3 cms   1
• 4-6 cms.   2
• 7-10 cms.   3

Observations and results:
Effect of the Treatment on different Parameters
1. Sandhi Shoola

Table 1: Showing Comparison of effect of Treatment on Parameter *Sandhi Shoola*

PARAMETER	GROUP	Mean (BT-AF)	% of improvement	SD	T-Value	P-Value	Remarks
Sandhi Shoola	A	1.66	60.8	0.61	3.22	<0.05	S
	B	1.13	43.46	0.35			

Graph 1: Showing Comparison of effect of Treatment on Parameter Sandhi Shoola
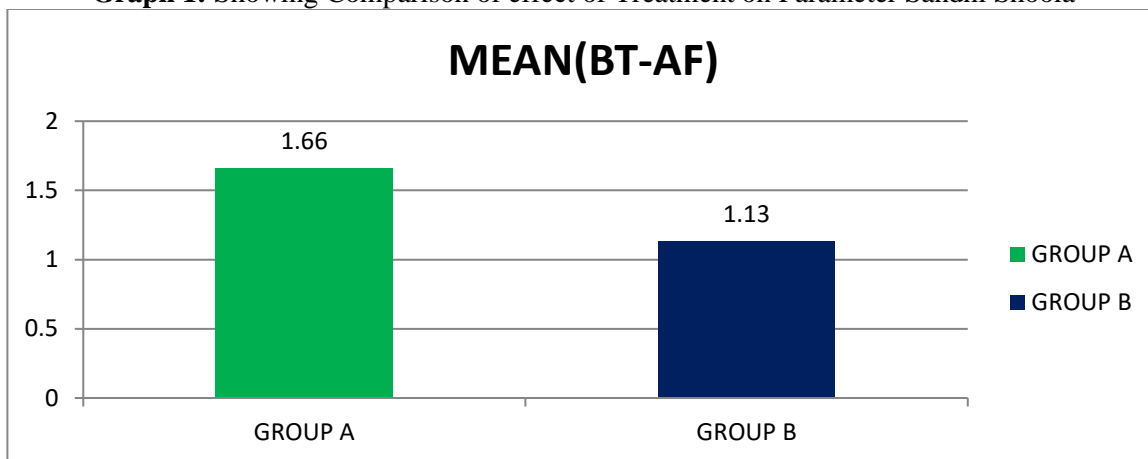
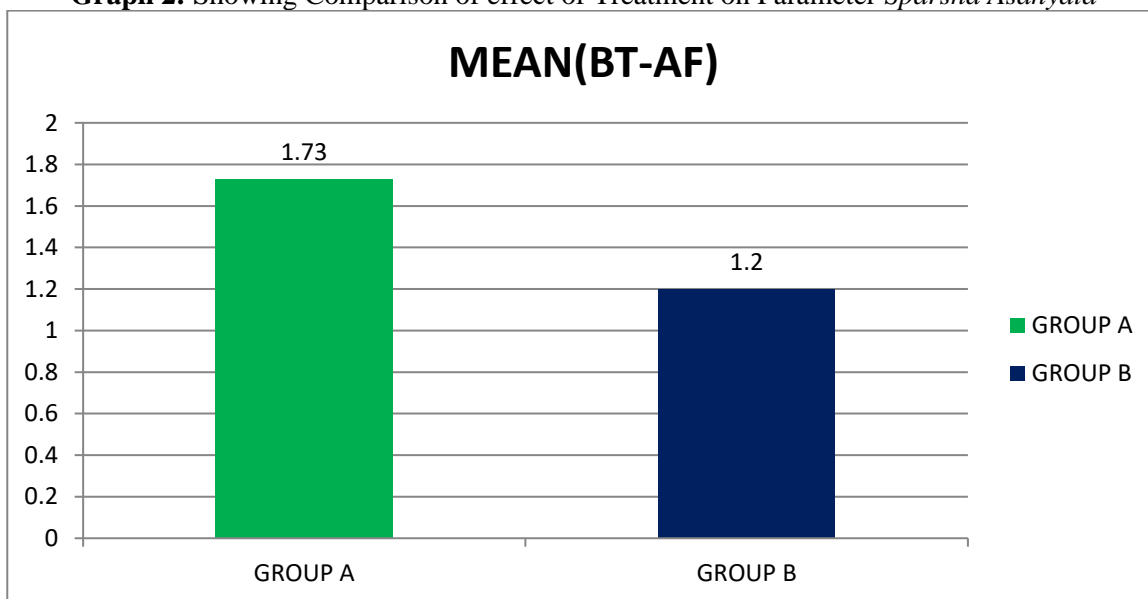From the above analysis it is clear that p value is less than the t value, so it can be concluded that the effect of both groups is not equal in treating the Sandhi shoola. Percentage of improvement of Group A(60.8%) is more than of group B(43.46%).

