



Effect of Yoga Basti in the Management of Sandhivata a Clinical Study

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Yoga basti a type of basti explained to treat many diseases in Ayurveda when basti given for 8 days in respective diseases like Sandhivata, Janusandhi vata and sarvanga vata. Basti is one among the panchakarma procedure, there are many references of bastis available in veda, purana, yogic and samhita, where the medicated oil or decoctions or other medicated preparations introduced through the anus or urethra or vagina. Panchakarma -5 purificatory procedures of body, which helps to cure the diseases and prevents the further progress of diseases. Basti is called 'chikitsardham' because vata dosha is independent dosha which is responsible for all activities in body, the site Vata dosha is basti (Bladder region) pradesha. The diseases where vata dosha is mainly vitiated in such condition basti chikitsa is the choice of treatment to treat the disease without any complications. In basti chikitsa the medicines are pushed through anus or urethra or vagina which reaches basti Pradesha and where it will exhibits its effect to cure the diseases and the medicines inserted will not remain in body, it is expelled out from the body. According to modern science recent researches identified as Gut is the second brain in the body. Which helps for the

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absorption medicine and initiate necessary healing process to overcome from the disease. In this study the effect of Yogabasti in the patient suffering from sandhivat is assessed.

Keywords: Basti chikitsa; chikitsardham; yoga basti; sandhivata; gut; anal route.

1. INTRODUCTION

According to Ayurveda, free from disease is not only good health but to be healthy, a person should be happy mentally, physically – strong, socially and spiritually wellbeing. Disturbance in Dosha is called as Roga. Among Tridosha, Vata is responsible for almost all diseases. Sandhivata is explained under Vatavyadhi in all the Samhita and Sangraha Granthas. In jaraavastha, all Dhatus undergo Kshya, thus leading to Vataprakopa and leading individual prone to many diseases [1,2]. Among them Sandhigata Vata comes first in the list. Acharya Charaka was the first person who described the disease separately named “Sandhigata Anila”, but has not included under 80 types of Nanatmaja Vyadhi and listed Vata Vyadhi as a Maharoga. Sandhigata Vata is a major disease and one of cause for disability and decrease the quality of life. According to world health organization osteoarthritis-(sandhivata) is the second commonest musculoskeletal problem in the world populations.

The deformity of Sandhis is due to Prakupita Vata act as the main phenomena in Samprapti of Sandhigata Vata. Sandhis-joints consider under the Madhyama Roga Marga and , involvement of Madhyama Roga Marga, Vata Dosha and Dhatukshaya leads to diseases as Kashta Sadhya (difficult to treat. According to modern science, Osteoarthritis is the most common articular disorder begins asymptotically in the 2nd and 3rd decades and is extremely common by age 60. Almost all persons by age 40 have some pathologic change in weight bearing joint. 25% females and 16% males have symptomatic OA .Indians are said to have increased knee OA as compared to western population (6). The disease Osteoarthritis may be regarded as a reward of longevity. It seems man has paid price for standing on hind limbs in form of osteoarthritis of weight bearing joints of the body [3]. The disease arthritis causes work disability. It limits everyday activities such as walking, dressing, bathing etc., thus making individual handicapped. No treatment is available which can prevent the disease process. In Western Medical science, mainly analgesics, anti-inflammatory drugs or surgery are the options for the treatment of

Osteoarthritis, don't provide remarkable recovery, but causes great adverse effect. Researchers are trying their level best for making drugs which can prevent or slow down or reverse joint damage. A common treatment for Vata Vyadhi has been described by Acharya Vagabhatai.e. Repeated use of Snehana (Oleation)

