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A Comparative Clinical Study of *Abhadi Vati* and *Chinchadi Taila* in *Sandhivata* w.s.r. to Osteoarthritis

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Abstract

Background:

Aim & Objective: To comparatively evaluate the clinical efficacy of *Abhadi Vati* and *Chinchadi Taila* in subjects of *Sandhivata.*

Study Design: The study has been conducted on total 30 subjects of *Sandhivata*. The patients had been randomly selected from the OPD of Sri Danappa Gurusidappa Melmalagi Ayurveda Medical College & Hospital, Gadag, Karnataka for the respective clinical trial and were divided into 2 groups i.e., Group A (*Abhadi Vati*) and Group B (*Chinchadi Taila*), respectively.

Assessment criteria: Both objective and subjective criteria of assessment were considered on the basis of relief in the signs and symptoms of *Sandhivata*.

Results: The comparative clinical trial amongst Group A (*Abhadi Vati*) and Group B (*Chinchadi Taila*), respectively result in the latter proving to be clinically more effective than the former.

Keywords

Sandhivata, Chinchadi Taila, Abhadi Vati, Comparative study, Clinical efficacy

Greentree Group

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INTRODUCTION

From the very early ages Indian physicians have identified and recorded an innumerable collection of herbs and minerals. Their studies have been proven to be so accurate and extensive that they still continue to provide a strong basis for practice and experimentations. One such example is *Sandhivata*. *Sandhivata* is the most common form of joint disorder amongst the elderly and obese persons. *Acharya Charaka* has explained *Sandhivata* as one among the *Vatavyadhi* and characterized by *"vata purna druti sparsha"* associated with *shotha* and pain during the movement of the joint.[2] *Acharya Bhavaprakasha* while explaining *Vatavyadhi* explained about *Sandhivata*.[3] In the contemporary science it is understood as Osteoarthritis.

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. It was observed in the 3rd and 4th decade and is extremely common by the age of 70 years. Almost all the persons by the age of 40 years have some pathological changes in the weight bearing joint. More than 20% females and 16% males have symptomatic osteoarthritis.

Sandhivata vis-à-vis osteoarthritis is multifactorial, non-inflammatory degenerative joint disorder. In the management of *Sandhivata*, all *Acharyas* have given prime importance to *Snehana Chikitsa*. *Snehana* can be performed both *Bahya* and *Abhyantara*. *Bahya snehas* include *Abhyanga, tarpana,* etc and *Abhyantara snehas* include *bhojana, pana, nasya and Vasti* etc.[5]

Sthoulya is another causative factor for *Vata prakopa*. The *Meda-avarana* of *Vata* is the mechanism causing inter-relationship between *Sthoulya* and *Vatavyadhis*[8]. All types of *avaranas* are important vitiating factors of *Vata*. *Vardhakya avastha* is dominated by *Vata,* during this period, *Dhatukshaya* occurs which causes *Vata prakopa*. Living in *Jangaladesha* is another cause of *Vata prakopa*. *Vata* gets vitiated at the end of day and night[9]. *Vata prakriti* persons are more susceptible to *Vata vikaras*. Persons who are *Ruksha-kashaya-katu-tikta Rasa satmya* are also more susceptible to *Vata vikara* [10].

Contemporary science has failed to find a solution for this disease. It is said that current treatment for Osteoarthritis is purely control of symptoms because there is no disease modifying Osteoarthritis drug yet[11].

Ayurveda is an established medical system, which has been developed by various ancient *Acharyas* after experiments and examinations. But in the present day it is compulsory to prove the *Ayurvedic* truths on the modern parameters, without modifying its basic structure as methodical approach is the backbone of research. Research is a scientific study through which one can establish new facts, discarding the old facts or modifying the present facts. Utmost care is taken in designing the methodology for conducting this study.

AIMS AND OBJECTIVES

The main aim & objective of the trial is to comparatively evaluate the clinical efficacy of *Abhadi Vati* and *Chinchadi Taila* in specific subjects of *Sandhivata.*

MATERIALS AND METHODS

Study design: A Simple randomized comparative clinical prospective trial.

Sample size and grouping: A minimum of 30 patients suffering from *Sandhigatavata* were randomly selected and divided randomly into 2 groups, Group A and Group B, respectively. Group A was administered with Abhadi Vati (internally). Group B was administered with *Chinchadi Taila* (externally).