2. *Sparsha Asahyata*

Table 2: Showing Comparison of effect of Treatment on Parameter *Sparsha Asahyata*

PARAMETER	GROUP	Mean (BT-AF)	% of improvement	SD	T-Value	P-Value	Remarks
Sparsha Asahyata	A	1.73	48.05	0.45	2.25	<0.05	S
	B	1.2	35.29	0.67			

Graph 2: Showing Comparison of effect of Treatment on Parameter *Sparsha Asahyata*

From the above analysis it is clear that p value is less than the t value, so it can be concluded that the effect of both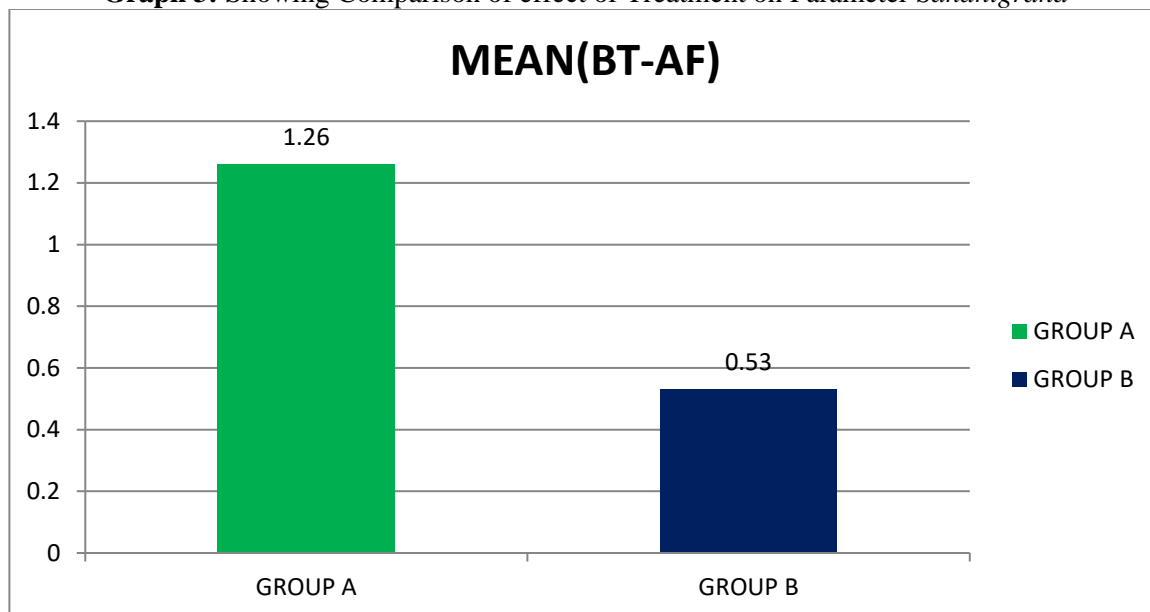 groups is not equal in treating the *Sparsha Asahyata*. Percentage improvement of Group A(48.05%) is more than of group B(35.29%).

3. *Sandhigraha*

Table 3: Showing Comparison of effect of Treatment on Parameter *Sandhigraha*

PARAMETER	GROUP	Mean (BT-AF)	% of improvement	SD	T-Value	P-Value	Remarks
Sandhigraha	A	1.26	75.9	0.70	2.75	<0.05	S
	B	0.53	54	0.51			