According to Acharya Vagbhat in sutra sthana,-, according to dosha and dushya, medicines should be combined and basti administered is called asthapan basti, shloka- 5, niruha basti is the one which acts according to its veerya and prabhav, which can be assessed by symptoms in body, including parameters like basti pratyagamana kala, sharira laghuta, agni, bala associated chief complaints can be noticed after the administration of basti. according to acharya sushrut in chikitsa sthana 35th, basti is a procedure, which nourishes the body as watering plants near the roots, roots absorb water and reaches upto leaves, similarly the medicines through basti reaches all parts of body, according to acharya charaka sidhi sthana 7, the veerya of medicines through basti nourishes from apana, samana, vyana, udana and prana vayu in sequence. Various toxins entering our body by food, air etc. get accumulated in our gastrointestinal tract. As time passes these toxins tend to increase and get spread in all channels of our body causing various diseases. These accumulated toxins in the form of dosha if expelled out at right time can prevent the disease [4,5].

Types of Basti -Basti can be given by two ways

- a) External b) Internal –
 - a- Janu basti, Kati basti , Manya basti, Vrana basti, Hridaya basti,
 - b- Aasthapan basti, Anuvasana basti, Matra basti, Uttar basti

External basti • in this basti, warm medicated oil is pooled over specific parts of body by a special arrangement for local pain relief. • Janu , kati and manya basti can be used over knee, back and neck region for corresponding conditions of pain. • Vrana basti is used over wounds for relieving pain and for rapid healing.

Janu basti Kati basti Kati basti
Medicated oil pooled over knee joint for relieving pain Oil over back for relieving backache

Manya basti Hridaya basti Medicated oil pooled over neck region Oil over chest region to relieve chest pain in heart disorders

Anuvasana and Niruha basti - Asthapan or Niruha basti is the one in which medicated decoctions are inserted into anal canal by basti netra (now a day's using rubber catheter). These decoctions remain inside the colon for certain time of period and are then expelled out along with the doshas., In Anuvasan medicated oils are used for the same purpose.

Matra basti - In Matra basti less quantity of oil is used as compared to anuvasana basti and it does not need to be accompanied by any strict dietary restriction or daily routine and can be administered, in all seasons. Route of administration is same as that of anuvasana and niruha. These are the major types of basti among each other given in 8 days.

2. MATERIAL AND METHODS

Aim: observational study of yoga basti in sandhivata

Objectives: To evaluate the effect of yoga basti in Sandhivata in selected 30 patients.

Inclusion criteria: male and female from 40 to 60 years

Exclusion criteria: associated with cardiac, uncontrolled hypertension, diabetes, h/o trauma, and operated cases

2.1 Materials

Anuvasa basti with Murchita tila taila (Medicated oil)-60ml

Niruha basti prepared by mixing following drugs – 450ml

- 1- Makshika- 30 ml
- 2- Saidhava lavana -2 gms
- 3- Sneha davya –dashamula taila- 50ml
- 4- Kalka -15gms
- 5- Kwath-dashamula and eranda mula kwath -350ml

2.2 Methods

Steps in Basti 1. Poorvakarma (Pre therapeutic preparation) – these are the preliminary steps done before undertaking the basti therapy -:

- Deepan – it ignites the digestive fire which has weakened in the disease process
- Pachan – it tries to digest the accumulated toxins
- Snehan – it involves oil application externally.
- Swedan – it is steam induced sweating for toxin clearance.

Snehan and swedana Snehan and swedana provides lubrication and strength to the body for the upcoming detox therapy. Snehan helps in loosening of toxins from their sites which are then dislodged by swedana. These dislodged toxins are then easily expelled out of the body by the basti therapy [6].

Here proper counselling done to patient and by taking the procedural consent the procedure begins. Before starting the procedure sthanika – local abhyanga done with tila taila followed by nadi swedana.

2.2.1 Pradhan karma (Main therapeutic administration of medicine)

This includes the actual process of administering basti

Procedure:

1. Anuvasana basti: Local snehana and sweadana is done for patient and asked to have the food. Immediately after taking food the patient is adviced to lay on left lateral position and medicine is administered through anal route similarly like enema slowly.

2. Niruha basti: Local snehana and sweadana is done for patient and medicine is administered anal route on empty stomach.

