WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 7, Issue 9, 589-605 Research Article ISSN 2277 – 7105

COMPARATIVE STUDY OF NAGARADI CHURNA AND AABHADI CHURNA IN THE MANAGEMENT OF JANU-SANDHIGATA VATA (OSTEOARTHRITIS)

[1]*Dr. Swapnil D. Wakte and [2]Dr. Sanjay A. Dhurve

[1]P. G. Scholar, Department of Kayachikitsa, Bharati Vidyapeeth Deemed to be University College and Hospital of Ayurveda, Katraj-Dhankawadi, Pune-43.

[2]Associate Professor, M.D., Ph.D, Department of Kayachikitsa, Bharati Vidyapeeth Deemed to be University College and Hospital of Ayurveda, Katraj-Dhankawadi, Pune-43.

Article Received on
03 March 2018,

Revised on 24 March 2018,
Accepted on 14 April 2018,

DOI: 10.20959/wjpr20189-11753

***Corresponding Author**
Dr. Swapnil D. Wakte
P. G. Scholar, Department of Kayachikitsa, Bharati Vidyapeeth Deemed to be University College and Hospital of Ayurveda, Katraj-Dhankawadi, Pune-43.

INTRODUCTION

The human being is the most precious creature on the cosmos & Ayurveda is an ancient & effective medical science in modern world.

According to Ayurveda, Janu Sandhigata vata is described in all Samhitas. Acharya charak described the disease separately named "Sandhigata Anila". The trouble of sandhis by prakupita vata is main phenomena in samprapti of Janu Sandhigata vata (Knee Osteoarthritis).

Osteoarthritis is most common articular disorder considered as a degenerative joint disease and appears commonly after the age of 45years for men and women. The osteoarthritis in India is as high as 12%.

The remedy for osteoarthritis in western medical science is mainly analgesic and Anti-inflammatory drugs or surgery are options. They don't provide remarkable recovery but also cause adverse effect if used extensively.

NEED OF STUDY

It is need of hour, to find out effective treatment in Janu Sandhigat vata (Knee Osteoarthritis). Ayurveda advocates that herbal medicines not only cures the disease and increases the immunity on the affected part.

In this study the two drugs Nagaradi Churna and Aabhadi Churna will be used internally administer orally as per study design.

AIM AND OBJECTIVES

Aim

To study the comparative effect of Nagaradi churna and Aabhadi churna in management of Janu-Sandhigata vata (Osteoarthritis).

Objectives

To study Sandhigata vata & Osteoarthritis in detail as mentioned in Ayurvedic classical texts and modern text.

1. To see the comparative effect of Nagaradi churna and Aabhadi churna on Janu-Sandhighata vata lakshanas i.e.
2. Janu-Sandhi shool (Knee joint pain)
3. Janu-Sandhi shotha (knee joint swelling)
4. Sandhi Atopa (Crepitus)
5. Akunchana Prasaranjanya Vedana (Radiating pain).

HYPOTHESIS

1. Both the drugs i.e. Nagaradi Churna and Aabhadi Churna are not equally effective in Janu-Sandhigata vata.

NULL HYPOTHESIS

1. Both the drugs i.e. Nagaradi Churna and Aabhadi Churna are equally effective in Janu-Sandhigata vata.

Inclusion, Exclusion & Withdrawal Criteria.

Inclusion	Exclusion	Withdrawal
Patients having sign & symptoms of Janu- Sandhigata vata(osteoarthritis)	Pregnancy & Lactating women's is excluded	Occurrence of serious adverse events such as allergic rash, swelling etc.
Selection of patients is irrespective of sex, work, & socio economic status	Patient having severe heart disease,Malignancy, Hypothyroidism is excluded	The investigator feels that the protocol has been violated or the patient has becomes uncooperative
Age group: - patient age more than 20 year up to 70 years is included	Acute condition of associated with major neurological problems is excluded	The patient is not willing to continue the trial during course of treatment
Scale of osteoarthritis is included i.e. Womac scale	Other diseases associated with use of analgesics is excluded	
	Koshtuksheersha	

MATERIALS AND METHODS

1) Materials

1. Materials were purchased from renowned pharmacy (Ambadas , tulashi baug, pune).
2. Authentication of drugs was done at Botany department of University of Pune.
3. Nagaradi and Aabhadi churna was prepared according to API.
4. Standardisation of Nagaradi churna and Aabhadi churna was done at Late. Prin. B. V. Bhide laboratory.