Graph 3: Showing Comparison of effect of Treatment on Parameter *Sandhigraha*

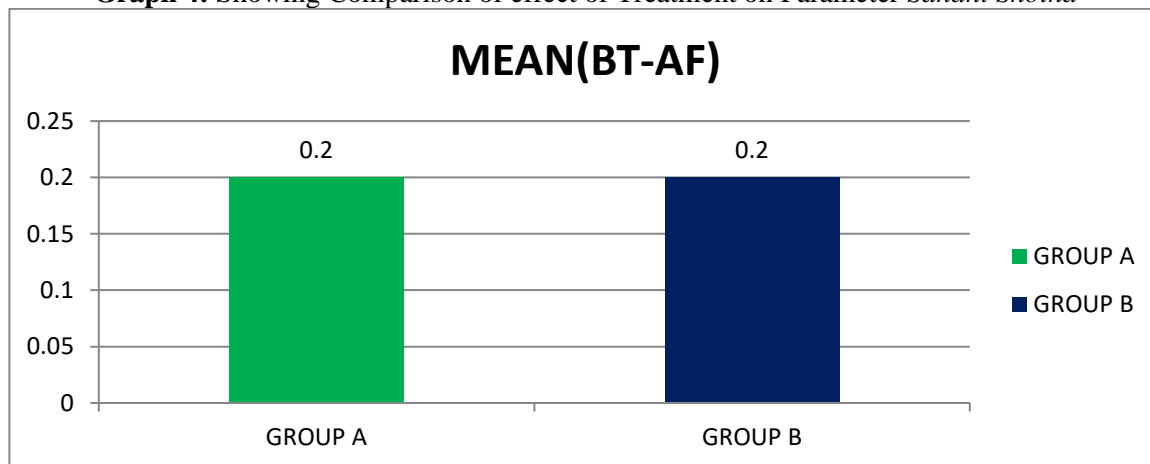From the above analysis it is clear that p value is less than the t value, so it can be concluded that the effect of both groups is not equal in treating the Sandhigraha. Percentage improvement of Group A(75.9%) is more than of group B(54%).

4. Sandhi Shotha

Table 4: Showing Comparison of effect of Treatment on Parameter *Sandhi Shotha*

PARAMETER	GROUP	Mean (BT-AF)	% of improvement	SD	T-Value	P-Value	Remarks
Sandhi Shotha	A	0.2	25	0.41	0	>0.05	**NS**
	B	0.2	27.39	0.41			

Graph 4: Showing Comparison of effect of Treatment on Parameter *Sandhi Shotha*

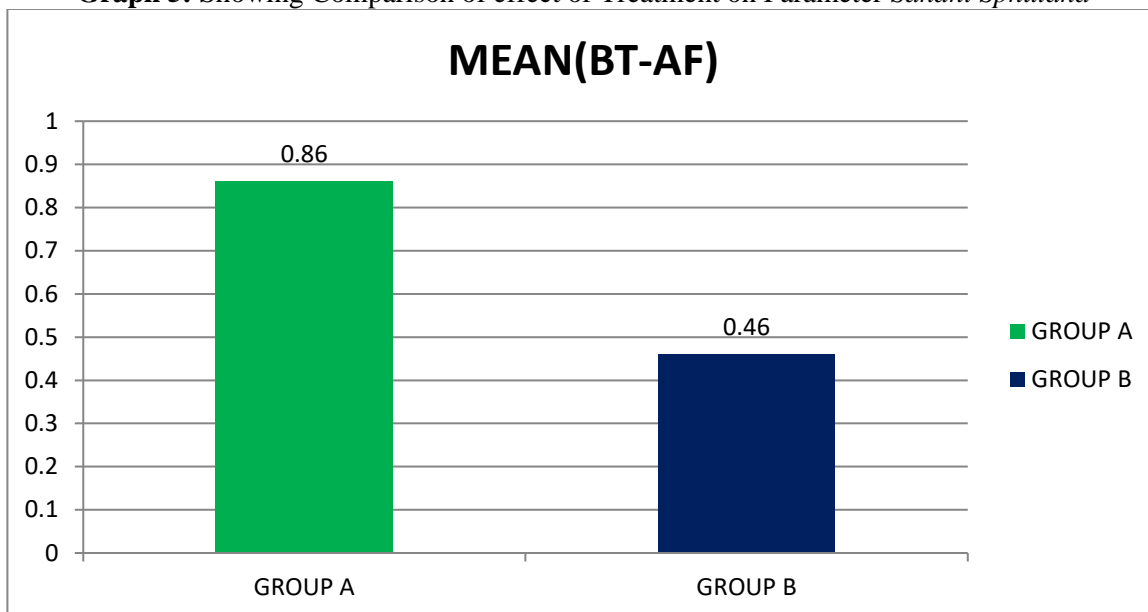From the above analysis it is clear that p value is higher than the t value, so it can be concluded that the effect of both groups are equal in treating the Sandhi shotha. Percentage improvement of Group B(27.39%) is more than of group A(25%).