The course of instillation of medicine is followed classically and observations done as shown in Table-1

2.2.2 Paschat karma (Post therapeutic mesures)

Is to help in regaining the normal functioning of body and agni. This includes various rules to be followed after having Panchakarma-. Diet, Behavioural, Physical Psychological rules.

Table 1. As per the requirement basti can be administered in 3 courses. Type of basti course Niruha basti Anuvasan basti Total basti as 8 in numbers in this article used for yoga basti as

Basti name and Day	Anuvasana basti-1	Niruha basti=2	Anuvasana basti-3	Niruha basti-4	Anuvasana basti-5	Niruha basti-6	Anuvasana basti-7	Anuvasana basti-8
Basti pratyagama kala	4 hours	15 min	3 hrs	10min	2hrs	10min	App 2 hrs	1hr 45min
Basti vyapat	No	Slight burning sensation	no	Slight burning sensation	No	Little discomfort	No	No

3. OBSERVATIONS AND RESULTS

Table 2. Observations- score for pain, stiffness and physical function domain in sandhivata patients

Remarks	Day-1	Day-2	Day-3	Day-4	Day-5	Day-6	Day-7	Day-8	Ref
Pain	8	8	7	7	6	6	5	4	UPAT
Stiffness	Moderate	Moderate	Moderate	Mild	Mild	Mild	no	No	WOMAC
Sleep	Disturbed	Disturbed	Adequate	Sound	Sound	good	good	good	
Appetite	Reduced	Good	Good	Good	good	good	good	good	
Quality of life	With difficulty	With difficulty	improved	Improved	Improved	improved	good	good	WOMAC

3.1 Criteria for Assessment (Table 3)

Table 3. Subjective and Objective parameters

Grade	Pain	Stiffness	Tenderness	Range of movement at flexion of knee joint	oedema	Knee flexion by Goniometer
Grade-0	No pain	No stiffness	No tenderness	101-120 degree flexion	No oedema	Up to 130 Flexion and above (Normal)
Grade-1	Pain observed on excessive work with joint involvements, normal routine activities will not being get hampered	Mild stiffness	Patient says-pain	81-100 degree flexion	Swelling slightly covering only the bony prominence.	Up to 120 Flexion (Mild)
Grade-2	Pain increased on little workinvolving joint movement, but gets relieved by rest.Normal routine activities being slightly hampered.	Moderate stiffiness	Grade 1 + patient winces and with draws the affecte	61-80 degree flexion	Completely covering all the body prominence	Up to 100 Flexion (Moderate)
Grade-3	Severe and persistent pain ,sleep disturbance and quality of life reduced	Severe stiffness	Not allow to touch knee joints	0-60 degree flexion	Present all over the joints	No improvement on Knee flexion and above. (Severe)

Table 4. Observations and Results: Age wise distribution of patients

Age-years	Number- single group	%- single group
40-45	8	26.3
46-50	5	16.3
51-55	2	6.4
56-60	6	19
61-65	4	19
66-70	5	13

Table 5. Sex wise distribution of patients

Sex	Number	%
Male	15	45
Female	15	55

Table 6. Distribution of patients based on Occupation

Nature of work	Number	%
Mild strenuous	5	13
Moderate strenuous	15	60
Sedentary	10	27

In the current study observations were made on various grounds to have evidence on various factors. In total 30 patients were registered, who were suffering from sandhivata [OA of knee joint] for this single group study. Maximum incidence of sandhivata was found in the age group of 40-45 years (Table 4) Incidence of sandhivata was found to be a maximum of 55% in females (Table 5). Maximum numbers of patients registered for the study having moderate strenuous work with a percentage of 60% followed by mild strenuous work with a percentage of 13% and sedentary work with a percentage of 27%.(Table-6). Among 30 patients of the study 66.67% patient were used to do Vyayama and the remaining did not.