Place of work

The clinical trial was carried out at OPD and IPD of Bharati Vidyapeeth University Ayurved Hospital, Dhankawadi, Pune-43. Total 40 patients were selected randomly. Total 44 patients were screened of which 4 patients were dropped out from study because of irregular follow up.

GROUP A - NAGARADI CHURNA: - Consist of total 9 dravyas.

Dravyas of Nagaradi Churna

SR. NO	DRAVYA	SR NO	DRAVYA
1	SUNTHI	6	SAINDHAVA
2	HARIDRA	7	RASNA
3	PIPPALI	8	VACHA
4	JEERAK	9	MADHUKA
5	AJAMODA		

GROUP B - AABHADI CHURNA: - It consist of total 11 dravyas.

Dravyas of Aabhadi Churna

SR NO	DRAVYA	SR NO	DRAVYA
1	AABHA	7	HAPUSHA
2	RASNA	8	VRUDHADARUKA
3	GUDUCHI	9	YAVANI
4	SHATAVARI	10	SHATAPUSHAPA
5	ASHWAGANDHA	11	AJAMODA
6	SUNTHI		

Method of Preparation

Take all ingredients of pharmacopoeia quality.

All the above mentioned ingredients of Nagaradi & Aabhadi churna would be taken in equal quantity separately and the churna will be mixed thoroughly.

The churna will then passed through sieve no 85.

The churna will be collected and separately pouches of 2gm of Nagaradi and Aabhadi churna will be prepared simultaneously and these churna will be kept in air tight container and labelled accordingly.

DRUG ADMINITRATION

Treatment given	**Group A Trail Group Nagaradi churna**	**Group B Control Group Aabhadi Churna**
Dosage	2 gm. BD	2 gm. BD
Kala	Apana Kala (After food)	Apana Kala (After food)
Anupana	Ghruta (Cows Ghee)	Ushanodak (Lukewarm water)
Root of Administrations	Oral	Oral
Treatment Period	30days + follow up 15 days	30days + follow up 15 days
Follow up Period	0-7-14-21-30-45	0-7-14-21-30-45

ASSISMENT CRITEIA

Subjective	**Objective**
Sandhishool (Joint Pain)	Hb %
Sandhishotha (Joint Swelling)	ESR
Sandhiatopa (Crepitus)	
Joint Instability	
Akunchan Prasaranjanya Vedana (Radiating Pain)	
Sparshaasahyata (Tenderness)	
Shramaasahyata (Functional Ability 0)	
Range of Movements	
WOMAC SCALE	

Sr. No	**Symptoms**	**Grade 0**	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**
1	Sandhishool	No Pain	Pain On forced Movement	Pain on normal movement	Pain at rest	
2	Sandhishotha	No Swelling	Slight Swelling	Covers well prominent of joints	Much elevated joint	
3	Sandhiatopa	No Crepitus	Doubtful	Palpable	Moderate	Profound (Audible)
4	Joint Instability	No Instability	Mild Instability	Limping with moderate Instability	Limping with severe Instability	
5	Sparshaasahatavata	No Tendernous	Subjective Exp. Of Tendernous	Wincing of joints	Winces & withdrawal of part affected on pressure	
6	Akunchan Prasaranjanya Vedana	No Pain	Pain without winching of face	Pain with winching of face	Prevent complete flexion	Does not allow passive movements
7	Shramaasahatavata	Shramasahatavata	Mild Shramasahatavata	Moderate Shramasahatavata	Severe Shramasahatavata	

8) RANGE OF MOVEMENT

- Grade 1 = No improvement or free flexion & above.
- Grade 2 = Mild improvement (up to 100 degree flexion).
- Grade 3 = Moderate improvement (up to 110 degree flexion).
- Grade 4 = Complete improvement (more than 110 degree).

9) WOMAC SCALE

A set of questionaries' was include which are available on internet.

OBSERVATIONS

ACCORDING TO HAEMOGLOBIN

Hb%		Mean	N	SD	SE	t-Value	P-Value	Result
Group A	Before	11.1	20	1.35	0.30	1.273	0.213	Not Significant
	After	11.5	20	1.36	0.31			
Group B	Before	11.5	20	1.46	0.33	1.694	0.101	Not Significant
	After	12.1	20	1.32	0.29			

We have used paired t-test to test the significance in Group A and Group B. From above table, we can observe that P-Values for Group A and Group B are greater than 0.05 hence we conclude that there is no significant change observed in both groups.

