



# International Journal of Innovative Pharmaceutical Sciences and Research

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## CLINICAL STUDY TO EVALUATE THE EFFICACY OF PADAABHYANGA IN NIDRANASHA W.S.R. TO INSOMNIA

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### Abstract

All Acharyas considered the importance of Nidra, hence Nidranasha are explained along with physiology of Nidra only. Anidra or Alpa Nidra is seen in many diseases as a Lakshana and it may be Upadrava or Arishta Lakshana also. The Acharyas considered its independent manifestation too as a disease. Pada Abhyanga is one of the vitality enhancing technique which is incorporated in massage of feet in Ayurveda. According to Acharya Sushruta, by Pada Abhyanga it brings good sleep, pleasing to body and eye, removes fatigue, numbness and imparts softness to the skin. In the classical texts of Ayurveda, Pada Abhyanga as a Dincharya aspect, if done regularly, it will help people to improve their stability, strength of feet and prevent the feet from cracking of soles, roughness, coarseness, numbness. Snehana in the form of Pada Abhyanga, is one of the most important preventive procedure practiced till today from the days of ancient Acharyas. For clinical study total 15 patients were registered from O.P.D. and I.P.D. of K.V.G. Ayurveda Medical College and Hospital, Ambatedka. Result of the study revealed that Pada Abhyanga with Tungadrumadi Tail effective in reducing the sign & symptoms of Insomnia as well as physical assessment.

**Keywords:** Nidranasha, Insomnia, Padabhyanga.

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## **INTRODUCTION**

Nidra is the most essential for sustenance of the life and it is a stage for happiness. Ayurveda has revealed many secrets to overcome this obstacle so that the important needs of the living beings to fulfill the personal needs, to carry out daily activities and is essential for survival. Nidranasha is one such disorder which affects the above needs and quality of life. Acharya Charaka has mentioned Nidra as one among the Trayo upastambha [1] which is an essential factor to lead a healthy life. Further he mentions Sukha, Dukha, Pushti, Karshya, Bala, Dourbalya, Purushatva, Klaibyata, Jnaana, Ajnaana, Jeevitha and Mrityu all are depended on proper and improper Sleep. Nidranasha is one among the Vataja Nanatmaja Vyadhi, which is more prevalent in the present day due to target oriented work, extended working hours, nuclear families and stress. It is characterized by Angamarda, Pada Gourava, Jrumba, Jadya, Glani, Bhrama, Tandra, Apakti and Vatarogas [2]. The loss of sleep is not found in all Vata rogas, but it is found in those diseases where the Shula (pain) exists, viz. Pindikodveshtana (cramps), Gridhrasi (sciatica), Udavarta (flatulence in stomach), Akshepaka (convulsions). From Manastapa – all the psychic conditions – like worry, anger, mania etc. can be taken [3]. Proper sleep plays an important role in maintaining health, proficiency and state emotional well-being [4]. The modern medical science is still not having a definite treatment for insomnia. Although hypnotics, sedative, anxiolytic, psychotropic are evolved they have got their own limitations because of their hazardous adverse effects. Such modern anxiolytic drugs have limited application due to their addiction, resistance and producing variety of neuroendocrine and hepatic side effects. Therefore, such agents cannot be safe for a long period [5]. Hence, it becomes imperative to search out the drugs which are safe and effective from natural systems of medicine like Ayurveda which can help patients of insomnia. Pada Abhyanga is one of the vitality enhancing technique which is incorporated in massage of feet in Ayurveda. According to Acharya Sushruta, by Pada Abhyanga it brings good sleep, pleasing to body and eye, removes fatigue, numbness and imparts softness to the skin [6]. According to Acharya Charaka by massaging the feet with oil it reduces roughness, immobility, dryness, fatigue and numbness; it imparts strength, steadiness and tenderness to the feet. It is beneficial to the eyes and reduces Vata Dosha. It helps in preventing Gridhrasi Vata, cracking of foot and prevents constriction vessels and ligament of feet [7]. According to Acharya Vagbhata by massaging the feet it brings strength to the feet, promotes good sleep, improves vision and cures loss of sensation, tiredness, stiffness, contractures and cracking of feet [8]. According to Acharya

Yogaratanakara by massaging the feet it brings strength, induces sleep, beneficial to eyes and reduces tiredness, giddiness and stiffness of the body. Also Acharya Yogaratnakara mentions the Vishesha Guna of Pada Abhyanga as: A person who undergoes Pada Abhyanga with Taila will not suffer from any disease just as snakes do not approach eagles [9]. In this study Kharapaka Tungadrumadi Taila was prepared as per the procedure mentioned in Sharangdhara Samhita and it was used for Pada Abhyanga. Tungadrumadi Taila [10] is mentioned to be beneficial in Nidranasha as ingredients of Tungadrumadi Taila are having Shita Virya, Snigdha Guna, Vata-pittahara property and has Karmukata as Akshitarpaka, Snehana and Nidrajanaka. Hence in this study Tungadrumadi Taila was chosen for the purpose of Pada Abhyanga. This study was designed to evaluate the Efficacy of Pada Abhyanga with Tungadrumadi Taila in Nidranasha w.s.r. to Insomnia.

