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TO STUDY THE EFFICACY OF ADITYAPAKA GUGGULU AND ASWAGANDHA BALADI GHRITA BASTI IN THE MANAGEMENT OF SANDHIGATA VATA (OSTEOARTHRITIS)

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ABSTRACT

Sandhigatavata is described under *Vatavyadhi* in all Ayurvedic texts. *Charaka* was the first to describe separately "*Sandhigataanila*", but it was not included under 80 types of *nanatmajavatavyadhi*.It is characterized by swelling in the joints, appears as if it is inflated with air on palpation and there is also pain during extension and contraction of joint. In Modern Science, the similar condition is explained as Osteoarthritis which is the most common joint articular disorder condition. It is the degenerative type of Arthritis which mainly occurs in old age. In this study, total 68 Patients were registered for the clinical study , out of which 8 patients were drop out, conducted at Govt. Ayurvedic college & Hospital, Guwahati -14, Assam. The 60 patients of *Sandhigatavata* were treated in two groups. Group A: In this group 30 patients are treated with *Adityapakaguggulu*- 3gm/ day (orally) for 2 months and *AswagandhabaladighritaBasti (MatraBasti)* for 8 days. Group B: In this group 30patients are treated with *Adityapakaguggulu*- 3gm/day(orally) for two months. To assess the effect of the therapy objectively, all the signs and symptoms of *Sandhigatavata* were given a score .Also functional test like walking time, climbing stairs, joint movement (WOMAC SCORE) were measured as a criteria for assessment. Both the groups show good results, but group A shows better results than group B specially in case of pain criteria.

Keywords:*Sandhigatavata*, Osteoarthritis, *Adityapakaguggulu*, *AswagandhabaladighritaBasti*

INTRODUCTION

According to *CharakSamhitaChikitsasthan* 28 *Sandhigatavata* is described under *Vatavyadhi*. *Charaka* was the first to describe separately "*Sandhigataanila"*, but it was not included under 80 types of *nanatmajavatavyadhi*. In *Vriddhavastha*, all *Dhatus* undergo

Kshaya, thus leading to *Vataprakopa* and making individual prone to many diseases. Among them, *SandhigataVata* stand stop in the list.

In Allopathic Science, the similar condition of joint is explained as Osteoarthritis. Osteoarthritis (OA) is a disorder characterized by progressive joint failure in which all structures of the joint have undergone pathologic change, there are numerous pathways that lead to OA, but the initial step is often joint injury in the setting of a failure of protective mechanisms

The incidence of Osteoarthritis in India is as high as 12%. It is estimated that approximately 4 out of 100 people are affected by it. Almost all persons by age 40 have some pathological changes in weight bearing joint. 25% females & 16% males have symptomatic Osteoarthritis.

In Allopath science, mainly analgesics, anti - inflammatory drugs or surgery are the options for the treatment of Osteoarthritis. These don't give satisfactory relief and also causes great adverse effect. Researchers are looking for drugs that would prevent, slow down or reverse joint damage.

The present study is a humble effort in search of cure of the disease *Sandhigatavata*. *Acharya Charaka* has mentioned repeated use of *snehana*, *svedana*, *Basti* and *mriduvirechana* for the treatment of *Vatavyadhi*.

AIMS AND OBJECTIVES

1. To study the efficacy of *AdityapakaGuggulu* and *Aswagandhabaladighrita* in the management of *SandhigataVata*
2. To evaluate the effect of *Adityapaka Gugguluorally* and to established treatment modality for Osteoarthritis in modern era.
3. To compare the difference of results in the above treatment groups.

CLINICAL STUDY

Materials and Methods: The clinical study was conducted at Govt. Ayurvedic College and Hospital, Guwahati -14. 60 patients of S*andhigatavata* aged between 30-70 years were selected from the OPD and IPD of Kayachikitsa Department of GACH for the study.