ACCORDING TO ESR

ESR		Mean	N	SD	SE	t-Value	P-Value	Result
Group A	Before	10.5	20	2.04	0.46	1.453	0.163	Not Significant
	After	10.3	20	2.08	0.47			
Group B	Before	10.8	20	2.19	0.49	1.256	0.219	Not Significant
	After	10.2	20	2.03	0.45			

We have used paired t-test to test the significance in Group A and Group B. From above table, we can observe that P-Values for Group A and Group B are greater than 0.05 hence we conclude that there is no significant change observed in both groups.

ACCORDING TO WOMAC SCALE

WOMAC		Mean	N	SD	SE	t-Value	P-Value	Result
Group A	Before	0.7	20	0.02	0.00	65.885	0.000	Significant
	After	0.5	20	0.01	0.00			
Group B	Before	0.7	20	0.01	0.00	32.140	0.000	Significant
	After	0.6	20	0.03	0.01			

We have used paired t-test to test the significance in Group A and Group B. From above table, we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that there is significant change observed in both groups.

SANDHISHOOLA LEFT

Sandhishool Left	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	1.05	0.35	-2.646[a]	0.008	66.7	Significant
Group B	1.4	0.9	-2.887[a]	0.004	33.7	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

SANDHISHOOLA BILATERAL KNEE JOINT

Sandhishool Bilateral	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0.6	0.2	-2.000[a]	0.046	66.7	Significant
Group B	0.45	0.3	-1.732[a]	0.083	32.3	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Value for Group A is greater than 0.05 and Group B is less than 0.05 hence we conclude that effect observed in Group B is significant while Group A is not significant.

SANDHISHOOLA RIGHT KNEE JOINT

Sandhishool Right	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	1.35	0.45	-3.000[a]	0.003	67.3	Significant
Group B	1.2	0.8	-2.828[a]	0.005	32.7	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

SANDHISHOTHA LEFT KNEE JOINT

Sandhishotha Left	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	3	1	-1.732[a]	0.083	68	Significant
Group B	3	2	-2.000[a]	0.046	32	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Value for Group A is less than 0.05 and Group B is greater than 0.05 hence we conclude that effect observed in Group A is significant while Group B is not significant.

SANDHISHOTHA BILTERAL KNEE JOINT

Sandhishotha Bilateral	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	3	1	-1.414[a]	0.157	66	NS
Group B	3	2	-1.414[a]	0.157	34	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are greater than 0.05 hence we conclude that effect observed in both groups are not significant.

SANDHISHOTHA RIGHT KNEE JOINT

Sandhishotha Right	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	3	1	-2.236[a]	0.025	63	Significant
Group B	3	2	-2.000[a]	0.000	37	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

SANDHIATOPA LEFT KNEE JOINT

Sandhisatopa Left	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	1	0.75	-2.236[a]	0.025	25.0	Significant
Group B	0.8	0.4	-2.000[a]	0.046	50.0	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group

A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

SANDHI ATOPA BILATERAL KNEE JOINT

Sandhisatopa Bilateral	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0.2	0.15	-1.000[a]	0.317	25.0	NS
Group B	0.4	0.2	-1.414[a]	0.157	50.0	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are greater than 0.05 hence we conclude that effect observed in both groups are not significant.

SANDHIATOPA RIGHT KNEE JOINT

Sandhisatopa Right	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0.8	0.6	-2.000[a]	0.046	25.0	Significant
Group B	0.8	0.4	-2.000[a]	0.046	50.0	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

JOINT INSTABILITY LEFT KNEE JOINT

Joint Instability Left	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0.65	0.45	-2.000[a]	0.046	30.8	Significant
Group B	0.5	0.35	-1.342[a]	0.180	30.0	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Value for Group A is less than 0.05 and Group B is greater than 0.05 hence we conclude that effect observed in Group A is significant while Group B is not significant.

JOINT INSTABILITY BILATERAL KNEE JOINT

Joint Instability Bilateral	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0.25	0.06	-1.633[a]	0.102	70.0	NS
Group B	0.2	0.05	-1.134[a]	0.257	75.0	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are greater than 0.05 hence we conclude that effect observed in both groups are not significant.