Table 1 Showing the *Nidana, Lakshana and Samprapti* of *Sandhivata*[6,7]

NIDANA	***Sannikrushta Hetu:***	*Ativyayama, Abhighata, Marmaghata, Bharaharana, Sheeghrayana, Pradhavana, Atisankshobha.*
	Viprakrushta Hetu:	***Rasa***– *Kashaya, Katu, Tikta*
		Guna – *Ruksha, Sheeta, Laghu*
		Dravya – *Mudga, Koradusha, Shyamaka, Uddalaka, Masura, Kalaya, Adaki, Harenu, Shushkashaka, Vallura, Varaka*
		Aharakrama – *Alpahara, Vishamashana, Adhyashana, Pramitashana*
		Viharaja – *Atijagarana, Vishamopachara, Ativyavaya, Shrama, Divasvapna,Vegasandharana, Atyucchabhashana, Dhatu Kshaya.*
		Manasika – *Chinta, Shoka, Krodha, Bhaya*
Lakshana	*Shula, Vata purna druti sparsha, Shopha,Prasarana Akunchanayoho, Savedana pravrutti, Hanti sandhi, Atopa.*	
Samprapti ghatakas	***Dosha*** – *Vata – Vyana vata vridhi, and Kapha – Shleshaka kapha kshaya* ***Dushya*** – *Asthi, Majja, Snayu, Sleshmadhara kala* ***Srotas*** – *Asthivaha, Medovaha, Majjavaha, Mamsavaha* ***Agni*** – *Jatharagni, Asthidhatwagni,* ***Udbhavasthana*** – *Pakvashaya* ***Rogamarga*** – *Madhyama* ***Adhisthana*** – *Sandhi* ***Vyaktasthana*** – *Sandhi*	

Preparation of the trial drug: The trial drugs Abhadi Vati and Chinchadi Taila with all the constituents and metod of

preparation are mentioned in the table below.

Abhadi Vati : For the preparation of *Abhadi vati*, all the drugs mentioned in the table no.02 were taken in equal quantity and made into fine *choorna* and then *bhavana* was given with *swarasa of shunthi* and *guduchi. This was mixed into dough consistency and later pills were made out of the same.*

Table 2 ~~showing the~~ Constituents of *Abhadi Vati*[12].

Sl. No.	Drug Name	Latin Name	Proportion
1.	*Abha*	Acasia Arebica	1 part
2.	*Rasana*	Plucha lansiolata	1 part
3.	*Guduchi*	Tinospora cardifolia	1 part
4.	*Shatavri*	Asparagus recemosa	1 part
5.	*Shunthi*	Gingeber officinalis	1 part
6.	*Shatapushpa*	Anethum sowa	1 part
7.	*Ashwagandha*	Withenia sominifera	1 part
8.	*Hapusha*	Juniperous communies	1 part
9.	*Vidhara*	Desmodium gungenticum	1 part
10.	*Yavani*	Roxburghiamum ammi	1 part
11.	*Ajmoda*	Apiumgraveolans	1 part

Constituents of *Chinchadi Taila*[13]

Sl.No.	Drug Name	Latin Name	Proportion
1.	*Chincha patra*	Tamarindus indica	16 part
2.	*Eranda patra*	Ricinus communis	16 part
3.	*Prasarni*	Merremia tridentate	16 part
4.	*Varuni*	Crataeva nurvala	16 part
5.	*Snuhi patra*	Euphorbia nerifolia	16 part each
	evam danda bhaga		
6.	*Arka*	Calotropis procera	16 part
7.	*Jambiri*	Citrus limon	16 part
8.	*Shigru*	Moringa oleifera	16 part
9.	*Grinjan rasa*	Alluim sativum	16 part
10.	*Sarshapa*	Brassica jucea	1 part
11.	*Devdaro*	Cedrus deodara	1 part
12.	*Shunthi*	Zinziber officinalis	1 part
13.	*Dadhi*	16 part	
14.	*Shukta*	1 part	
15.	*Taila*	4 part	
16.	*Lavana*	1 part	

Chinchadi Taila:

For *Chinchadi Taila* preparation, all drugs mentioned above were taken and *taila* was prepared by classical methods of *taila paka vidhi*. i.e., medicated *taila* was prepared by mixing 1 part of the *kalka dravyas*, 4 parts of *taila* and 16 parts of *drava-dravya*

Taila Murchana[14]

The plain Tila taila was heated and boiled until the frothiness in it reduced. 4 parts of water along with coarse powder of triphala, musta, rajani, hrivera, lodhra, ketaki, vatankura, nalika were added and boiled on moderate heat, till only the oil portion remained.