Inclusion criteria

1. Classical signs and symptoms of *sandhigatavata* like
   - *Sandhishula* (pain in joints)
   - *Sandhishotha* (swelling in joints)
   - *Sandhigraha* (Stambha) (stiffness in joints)
   - *AkunchanaPrasaranayohVedana* (pain during flexion and extension of joints)
   - *SparshaAsahyata* (tenderness)
   - *Atopa* (Crepitus)
2. Patients fulfilling the modern criteria of diagnosis of OA
3. Patient with complaint of knee joint.
4. Patients between age group of 30 - 70 years
5. Patients fit for *Basti* karma
6. Patients without any previous anatomical deformity

Exclusion criteria

1. Patients below 30 years and above 70 years of age.
2. Patients suffering from diseases like carcinoma, psoriatic arthritis, tuberculosis, SLE, syphilis, HIV, any cardiac disorders etc.
3. Pregnant lady

GROUPING

All the patients were assigned into two groups with 30 patients in each group.

- **Group A:** 30 patients of this group were given *Adityapakaguggulu* orally with a dose of one gram thrice daily with luke warm water or *mamsaras* and *Basti* with *Aswagandhabaladighrit* in the dose of 60 ml for 8 days.
- **Group B:** 30 patients of this group were given oral *Adityapakaguggulu* in the dose of 1g thrice with luke warm water or *mamsaras* daily for 2months.

CRITERIA FOR ASSESSMENT

Assessment is done in 3 aspects-

1. Classical signs and symptoms of *Sandhigatavata*
2. WOMAC Scoring
3. Radiological change

To assess the effect of therapy objectively, all the signs and symptoms were given scoring depending upon their severity.

RUK (Pain) Grade 0- no complain Grade 1- tells on enquiry Grade 2- complains frequently Grade 3- excruciating conditions	*GRAHA* (Stiffness) Grade 0- absent Grade 1- present
SPARSHAKHAMATWA (Tenderness): Grade 0- no complaints Grade 1- says the joints are tender Grade 2- winces the affected joints Grade 3- winces and withdraws the affected joints	*SOTHA* (swelling) Grade 0- no complaints Grade1- slightly obvious Grade 2- covers well over the bony prominences Grade 3- much elevated
ATOPA (crepitations) Grade 0-none Grade1- felt Grade 2- heard	

WOMAC Scoring

WOMAC i.e. the Western Ontario and McMaster Universities Osteoarthritis Index is a popular assessment used to determine functional ability in osteoarthritis patients. This Index is composed of 24 items in three subscales that evaluate pain in 5 questions, physical function in 17 questions, and stiffness in 2 questions.

Radiological change

Radiological change is assessed by using Kellgren and Lawrence Grading Scale.

Kellgren-Lawrence Grading Scale

Grade 1: doubtful narrowing of joint space and possible osteophyticclipping

Grade 2: definite osteophytes, definite narrowing of joint space

Grade 3: moderate multiple osteophytes, definite narrowing of joints space, some sclerosis and possible deformity of bone contour

Grade 4: large osteophytes, marked narrowing of joint space, severesclerosis and definite deformity of bone contour

METHOD OF ADMINISTRATION OF *ASWAGANDHABALADIGHRITA MATRA BASTI*

- **Requirements for the basti:** 50ml syringe, rubber catheter, ***Aswagandhabaladighrita***, cotton, sterile hand gloves, *mahanarayantaila* or other oil, facility for *abhayanga* and *swedan*.
- Before administration of *basti*, *snehan and swedan* were given to the buttocks, pelvic region and lower region of abdomen including both knees and legs. *Snehan* were given with *mahanarayantaila* or other. Thereafter, *Baspasweda* was done through *Nadiswedanyantra* containing *dasamoolakwath* and *saindavalavan* was given.
- After these *Purvakarma*, the patient was positioned for the administration of *Basti* on the table.
- The patient was advised to take left lateral position with left lower extremity straight and right lower extremity flexed on knee and hip joint.
- The patient was asked to keep his left hand below the head.
- Now *Aswagandhabaladighrita* 60 ml was taken in 60 ml syringe. .
- Rubber catheter oleated with the oil was attached to syringe.
- After removing the air from syringe, rubber catheter was administered into the rectum of the patient upto the length of 4-5 inches.
- The patient was asked to take deep breath while introducing the catheter and drug. After pouring oil into the rectum the catheter is gently pulled out
- After the administration of *Basti*, the patient was advised to lie in supine position and patient's buttocks were gently tapped and legs were raised few times so as to raise the waist. This prevents the early evacuation of the *Basti*. After a while patient was advised to get up from the table and take rest.
- *Bastipratyagamanakala* was also recorded.