60% of patients weighed between 61-70 kgs, 3% weighed between 71-80kgs, 17% between 51-60kgs, 10% between 81-90kgs and 10% had weight between 41-50 kgs. Maximum incidence of about 67% of patients had duration of illness for more than 5 years, between 1- 3yrs followed by 27% of patients with duration of less than 1 year. 10% of patients gave history of illness between 3-5 yrs and 6% had the complaints for duration of more than 5 yr.

- Pain – universal pain assessment tool
- Stiffness – WOMAC score
- Sleep, Appetite, Quality of Life- WOMAC score
- Data collection – 30 patients of sandhivata from Khemdas Ayurveda Hospital, advised yoga basti and shaman oushadhi
- Results – as received from statistical data
- Straight leg raise with pain reduced in 80% patients
- Straight leg raise with stiffness reduced in 65% patients
- Gait become normal in 70% patients
- Stair climbing difficulty reduced in 80% patients
- Pain during flexion of knee joints reduced in 70%
- Pain during extension reduced of knee joints in 78%

Table 7. Distribution of patients according to duration of illness

Duration of illness	Number	%
Less than 1 year	4	10
1-2years	4	10
2-3 years	3	6
3-4 years	2	7
More than 5 years	17	67

Table 8. Presentation of statistical data

Criteria	Pain	Stiffness	Swelling	Fatigue	Restricted movement	Deformity	Goniometer
Mean	BT 2.6	2.37	1.9	2.6	2.1	1.44	1.6
	AT 0.6	0.48	0.23	0.4	0.42	0.3	0.7
Mean difference	2.1	2	1.5	1.8	1.6	1.5	1.1
%	80	84	95	87	90	75	80

Table 9. Overall result of treatment

SL NO	Criteria	Number	%
1	Poor Improvement [0-25%]	0	
2	Mild Improvement [26-50]	0	
3	Moderate Improvement [51-75]	8	23.7
4	Marked Improvement [76-99]	15	56.3
5	Cured [100]	7	20

4. DISCUSSION

In yoga basti, 8 basti are given in total, in this procedure first anuvasana basti should be given followed by 3 niruha and anuvasana basti are given alternatively and at the end again one anuvasana basti should be given. In the beginning, one Anuvasana Basti and at the end, 3 Anuvasana Basti were given for the purpose of snehana. Dashamoola taila is indicated in vata vyadhi and Erandamooladi kwatha and dashamoola kwath are useful for niruha basti in vata vyadhi. Erandamooladiniruha basti has been classically advised in vitiated Vata condition and especially in Vata vitiated in Janu pradasha and hence the same drug was chosen for present study. Basti Chikitsa is considered to be the best for Vata dosha, which is the main in sandhivata. All of symptoms including joint deformity are mainly due to Vata vitiation. Drugs used here for Basti Karma are mainly acting on Vata dosha and regulates Vata dosha activity all over the body. Seers mentioned qualities of Dashmoola like Shothahara (anti-inflammatory), Vatahara (nullifies vata dosha), ushna (hot), etc. Studies also reported anti inflammatory, analgesic, and anti-pyretic, effect of Dashamoola.

The basti administered into the Pakvasaya, how it reaches to the whole body and cures the diseases of all over the body explained by Acharya Susruta has told that the virya of basti drug reaches all over the body through the srotas in the same way as the water poured at the root of the plant reaches up to leaves. He has further explained that even though basti drugs quickly comes out with mala and their virya acts all over the body by the action of apana vayu and other vayu. The action takes place just like as sun draws moisture from earth. Parashara had highlighted the importance of guda, by saying that guda is mula for all the siras in the body, hence the medicine administered through guda reaches up to head and nourishes the body.

Basti karmukta virya of basti apana vayu tripti samana vayu tripti vyana vayu tripti udana vayu

tripti prana vayu tripti normalcy of pitta & kapha sarva sharira poshana [7]

4.1 Modern View

By Enteric nervous system (ENS) The enteric nervous system or intrinsic nervous system is one of the main division of the nervous system and consists of a mesh like system of neurons that governs the function of the GIT system.. During embryonic development, the ENS is formed from the same chunk of tissue from which the CNS is formed. This tissue is called the neural crest. The fact that these two system share the same origin makes it less surprising to find that they contain some of the same type of cells, neurotransmitters, brain proteins and that one affects the other [8].