Source of data:

Patient suffering from *Sandhivata* were selected from O.P.D and I.P.D. of

D.G.M.A.M.C & H., Gadag after fulfilling the inclusion and exclusion criteria.

Selection Criteria:

The cases were carefully and strictly chosen as per the pre-set inclusion and exclusion criteria.

Inclusion criteria:

1. Patients suffering from classical sign and symptoms of *Sandhivata.*

a) Shula

b) Shotha

c) Sthambha

d) Sparshasayyata

f)Sphutana

g) Aakunchan Prasaran vedna etc at the joint

2. Patients between the age group of 40-75 years

3. No discrimination of sex

4. Patient without any anatomical deformity (genu valgum / genu varum)

Exclusion criteria:

1. Patient below 40 and above 75 years of age

2. Pregnant woman

3. Acute joint trauma

4. Rheumatoid arthritis

5. Diabetes mellitus

6. Gouty arthritis (vata rakta)

7. Complete loss of articular cartilage

8. Polymyalgia Rheumatica

9. Phiranga Roga (Syphilis)

10. Psoriatic arthritis

11. S.L.E

Posology:

1. Abhadi Vati :- To be taken internally 500mg 2 tab. Tid with Luke warm water- Group A

2.*Chinchadi Taila*:- To be applied externally (local application)- Group B

Study duration:

Total study duration- 60 days

Treatment duration: - 30 days

Follow up: - after 30 days

Criteria for Assessment:

The diagnosis is mainly based on clinical presentation of the patient according to signs and symptoms of *Sandhigatavata* mentioned in classical texts, which are described under subjective and objective parameters.

Subjective parameter:

1. *Sandhi vedana* (Pain)

2. *Sthambha* (Stiffness)

3. *Sandhi Shotha* (Swelling)

Objective parameters:

1. *Sandhi Atopa* (Crepitations)

2. *Sparshasayyata* (Tenderness)

3. Range of motion

4. Walking time (approximate 21metres of distance).

Certain gradations and declarations are made about the data and all these parameters of baseline data to post-medication data will be compared for clinical assessment of the results. The parameters are as follows:

Overall Assessment of Clinical Response:

• Good Response: 70 % and more improvement in overall clinical parameters.

• Moderate Response: 50%-70% improvement in overall clinical parameters.

• Mild Response: 30%- 50% improvement in overall clinical parameters.

• No Response: Nothing has been changed.

Table 3 Subjective & Objective Parameters

Subjective Parameters	
Sandhi vedna **(Pain)**	Grade 0 – No Complaints Grade 1 – Tells on Enquiry Grade 2 – Complaints Frequently Grade 3 – Excruciating condition
Sthambha **(Stiffness)**	Grade 0 – Absent Grade 1 – Present
Sandi Shotha **(Swelling)**	Grade 0 – No Complaints Grade 1 – Slightly obvious Grade 2-covers well over the bony prominence Grade 3-Much elevated
Objective parameters:	
Sparshasayyata **(Tenderness)**	Grade 0 – No Complaints Grade 1 – Says the joint is tender Grade 2 – Winces the affected joint Grade3 –Winces and withdraws the affected joint.
Sandhi Atopa **(Crepitation's)**	Grade 0 – None Grade 1 – Felt Grade 2- Heard
Range of motion	Grade 0-Full movement 120° - 140° Grade 1-Limited 70° – 90° Grade 2-Nill
Walking time:	Grade 0 - up to 20 seconds. Grade 1- 21-30 seconds. Grade 2- 31-40 seconds. Grade 3 - 41-50 seconds. Grade 4 – 51-60 second

RESULTS AND OBSERVATIONS:

Table no.04 showing the subjective and objective parameters of Group A:

SIGN & SYMPTOMS	MEAN	% RELIEF	S.D	S.E	T- VALUE	P VALUE	REMARKS

	BT	AT	AF						
Sandhi Vedana	2.733	1.067	1.667	60.95%	0.617	0.159	10.458	<0.001	H.S
Sthambha	0.467	0.133	0.133	71.52%	0.488	0.126	2.646	0.019	S
Sparshasayyata	1.733	.867	0.867	49.97%	0.516	0.133	6.500	<0.001	H.S
Sandhi Shotha	1.000	0.467	0.400	53.3%	0.516	0.133	4.00	<0.001	H.S
Sandi Atopa	0.867	0.867	0.867	000%	0.000	0.000	0.000	1.00	N.S
Range Of Movement	2.867	1.667	1.533	41.81%	0.414	0.107	11.225	<0.001	H.S
Walking Time	8.3	4.2	4.3	58%	5.576	1.439	7.873	<0.001	H.S