Follow up studies:

A total of 4 follow ups were done during 2 months with a 15 days interval between each follow up. The findings thus obtained were subjected to the statistical analysis to find out the efficacy of the *MatraBasti* with *Aswagandhabaladighrita* and oral *Adityapaka Guggulu*.

At the end of the treatment i.e. after 60 days the X-rays were repeated to know any alteration in the disease process.

DATA ANALYSIS:

The data obtained from the above treatments were then organized and summarized using the method of frequency distribution. The data were then analyzed using appropriate statistical tools such as Arithmetic mean, percentage, standard deviation, t – test of significance.

RESULTS OF THERAPEUTIC PROFILE

Statistical Analysis:

As the sample size was 30 in each group, t test was applied to know the significance of the effect of the Trial therapy on *Sandhigatavata* (Osteoarthritis).

Table-1 (a): Showing Effect of Therapy on *Sandhishula* (**Joint pain)**

GROUP	Mean		SD(±)		SE	t	P	%of Relief
	BT	AT	BT	AT	(±)			
Group A	2.20	1.07	0.85	0.98	0.15	10.86	<0.001	80%
Group B	2.00	1.33	0.74	1.03	0.14	7.61	<0.001	56.66%

Comment: The above data shows that effect of therapy in Sandhi Shula is statistically significant in both group A and group B with 80 % and 56.66% relief respectively

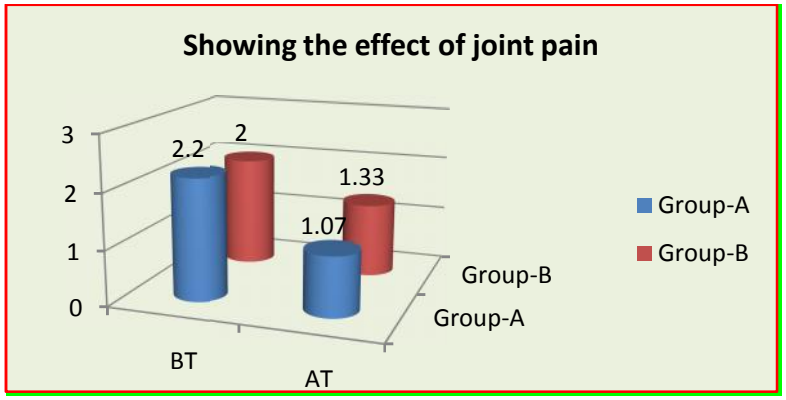

Table -1 (b): Showing the comparative effect on **Joint pain**

		SE (±)	t value	P value
1.13	0.67	0.205	2.24	<0.02

Comments: The observed differences of mean in both the groups are statistically significant (t=2.24, p <0.02), thus the null hypothesis is rejected. So the drug'suse in Group A is more effective in relieving Joint pain.

Table-2(a): Showing Effect of Therapy on **Joint stiffness**

GROUP	BT	AT	SD (±) BT	SD (±) AT	SE (±)	t	P	% of relief
Group A	1.67	0.94	0.51	0.94	0.77	6.64	<0.001	66.66.%
Group B	1.33	0.83	0.69	0.62	0.16	2.47	<0.02	38.88%

Comment: The above data shows that the effect of therapy on joint stiffness is significant in both the groups, group A with 66.66% relief and 38.88 % relief in Group B