It is now usually referred to as separate from the autonomic nervous system since it has its own independent reflex activity ,ENS consist of some 500 million neurons so called as Second Brain

- The enteric nervous system is embedded in the lining of the GIT system, beginning in the oesophagus and extending down to the anus [9].

The neurons of the ENS are collected into two types of ganglia:

- 1) Myentric (Auerbsch's plexus)
- 2) Submucosal (Meissner's plexus)

- The ENS is capable of autonomous functions such as the coordination of reflexes; although it receives considerable innervation from the autonomic nervous system so it can does and operate independently of brain and spinal cord. It possesses neurotransmitters and proteins that zap message between neurons.
- Major neurotransmitters like serotonin, dopamine, glutamate, norepinephrine and nitric oxide are found in the gut [10].

Also two dozen small brain proteins called neuropeptides are there along with the major cells of immune system.

- The brain sends signal to the gut by talking to a small number of command neurons which in turn sends signals to the gut interneuron.
- Both command neurons and interneurons are spread throughout the two layers of the gut.
- ENS works in synergism with the CNS.

Stimulation of basti either by chemo or mechano receptors may lead to activation of concerned part of CNS which precipitates result accordingly.

- Again it is not mandatory for a drug to stay in long time contact to the receptor e.g. Like in proton pump inhibitor where drug interacts and flush out from circulation, it is known as HIT & RUN MODULE of pharmacodynamics.
- Same module of pharmacodynamics may be hypothesized for Niruha basti [11].

4.2 Chemical and Mechanical Stimulation

Niruha basti is a hyperosmotic solution which causes movement of solvent from cells of colon to the lumen.,It facilitates the absorption of endotoxin and produce detoxification during elimination.,Kalka used in basti has got irritant property along with other ingredients which may induce colonic distension, The distension stimulates pressure which produces evacuatory reflex. The sigmoidal, rectal and anal region of large intestine are considerably better supplied with parasympathetic fibres than other part of intestine [12]. They are mainly stimulatory in action and function especially in defecation reflexes. A volume of about 100cc of gas is estimated to be present in the tract which is readily expelled by basti. Even though the basti given is expelled out immediately as such or mixed with faeces, the virya of basti is spread throughout the body by the vata.

4.3 Rationality behind Absorption of Basti

Drugs can be absorbed well from intestine than from stomach because of large surface area. Increased vascularity can increase absorption [13]. Absorption of drugs from gut occurs by passive diffusion. Passive diffusion is a movement of ions and other atomic or molecular

substances across cell membrane without need of energy input unlike active transport. Drugs which are lipid soluble are mostly transferred by passive diffusion. A basti drug is prepared by mixing of snehas with other ingredients up to homogeneous mixture. So this concludes that basti drug absorb in gut by passive. . Good gut taking control of body weight, mood, long term health. basti is a procedure done in gastrointestinal tract ..where numerous neurons connects GIT to brain ..yoga basti involves 8 days anuvasana basti- 5 and niruha basti -3 starts with one anuvasana basti and ends with 2 anuvasana basti. GUT involving 4 properties

- 1- Absorption
- 2- Biology,
- 3- Neural Stimulation,
- 4- Excretory Mechanism [14]

Thus the action of yoga basti noticed and documented in Sandhivata.

5. CONCLUSION

The interventional study done on 30 patients of sandhivata who are advised for yoga basti, which shown good improvement in the management of sandhivata and also improvement in Quality of life is observed.

ETHICAL APPROVAL

The ethical clearance was obtained from IEC-PIARHR, "All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki."

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

LIMITATION OF STUDY

Sample size for study is less.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely

no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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