Table.05 Subjective and objective parameters of Group B

SIGN & SYMPTOMS	**MEAN**			**% RELIEF**	**S.D**	**S.E**	**T-VALUE**	**P VALUE**	**REMARKS**
	BT	AT	AF						
Sandhi Vedana	2.600	1.467	1.133	43.57%	0.352	0.090	12.475	<0.001	H.S
Sthambha	0.467	0.066	0.400	85.86%	0.507	0.131	3.055	0.008	S
Sparshasayyata	0.867	0.467	0.400	46.13%	0.507	0.131	3.055	0.009	S
Sandhi Shotha	1.667	0.400	0.367	76%	0.704	0.182	6.971	<0.001	H.S
Sandi Atopa	1.133	1.133	000	000	0.000	0000	0.000	1.00	N.S
Range Of Movement	3.000	1.467	1.200	51.1%	0.516	0.133	11.500	<0.001	H.S
Walking Time	6.8	5.6	5.6	20.23%	4.08	1.31	5.17	<0.001	H.S

Table 06 Comparative study of Group A and Group B:

SIGN & SYMPTOMS	**MEAN DIFFERENCE**		**% RELIEF**		**T- VALUE**	**P VALUE**	**REMARKS**
	Group A	Group B	Group A	Group B			
Sandhi Vedana	1.667	1.133	60.95%	43.57%	2.907	0.007	S
Sthambha	0.333	0.400	71.52%	85.86%	-0.367	0.716	N.S
Sparshasayyata	0.867	0.400	49.97%	52%	2.497	0.019	S
Sandhi Shotha	0.533	1.267	53.3%	76%	3.254	0.003	S
Sandi Atopa	0.000	0.000	00%	00%	0.00	1.000	N.S
Range Of Movement	1.200	1.533	41.85%	51.1%	1.950	0.061	S
Walking Time	4.1	1.2	58%	20.23%	2.070	<0.05	H.S

Table 7 Distribution of Overall Response to the treatment

	Group A (%)	**Group B(%)**	**Total(%)**
Good Response	3 (20%)	5 (33.33%)	8 (26.66%)
Moderate Response	6 (40%)	8 (53.33%)	14 (46.66%)
Mild Response	2 (13.33%)	2 (13.33%)	4 (13.33%)
No Response	4 (26.66%)	0	4 (13.33%)

DISCUSSION

After observing the clinical parameters, the effect of the therapy has been graded into four categories, they are Good response, Moderate response, Mild response, No response.

- Group A: Out of fifteen patients, 03(20%) showed Good response to the treatment. 06 (40%) showed Moderate response and 02 (13.33%) patients showed Mild response. 04(26.66%) patients showed no response.
- Group B: Out of fifteen patients, 05(33.33%) showed Good response to the treatment. 08 (53.33%) were showed Moderate response and 02 (13.33%) patients showed Mild response. 00 patients shown No response**.**
- Out of thirty patients, 08(26.66%) showed Good response to the treatment. 14(26.66%) were shown with Moderate response and 4(13.33%) patients show Mild response. 04(13.33%) patients show No response**.**
- Both the formulation proved to be effective on the subjects of *Sandhigatavata.* Among both the groups Group B reaches out to most of the subjects by relieving their signs and symptoms than Group A. The statistical analysis has proven that Group B responded better than Group A..

Probable mode of action of *Abhadi Vati* and *Chinchadi Taila*[15,16]

- *Acharya Yogaratnakara* has mentioned *Abadi Vati* in context of *Vatavyadi chikitsa*. This is indicated for all types of *vatavyadhi* so it considered in treating *Sandhigatavata* also
- The ingredients such as *Ashwagandha, Shatavari, Guduchi* act as *Rasayana.* This is very helpful in the management of *Sandhivata* in which the *dhatu kshaya* is the main symptom.
- This in combination with *Shunthi, Ajavayana, and Shoupha* will act as *deepana and pachana* in action because of *katu rasa pradhanyata* which helps in *samprapti vigatana of sandhivata*, and does *sroto shodhana.*
- The *teekshna guna* of drugs like *Ajmoda, Yavani,Shoupha* and *Hpusha* act as *kapha vatahara.*
- *Laghu guna* of *shunthi, ashwagandha, and guduchi* leads to *sroto shodhna* as it is responsible for *ushna virya* which inturn is *vatahara*.
- The drugs like *Ajamoda, Yavani, Hapusha, Shoupha and Shunthi* does the *Shoola prashamana* and act as *shoothahara.*