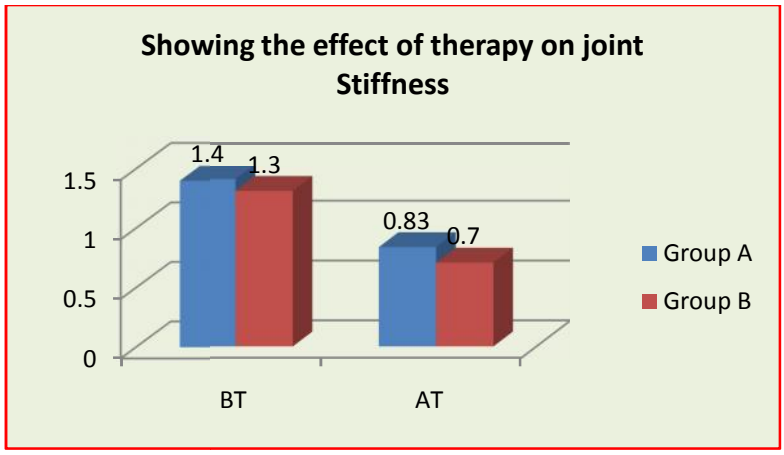

Table 2(b): Showing the Comparative Effect on **Joint Stiffness**

Tabl	ng th	SE (±)	t	P value
0.73	0.50	0.241	0.95	>0.02

Comments:

The Observed difference of mean in Both the Groups are Statistically not Significant (t=0.95, p >0.02), hence the null hypothesis is accepted. Thus the trial drug used in both the group has same Efficacy in relieving joint stiffness**.**

Table –3(a): Showing Effect of therapy on **Joint swelling**

GROUP	ffect		SD (±)		SE (±)	t	P	% of Relief
	BT	AT	BT	AT				
Group A	1.53	0.76	0.52	0.75	0.15	7.21	<0.001	71%
Group B	1.46	0.85	0.52	0.80	0.14	4.38	<0.001	53.84%

Comment: From the above data, it shows that the effect of therapy on joint swelling is found to be significant in both the groups with 71 % relief in Group A, and 53.84 % relief in Group B.

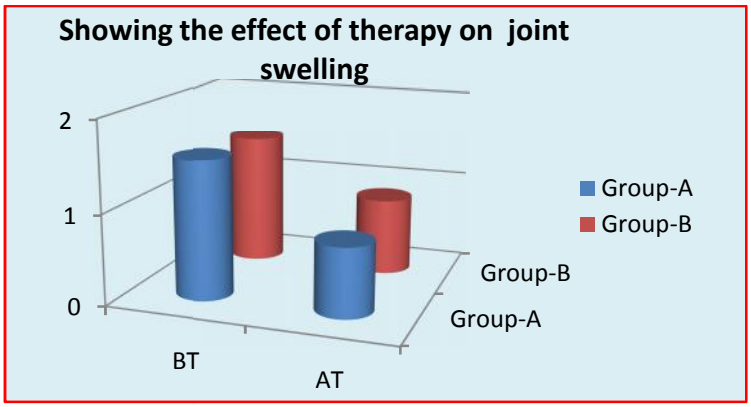

Table 3 (b): Showing the Comparative Effect on **Joint Swelling**

		SE (±)	t	P value
0.77	0.50	0.61	0.75	>0.02

Comments: The Observed difference of mean in Both the Groups are statistically not Significant (t=0.75, p >0.02), hence the null hypothesis is accepted. Thus the trial drug used in both the group has same Efficacy in relieving joint stiffness.

Table -4 (a): Showing Effect of therapy on **pain during flexion and extension**

GROUP	Mean		SD (±)		SE (±)	t	P	% of relief
	BT	AT	BT	AT				
Group A	1.67	1.07	0.76	0.98	0.14	6.6	<0.001	56.66%
Group B	1.63	1.10	0.67	0.71	0.12	2.91	<0.001	50%

Comment: From the above table it shows that, the effect of therapy on pain during extension and flexion is found to be statistically significant in both the groups. While Group A shows 56.66 % and Group B shows 50 % relief.