JOINT INSTABILITY RIGHT KNEE JOINT

Joint Instability Right	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0.6	0.4	-2.000[a]	0.046	33.3	Significant
Group B	0.75	0.45	-1.732[a]	0.083	40.7	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Value for Group A is less than 0.05 and Group B is greater than 0.05 hence we conclude that effect observed in Group A is significant while Group B is not significant.

AKUNCHANA PRASARANJANYA VEDANA LEFT KNEE JOINT

Left knee Joint	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	1.05	0.35	-2.646[a]	0.008	66.7	Significant
Group B	1.35	0.9	-3.000[a]	0.003	33.3	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

AKUNACHANA PRASARANJANAYA VEDANA BILATERAL KNEE JOINT

Bilateral knee Joint	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0.6	0.2	-2.000[a]	0.046	68.7	Significant
Group B	0.45	0.3	-1.732[a]	0.083	32.3	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Value for Group B is greater than 0.05 and Group A is less than 0.05 hence we conclude that effect observed in Group A is significant while Group B is not significant.

AKUNCHANA PRASARANJANYA VEDANA RIGHT KNEE JOINT

Right Knee Joint	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	1.3	0.45	-2.887[a]	0.004	64.8	Significant
Group B	1.2	0.8	-2.828[a]	0.005	33.2	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

RANGE OF MOVEMENTS OF LEFT KNEE JOINT

ROM Left	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0.6	1.15	-2.333[b]	0.020	91.7	Significant
Group B	0.9	1.35	-3.000[b]	0.003	50.0	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

RANGE OF MOVEMENTS OF BILATERAL KNEE JOINT

ROM Bilateral	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	0.4	0.8	-2.000[b]	0.046	60.0	Significant
Group B	0.3	0.45	-1.732[b]	0.083	50.0	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Value for Group B is greater than 0.05 and Group A is less than 0.05 hence we conclude that effect observed in Group A is significant while Group B is not significant.

RANGE OF MOVEMENTS OF RIGHT KNEE JOINT

ROM Right	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	1	2	-3.162[b]	0.002	64.0	Significant
Group B	0.8	1.2	-2.828[b]	0.005	54.0	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

SPARSHAASAHATAVATA OF LEFT KNEE JOINT

Sparshasahayat Left	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	3	1	-1.732[a]	0.083	66.7	NS
Group B	3	2	-2.000[a]	0.046	33.3	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Value for Group B is less than 0.05 and Group A is greater than 0.05 hence we conclude that effect observed in Group B is significant while Group A is not significant.

SPARSHASAHATAVATA BILATERAL KNEE JOINT

Sparshasahatavata Bilateral	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	3	1	-1.342[a]	0.180	66.0	NS
Group B	3	2	-1.414[a]	0.157	34.0	NS

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are greater than 0.05 hence we conclude that effect observed in both groups are not significant.

SPARSHAASAHATAVATA OF RIGHT KNEE JOINT

Sparshasahatavata Right	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	3	1	-2.070[a]	0.038	67.0	Significant
Group B	3	2	-2.000[a]	0.046	33.0	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

SHRAMAASAHATAVATA

Shramasahatavata.	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Group A	2.65	2	-3.742[a]	0.000	24.5	Significant
Group B	2.9	0.85	-4.379[a]	0.000	70.7	Significant

Since observations are on ordinal scale, we have used Wilcoxon Signed Rank test to test the efficacy in Group A and Group B. From above table we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that effect observed in both groups are significant.

DISCUSSION

Sandhigatavata (Osteoarthritis) is one among the vata vyadhi, it affects sandhis especially weight bearing joints. It affects on the patients to lead unproductive life due to physical disability and the disease is known to since Vedic period. Our Veda described some points about vata vyadhi and Sandhigatavata vyadhi.

Discussion on vyadhi - Its elaborate description is found in our ancient texts. In Sandhigatavata vata is a predominant factor which act on the sandhis and form dosha-dushya samurchana in sthana samshraya and form the disease. It produces the symptoms like Sandhishoola, Sandhishotha, Prasaranaakunchana savedana, tenderness etc.

According to modern science Sandhigatavata can be correlated with osteoarthritis because of its similar signs and symptoms. Osteoarthritis is common among musculoskeletal disorders and is important cause of disability. It is the second commonest musculoskeletal problem in the world (30%) after back ache (50%).