- *Rasayana* action of vidara, *shatavari, ashwagandha and guduchi* along with *vedana shaman* property of rasna is observed.
- The formulation of *Chinchadi Taila* is described in *tailaprakarana* chapter of *Sahastrayogam.* It consists of more than 15 herbal ingredients along with *saindhava lavana, taila* and *saktu kalpana* of *Sandhana varga.*
- The *madhura rasa of chincha, eranda and grinjana* does the *vata shamana* along with the *amla rasa of jambiri.*
- In combination with these drugs like *jambhiri, arka, eranda, shunthi and snuhi* act as *kapha vatahara and laghu guna* of *sarshapa, shigru and varuni* does the *sroto shodhana.*
- All the drugs present in *chinchadi taila* are *ushna virya* which directly subsides the aggravated *vata* and the *ruksha guna of katu vipaka* of drugs like *snuhi, lahshuna, arka, parasrni, devadaroo, varuni and shigru act as shothahara* .
- Amla vipaka of chincha and jambiri along with madhura vipaka of eranda and shunthi possessing snigdha guna will result in dhatu poshana and subsides *vata.*
- Drugs like *shunthi, devadaroo, arka, chincha, and shigroo* possessing *Ruksha guna* are useful in *shotha*, drugs like *snuhi, sarshapa, lahsuna and eranda* possessing *snigdha guna* subsides *vata* along with providing tonicity to the tissues and pharmacologically acting as *balya.*
- The above commemoration of the specific property and action of the individual drug draws a conclusion that Abha, Chincha and other ingredients as a whole reduce the *pratyatma lakshanas* like *Sandhi vedana, Atopa, Shotha, Sthambha, Sparshaasayyata etc.*

Metabolism of Abhadi vati and Chinchadi Taila:[17,18,19]

- There is an understanding of the specific anti-inflammatory, anti-oxidant, immune stimulant and spasmodic action of the drugs like *Abha, Rasana, Guduchi.*
- The contents in *Chinchadi Taila* like *Arka, chincha* and *snuhi* exhibit anti-inflammatory, anti-oxidant and analgesic action.
- Drugs like *Shatavari, Ashwagandha and Shoupha* exhibit anti-inflammatory and anti-oxidant activity.
- *Abha* possesses anti-inflammatory and anti-oxidant properties.
- *Rasana* exhibits anti-inflammatory, anti-oxidant and spasmolytic action.

- *Guduchi* has anti-stress, immune-modulatory, anti-inflammatory, anti-oxidant and anti-spasmodic effect.
- *Shatavari* is both anti-inflammatory and immune-modulator in action.
- *Satapushpa* acts as an anti-inflammatory effect.
- *Ashwagandha*, is immuno-modulatory, anti-inflammatory and immune stimulant in action. It also reduces the debility due to stress.
- Also the drugs like *Eranda*, *Jambeera*, *Prasarini* and *Varuni* exhibit anti-inflammatory and antioxidant activity.
- *Lasuna* acting as an analgesic and anti-inflammatory drug.
- *Sarshapa* acts as an anti-oxidant.
- *Shigru* acts as an analgesic.

SUMMARY & CONCLUSION

Sandhi is not a single structure rather it is considered as an organ. There are different structures, which helps in maintaining the stability of the joint. *Snayu* or ligament helps in proper binding of the joint. They unite the bones and help to direct the bone movement and prevent the excessive and undesirable motion. Muscle tone helps to maintain the alignment of the joint. *Shleshmaka Kapha* or Synovial fluid, which fills up the cavities, occupies the Synovial joint, bursae and tendon sheaths. It provides the lubricant factors, nutrient to the cartilage, disc and helps in keeping the joint firmly united. *Shleshmadharakala* situated in the joints supported by *Shleshamka Kapha* helps in lubrication.

Statistically, Group B leads Group A in response with the treatment of patients. Although the latter out beats the former, still the numbers in Group A depicts that the subjects of *Sandhigatavata* also found relief in the signs and symptoms.

Conclusively, all the drugs present in *Chinchadi taila* and *Abhadi Vati* are *vata shamaka*. The drugs directly act on *Sandhivata* and reduces his symptoms. The patients were administered with *Abhadi Vati*, internally and *Chinchadi taila* for *Abhyanga*, externally wherein all parameters like *Sandhi shotha*, *Sandhi Graha*, *Sandhi Atopa*, Range of movements, *Sparshaasayata* etc. patients got good relief.

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