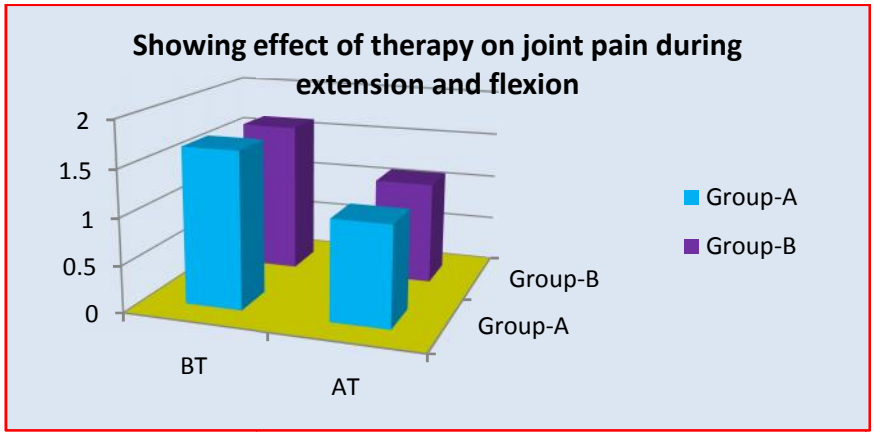

Table 4 (b): Showing the Comparative Effect on Pain During Extension And Flexion

		SE (±)	t	p
0.6	0.53	0.18	0.38	>0.2

Comments: The Observed difference of mean in Both the Groups are statistically not Significant (t=0.38, p >0.01), hence the null hypothesis is accepted. Thus the trial drug used in both the group has same Efficacy in relieving pain during extension and flexion.

Table- 5(a): Showing Effect of therapy on ***Atopa(Crepitation)***

GROUP			SD (±)		SE (±)	t	p	% of Relief
	BT	AT	BT	AT				
Group A	1.67	1.10	0.73	0.77	0.16	3.23	<0.001	57.14
Group B	1.86	1.43	0.66	0.85	0.18	3.12	<0.001	42.85

Comment: The above table shows that, the effect of therapy on joint crepitation is also found to be significant in both the groups. Group A shows 57.14 % relief while, Group B shows 42.85% relief.

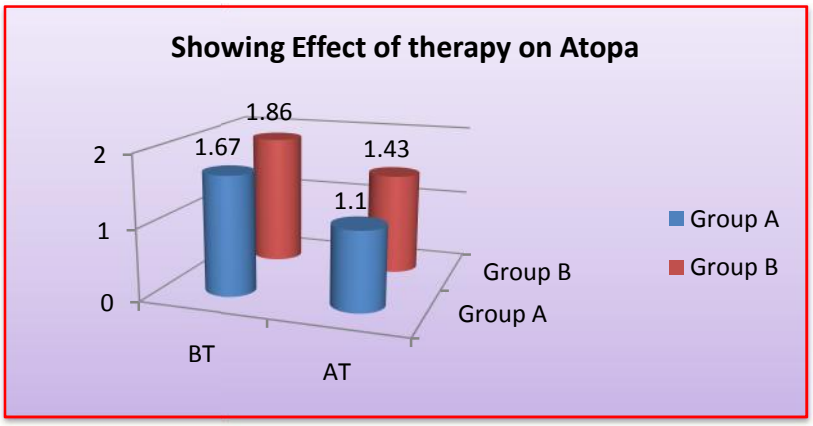

Table 5(b): Showing the Comparative Effect on **Atopa** (Crepitation)

[illegible]	[illegible]	SE (±)	t	p
0.57	0.43	0.245	0.57	>0.1

Comments: The Observed difference of mean in Both the Groups are statistically not Significant (t=0.57, p >0.1), hence the null hypothesis is accepted. Thus the trial drug used in both the group has same Efficacy in relieving crepitation.