5. Sandhi Sphutana

Table 5: Showing Comparison of effect of Treatment on Parameter *Sandhi Sphutana*

PARAMETER	GROUP	Mean (BT-AF)	% of improvement	SD	T-Value	P-Value	Remarks
Sandhi Sphutana	A	0.86	50	0.51	2.10	>0.05	**NS**
	B	0.46	40.7	0.63			

Graph 5: Showing Comparison of effect of Treatment on Parameter *Sandhi Sphutana*

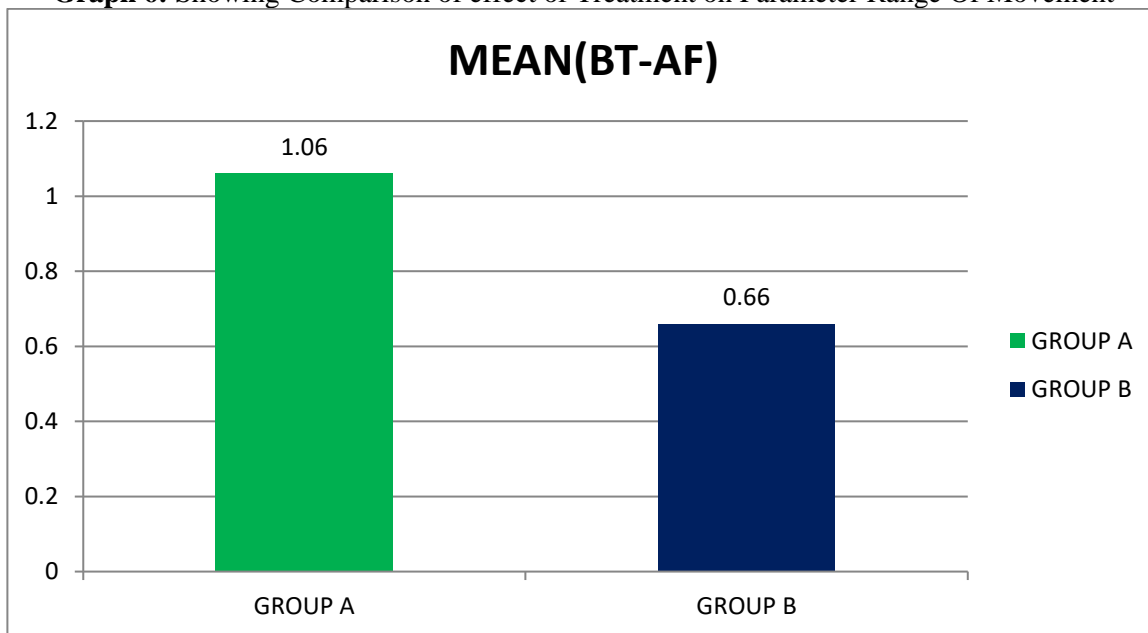From the above analysis it is clear that p value is higher than the t value, so it can be concluded that the effect of both groups are equal in treating the *Sandhi Sphutana*. Percentage improvement of Group A(50%) is more than of group B(40.7%)

6. Range of Movement (ROM)

Table 6: Showing Comparison of effect of Treatment on Parameter Range Of Movement

PARAMETER	GROUP	Mean (BT-AF)	% of improvement	SD	T-Value	P-Value	Remarks
Range Of Movement	A	1.06	50	0.45	2.10	>0.05	**NS**
	B	0.66	35.48	0.48			

Graph 6: Showing Comparison of effect of Treatment on Parameter Range Of Movement