Since the separate etiological factors are not mentioned for the disease Sandhigatavata, the samanya nidana of vata vyadhi is considered as etiological factors for sandhigatavata. The etiological factors can be divided into Aharata, Viharata, Manasika, Kalakruta. The proper diet and dietic regimen plays important role in the process of the disease because Ahara provides the nutrients to all the Dhatus. Improper diet causes vata Prakopa. Vyana vata is

responsible for Pancha chesta; the etiological factors will directly causes Vyana vata Prakopa. This produces difficulty in movement so Viharata nidana is important. The mental health always depends on the physical well-being. The anxiety, stress, nervousness and mental disturbances always reflect on body mechanism and impair the functions. Vata being essential factor in the maintenance of Manasa and Indriyas, disturbances on the mental health has direct influence over vata dosha.

The specific samprapti of Sandhigatavata is not mentioned in the classical texts but the samanya samprapti of vata vyadhi is considered as itself. Here two types of samprapti is mentioned in texts i.e. Dhatukshayajanya and Margavarodhajanya. Line of treatment of all the vatavyadhies is mentioned as Snehana, Swedana, Mrudu shodana, shaman and Agni karma. In shaman chikitsa Nagaradi churna & Aabhadi churna is selected for present study.

Nagaradi churna & Aabhadi churna is herbal preparation containing mainly vatahara drugs was selected for the study.

Discussion on drugs

Nagaradi churna is a combination of nine Dravyas mainly they are katu-tikta rasatmaka and vatashamana property.

Aabhadi churna is a combination of eleven dravya's they are katu-tikta rasatmaka & vatashamana property.

CLINICAL STUDY

Total Diagnosed patients of janu sandhigatavata were 44 in no, patients registered in Group A – 21 and Group B – 23, 4 patients were drop out due to irregular follow up. So during complete course of treatment (study) group A – 20 patients were included while in Group B – 20 patients were included.

DISCUSSION ON OBSERVATION

EFFECT OF THERAPY ON SYMPTOMS

- **Sandhishool** – On observation Group A shows effect on Right knee (67.7%), left knee (66.7%), bilateral knee (67.7%) improvement in relieving Sandhishoola whereas group b right knee (34.3%), left knee (35.7%), bilateral knee (32.3%), relief in Sandhishoola. As Nagaradi churna contains Sunthi, Rasna which contains shoolaghna property and gives relief in Sandhishoola. Aabhadi churna contains Sunthi, Rasna which contains shoolaghna

property and Guduchi which contains Tridosha hara property thus gives relief in sandhishoola.

- **Sandhishotha-** On observation Group A shows effect on Right knee (63.0%), left knee (68.0%), bilateral knee (66.0%) improvement in relieving Sandhishotha whereas group b right knee (37.0%), left knee (32.0%), bilateral knee (34.0%), relief in Sandhishotha. Nagaradi churna contains Sunthi, Pippali, Ajamoda which are Ushna veeryatamaka which helps in reducing sandhishotha and Aabhadi churna contains Sunthi, Rasna, Yavani, Hapusha which are Ushna Veeryatamaka and Guduchi which has Tridosha hara property which reduces sandhishotha.
- **Sandhiatopa** - On observation Group B shows effect on Right knee (49.0%), left knee (47.0%), bilateral knee (50.0%) improvement in relieving Sandhiatopa whereas Group B right knee (34.3%), left knee (28.0%), bilateral knee (32.3%), relief in Sandhiatopa. As Nagaradi churna contains Yashtimadhu which contains Rasayan properties and gives relief in Sandhiatopa and Aabhadi churna contains Shatavari, Guduch which contains Rasayan properties and Ashwagandha contains Brmhaniya properties and gives relief in sandhiatopa.
- **Joint instability** – On observation, group B bilateral knee (75.0%) is effective than group A bilateral knee (70.3%), right knee (40.0%) in both groups & group A left knee was effective than group B left knee (30.0%). Nagaradi churna contains Sunthi, Haridra, Jeerak, Ajamoda which contains Ushna veeryatmaka properties and gives relief in Joint Instability. Aabhadi churna contains Aabha, Rasna, Guduchi, Hapusha, Yavani which contains Ushna Veeryatamaka properties and gives relief in Joint Instability.
- **Akunchanaprasaranjanya vedana-** On observation Group A shows effect on Right knee (64.8%), left knee (66.7%), bilateral knee (68.7%) improvement in relieving akunchanaprasaranjanya vedana whereas Group B right knee (35.1%), left knee (33.3%), bilateral knee (32.3%), relief in akunchanaprasaranjanya. Nagaradi churna contains Sunthi, Rasna, Ajamoda which contains shoolaprashamana properties and gives relief in Akunchanaprasaranjanya vedana and Aabhadi churna contains Guduchi which contains tridosha hara property and gives relief in akunchanprasaranjanya.
- **Range of movements** – On observation Group A shows effect on Right knee (64.0%), left knee(91.7%),bilateral knee(68.0%) improvement in range of movements where as Group B right knee (54.0%), left knee (50.0%), bilateral knee (51.0%), improving range of movements. Nagaradi churna contains Sunthi, Rasna which contains shoolaghna property and improves range of movements of knee joints. Aabhadi churna contains