Table- 6(a): Showing Effect of therapy on WOMAC scoring

GROUP	[illegible]		SD (±)		SE (±)	t	p	% of Relief
	BT	AT	BT	AT				
Group A	35.97	26.57	11.04	12.05	2.02	7.60	<0.0001	83.33
Group B	37.20	30.90	10.38	10.90	1.90	6.32	<0.0001	76.66

Comment: From the above table, it can be concluded that, the effect of therapy on Womac score is also found to be statistically significant in both the groups, with a relief of 83.33% in Group A and 76.66% relief in group B.

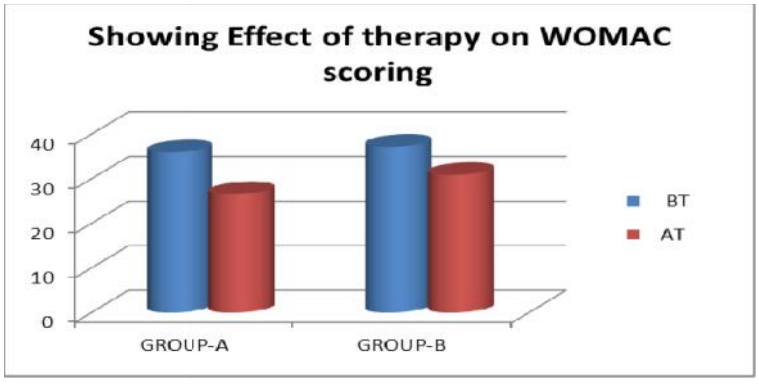

Table 6 (b): Showing the Comparative Effect on **WOMACSCORE**

[illegible]	[illegible]	SE (±)	t	p
9.4	6.3	2.77	1.11	>0.1

Comments: The Observed difference of mean in Both the Groups are statistically not Significant (t=1.11, p >0.1), hence the null hypothesis is accepted. Thus the trial drug used in both the group has same Efficacy on WOMAC SCORE.

Table 7(a): Showing the effect on The **Radiological finding.**

GROUP	[illegible]		SD (±)		SE (±)	t	p	% of Relief
	BT	AT	BT	AT				
Group A	1.90	1.73	0.66	0.78	0.12	2.40	<0.05	16.66%
Group B	2.10	2.03	0.80	0.89	0.15	1.43	>0.1	6.66%

Comment: The above table shows that the effect of therapy on radiological finding is found to be slightly significant in Group A with 16.66% relief and statistically insignificant in group B with 6.66% relief.

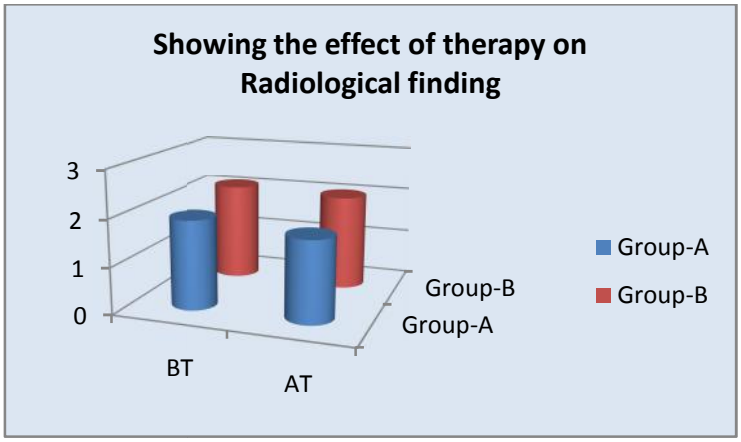

Table 7(b): Showing the Comparative Effect on **Radiological finding**

[illegible]	[illegible]	SE (±)	t	p
0.17	0.7	2.77	0.52	>0.1

Comments: The Observed difference of mean in Both the Groups are statistically not Significant (t= 0.52, p >0.1), hence the null hypothesis is accepted. Thus the trial drug used in both the group Shows same efficacy regarding the radiological findings.