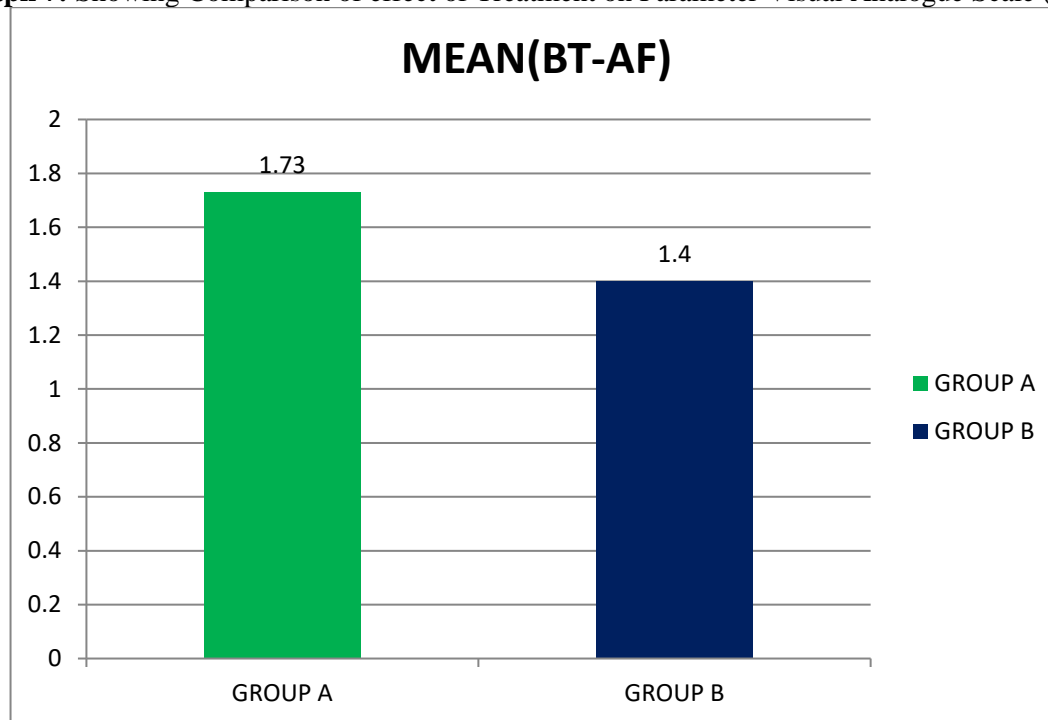From the above analysis it is clear that p value is higher than the t value, so it can be concluded that the effect of both groups are equal in treating Range of Movement. Percentage improvement of Group A(50%) is more than of group B(35.48%).

7. Visual Analogue Scale (VAS)

Table 7: Showing Comparison of effect of Treatment on Parameter Visual Analogue Scale (VAS)

PARAMETER	GROUP	Mean (BT-AF)	% of improvement	SD	T-Value	P-Value	Remarks
Visual Analogue Scale	A	**1.73**	57..66	**0.45**	2.09	>0.05	NS
	B	**1.4**	48.95	**0.50**			

Graph 7: Showing Comparison of effect of Treatment on Parameter Visual Analogue Scale (VAS)

From the above analysis it is clear that p value is higher than the t value, so it can be concluded that the effect of both groups are equal in treating the Visual Analogue Scale. Percentage improvement of Group A(57.66%) is more than of group B(48.95%).

Table 8: Showing the Comparison Between Group A and Group B

PARAMETER	GROUP	Mean	% of Improv.	T-Value	P-Value	Remarks
Sandhi Shoola	A	1.66	60.8	3.22	<0.05	S
	B	1.13	43.46			
Sparsha Asahyata	A	1.73	48.05	2.25	<0.05	S
	B	1.2	35.29			
Sandhi Shotha	A	0.2	25	0	>0.05	NS
	B	0.2	27.39			
Sandhigraha	A	1.26	75.9	2.75	<0.05	S
	B	0.53	54			
Sandhi Sphutana	A	0.86	50	2.10	>0.05	NS
	B	0.46	40.7			
Range Of Movement	A	1.06	50	2.10	>0.05	NS
	B	0.66	35.48			
Visual Analogue Scale	A	1.73	57..66	2.09	>0.05	NS
	B	1.4	48.95			

Further we can observe that Average percentage of improvement of Group A is 52.48% which is greater than Average percentage of improvement of Group B- 40.75%. Hence we conclude that effect observed in Group A is more than Group B in the management of Janu sandhigata vata.
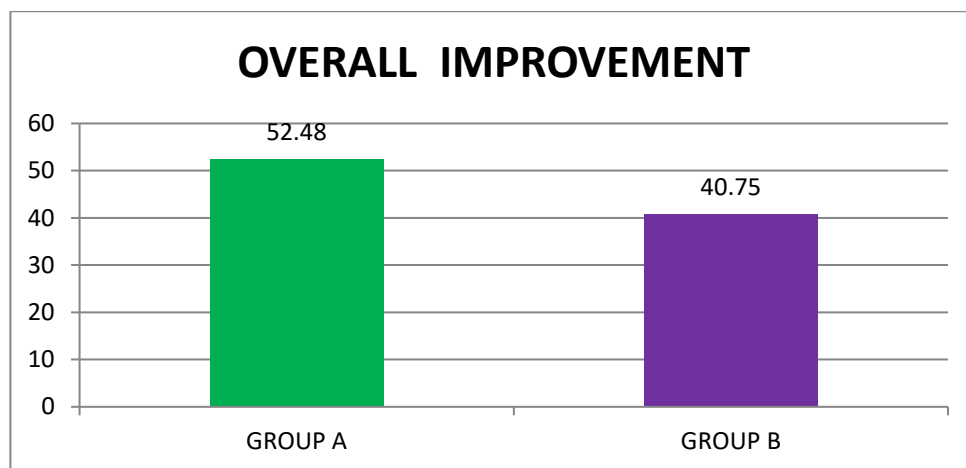
Discussion:

Sandhigatavata is a disease of the madhyama rogamarga involving the asthi sandhis of the body. Asthis are the ashraya of the Vata dosha and the vitiation of Vata hampers the nourishment of asthis, which reflects in Sandhis. Such a malnourishment involves the reduction of the Sleshaka kapha and deterioration of the Sleshmadharakala. Snehana provides the Snehabhava needed for the nourishment of these in turn controls the vitiated Vata. Stambha means stiffness, this attribute is a resultant of excess of seetha guna and also influence of factors such as Samanavata, Shleshakakapha, Ama, Mamsa, Vasa and Medas, which were contributory to occurrence of Stambha. Samanavata is Rooksha guna pradhana and in vitiated state it does excessive Shoshana of shareera there by resulting in contractures and stiffness. Sleshakakapha is Snigdha and Picchila and in decreased state (Kshaya) results in less lubrication of joints causing Stiffness.

Matrabasti of Shatavhadi taila comprises mainly, rasna ,mahaaushadha ,pippali pippali moola shati pushkaramoola having the properties like tikta kastu rasa pradhana,little ruksha guna, little ruksha ,tikshna and Ushna veerya and Vata-kaphashamaka, deepana and acts as vedanashamaka, sulaharahahara and vatanulomana and srotoshodhana. Thus provides significant effect on almost all the symptoms of sandhigatavata. Matrabasti contains sneha (i.e. Shatavhadi taila) with above mentioned properties which are capable to pacify vata by their potencies. Due to its less quantity, it facilitate to stay longer period in pakwashaya (9-10 hours which was observed in this study) and may acts both locally and systemically.

Sandhigatavata possess aggravation of vata which in turn leads to reduction of snehabhava and dhatukshaya condition. Its incidence is predominant in senile condition where matrabasti is indicated. Hence, matrabasti can be administered in all the ages without any complications. It plays vital role in the management of sandhigatavata. It induces sneha bhava and corrects vata in turn checks the pathology of the disease. Shatahvadi taila being Snigdha and Ushna corrects both these deranged Dosha ghatakas and relieves stiffness, thereby results in *samprapti vighatana*.

Shastika shali possesses *snigdha*, *sthira* and *guru gunas*. Due to these attributes *Shastika shali* acts as a potent *Vatahara dravya*. It is *bala vardhaka*, *tarunya sthapaka* and *deha dardhyakrit*. This helps in treating the *dhatu kshaya* present in the disease and also it provides strength and nourishment to the body. *Bala* and *Goksheera* that is used to cook the *Shastika shali* and to heat the bolus are *snigdha*, *rasayana* and *Vatahara* in nature. *Ksheera* is also is *jeevaniya* and *asthi sandhanakara*. Therefore the ingredients present in *Shastika shali pinda sweda* together act and help in relieving the symptoms of *Janusandhigatavata*. *Shastika shali pinda sweda* clears the *srotoavarodha* facilitating more nourishment and free movement of *Vata dosha*. This relieves the *shotha* and *stambha* and facilitates the free movement of *Janu sandhi*.

Conclusion and Future Scope:

Shatahvadi taila matrabasti along with Shasthikashali pinda swedana was found to be effective in the management of Jaanusandhigata vata with an average improvement of 52.48% in all the parameters which is an encouraging result. Similarly Shatahvadi taila matrabasti alone is having efficacy of 40.75%. However in the parameters, Sandhi shoola, Sparsha Asahyata, and Sandhi Graha the efficacy of Group A is found to be more effective than Group B. where as in the parameters Sandhi shotha, *Sandhi Sphutana*, Range of Movement and Visual Analogue Scale both the groups are having statistically equal

effect. This study will help in knowing the usage of Shasthikashali pinda swedana in Janusandhigata vata.

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