Sunthi, Rasna which contains shoolaghna property and Guduchi which contains tridosha hara properties thus improves range of movements of knee joint.

- **Sparshasahatavata (Tenderness)**- On observation Group A shows effect on Right knee (67.0%), left knee(66.7%),bilateral knee(66.0%) in reducing sparshaasahatva whereas Group B right knee (33.0%), left knee (33.3%), bilateral knee (34.0%), in reducing sparshaasahatvata. Nagaradi churna contains Sunthi, Rasna which contains shoolaghna property and vatahara properties and gives relief in Sparshasahatavata. Aabhadi churna contains Sunthi, Rasna which contains shoolaghna property and Guduchi which contains tridosha hara properties thus gives relief in sparshaasahatvata.
- **Shramaasahayata (Functional ability)** – On observation Group B (70.7%) shows improved in shramaasahayata (functional ability) than Group A (24.5%). Nagaradi churna contains Sunthi, Rasna which contains shoolaghna property and vatahara properties and gives relief in Shramasahyata. Aabhadi churna contains Sunthi, Rasna which contains shoolaghna property and Guduchi which contains tridosha hara properties thus gives relief in Shramaasahayata.
- **WOMAC Scale**- we can observe that P-Values for Group A and Group B are less than 0.05 hence we conclude that there is significant change observed in both groups. On observation and scale bases group A is better than group B.
- **Haemogram** – The P-Values for Group A and Group B are greater than 0.05 hence we conclude that there is no significant change observed in both groups. We can observe that P-Values for Group A and Group B are greater than 0.05 hence we conclude that there is no significant change observed in both groups.
- **ESR** – The P-Values for Group A and Group B are greater than 0.05 hence we conclude that there is no significant change observed in both groups.

RESULT

1. In assessing over all effect of the therapy it was seen that—
2. On the basis of observations it was seen that group A (Nagaradi churna) was more effective thangroup B (Aabhadi churna) respectively.

CONCLUSION

1. There is an intimate relation between vata and kapha in sandhigata vata disease. Restoration of vata to its normal state helps in the treatment of Sandhigata vata.
2. The pathological entities in sandhivata are vyanavata, shleshakapha and sleshmadhara kala. Vata (vyana vayu) acts as the major dosha in sandhigata vata. Kapha (sleshka

kapha) and sleshmadhara kala plays a secondary role in producing the symptoms in sandhigatavata i.e sandhishoola.

3. In Aabhadi churna, katu, tikta rasa & ushna veerya causes kapha shaman reducing the sandhigatavata.Ushna veerya & madhura vipaka causes vata shaman reducing sandhigata vata.
4. In Nagaradi churna, katu,tikta rasa & ushna veerya causes kapha shaman reducing sandhigata vata.ushna veerya & tikta rasa causes shaman of vata dosha.
5. Nagaradi churna is useful in reducing 5 out of 8 symptoms of Janu sandhigatavata.
6. Aabhadi churna have better results on 2 out of 8 symptoms as compare to Janu-sandhigatavata.
7. In Joint instability Aabhadi churna is effect in bilateral and right knee joint than Nagaradi while in left knee Nagaradi is effect in left knee joint than Aabhadi churna.
8. The present study proved that Aabhadi churna & Nagaradi churna is safe, reliable and economical medicine in Janu-sandhigatavata.
9. Nagaradi churna is effective than aabhadi churna in janu-sandhigatavata.

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