DISCUSSION

Sandhigatavata is described in all *Samhita* and *Sangrahagrantha* under *Vatavyadhi.* Various *Aharaja, Viharaj, Manasa* and other *VataPrakopakaNidanas* are mentioned in detailed for the occurrence of *Vatavyadhi*. *Sandhigatavata* specially occurs in *Vriddhavastha* which is *Parihanikala i*n which *Dhatukshya* takes place which leads *Vataprakopa. Vata* and *Asthi* have *Ashraya- AshrayiSambandha*. That means *Vata* is situated in *Asthi*. Increased *Vata* diminishes *Sneha* from *Asthidhatu* by its opposite qualities to *Sneha.* Due to diminution of *Sneha, Khavaigunya* (*RiktaSrotas)* occurs in *Asthi*

which is responsible for the production of *Sandhigatavata.*

Osteoarthritis is the most common form of arthritis. It is a degenerative type of arthritis which mainly occurs in old age. Degeneration takes place in the joint which makes the individual disabled or handicapped. Degeneration occurs continuously in most of the patients which makes the person disabled for the life .It is a chronic degenerative disorder of multifactorial etiology characterized by loss ofarticular cartilage and peri-articular bone remodeling.

For the present study, *Basti* is selected as it is mentioned as the best therapy for the *vatavyadhies*. Here *MatraBasti* is given with *Aswagandhabaladighrita*. *MatraBasti* is selected for the present study as it can be administered in all the ritus irrespective of age, sex & time. *Aswagadhabaladighrita* has *vatashamaka* and *rasayana* properties. As the disease osteoarthritis is a degenerative condition a *rasayana* should give good result.

Along with *MatraBasti, Adityapakaguggulu* supplement was given orally. *Adityapakaguggulu* which is mentioned in *Chakradutta* is very good formulation in *vatavyadhi* especially for *Sandhigatavata.* The contents of *Adityapakaguggulu* include *Triphala, Twak, ela, pippali, guggulu and Dasamoolakwath as bhavnadravyas.* The early pathology of *Sandhigatavata* starts with the vitiation of *Vata.* It may be due to *dhatukshaya or avaran* or by direct uses of *vataVardhakahara* and *vihara.* Most of the drugs in *Adityapakaguggulu* are have following properties- *vatakaphashamak, Tridoshashamak, sothaghna, dipana, Pachana, vedanasthapan and shola prasamana. A* compound preparation like *Adityapakaguggulu* having these properties is likely to check the etio-pathogenesis of the disease *Sandhigatavata* and arrest its progress.

CONCLUSION

Sandhigatavata as described in our classics is purely *vatavyadhi*. On the other hand Osteoarthritis is multi-factorial degenerative joint disorders. The patients of *Sandhigatavata* were studied in two groups. It was observed that Majority of the patient are female 46 0ut of 60 comprising 76.66%. Majority of the patients had duration of illness 1 to 3 years (33.33%) followed by 6 to 12 months (23.33%).Overall therapy is found to be effective in **Controlling Pain, Stiffness, restricted movement, swelling and crepitation in** both the groups,. Both the result are statistically found to be significant from the comparative effect point of view, null hypothesis is rejected in the effect of pain, while null hypothesis is accepted in all other criteria viz; stiffness, crepitation's, pain during extension and flexion , swelling. Excellent result is found in controlling pain especially in Group A as observed symptomatically and statistically. The Pharmacodynamics Properties of the trial drugs satisfy the *chikitsa sutra* of *Sandigatavata/*Osteoarthritis.

So it can be concluded that, *AswagandhabaladighritaBasti* and *Adityapakaguggulu* are effective in the Management *of Sandhigatavata* (Osteoarthritis)

RECOMMENDATION FOR FURTHER STUDIES

Further research on *Adityapakaguggulu* is advice it also shows good effect on relieving on other disease Conditions like Obesity, constipation, Hypertension etc.(even though statistical data is not provided)

This work was done by keeping in view all the cautions. In spite of that, there may be chances of bias in research and also in interpretation of concepts in appropriate way. Author takes sole responsibility for such errors. It may be hoped that, the reader of this dissertation would gain some additional aspects of knowledge and assistance for future research work.

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