### AIMS AND OBJECTIVE

- To Evaluate the Efficacy of Pada Abhyanga with Tungadrumadi Taila in Nidranasha.
- To study the mode of action of Pada Abhyanga in Nidranasha

### MATERIAL AND METHOD

1) **Sample size:** 15 Patients suffering from Nidranasha were selected from O.P.D and I.P.D of Panchakarma and Kayachikitsa departments and also from mobile camps of K.V.G. Ayurveda Medical College and Hospital, Sullia after fulfilling the inclusion and exclusion criteria.

2) **Drug source:** Raw drugs for Tungadrumadi Taila were collected and prepared in K.V.G. Ayurveda Pharma, Sullia.

**Table 1: Showing the ingredients of Tungadrumadi Taila<sup>11</sup>**

Sr. no.	Ingredients	Quantity
1	Yastimadhu	125gm
2	Chandana	125gm
3	Usheera	125gm
4	Neelotpala kanda (ardra)	250gm
5	Shati	125gm
6	Tila Taila	5ltr
7	Narikela jala	20ltr
8	Ksheera	2ltr
9	Water	20ltr

### (3) Selection Criteria

#### (a) Inclusion Criteria:

- Patients presenting with the Lakshanas of Nidranasha.
- Patients above 18 and below 60 yrs. of age.
- Patients of both genders are included.

#### (b) Exclusion Criteria:

- Patients below 18 and above 60 yrs. of age.
- Patients who are unfit for Abhyanga according to Ayurveda classics.
- Patients who are suffering from other systemic diseases which interferes with the course of treatment.

(c) **Diagnostic Criteria:** The diagnosis is based on the classical signs and symptoms of Nidranasha such as Angamarda, Padagaurava, Jadya, Glani, Jrumba, Bhrama and Apakti.

#### (4) Treatment protocol

**Pada Abhyanga with Tungadrumadi Taila:** 15 patients fulfilling the inclusion criteria were randomly selected and Pada Abhyanga with Tungadrumadi Taila for seven days was given.

##### a) Method of Pada Abhyanga

###### Requirements

Table for Abhyanga.

Bowl of 100ml capacity to take oil.

Tungadrumadi Taila for application.

Water bath for heating oil.

Bengal gram powder for cleaning oil.

###### Poorva Karma

After evacuation of bowel and bladder patient was asked to wash feet thoroughly with warm water and dry the feet and patient was made to lie on Abhyanga table in supine position.

###### Pradhana Karma

Oil was heated on a water bath and it was made Sukhoshna i.e., near about to body temperature. This warm oil was smeared to the feet both in its plantar and dorsal aspects up to ankle. Following this, massage was done by moving palms in distinct directions. It include following steps.

- Linear manoeuvre on the foot
- Linear manoeuvre on the sides of the foot

- Linear manoeuvre on the dorsum of foot
- Thumb poking on the soles
- Linear manoeuvre on the soles
- Circular manoeuvre on the pads
- To & fro manoeuvre on the soles
- Linear & circular massage on toes
- Linear massage on web spaces

### **Paschat Karma**

After following this procedure; the patient was asked to rest on the chair for about 15 – 30 minutes and then advised to take head bath with hot water. Instead of soap, flour of the Bengal gram was used to cleanse the oil.

### **Follow up study**

The patient was asked to follow a Pariharakala of 14 days and was asked to report on 21st day counting from the day the treatment schedule started. On the 21st day the final assessment readings were taken for the Statistical study.

### **Posology**

As per classics there is no standardized dosage for oil used for Abhyanga. Quantity sufficient oil was used for Pada abhyanga. In this study 25-30ml oil used.

### **ASSESSMENT CRITERIA**

#### **Subjective Criteria**

- a) Angamarda
- b) Padagaurava
- c) Jumba
- d) Jadya
- e) Glani
- f) Bhrama
- g) Apakti

#### **Objective Criteria**

In scoring the PSQI, seven components are derived, each item is scored from 0 (no difficulty) to 3 (severe difficulty). The component scores are summed to produce a global score (range 0 to 21). Higher scores indicate worse sleep quality.

### Interpretation of scores:

- 0–7-NoclinicallysignificantInsomnia.
- 8–14-SubthresholdInsomnia.
- 15–21-ClinicalInsomniaofmoderateseverity.
- 21–28-Severe clinical Insomnia.

### Global PSQI Score:

Sum of seven component scores:

Assessments of the condition of the patient were done before the initiation of the treatment (0day), during 8<sup>th</sup> day of the treatment and on the last day of the treatment (21<sup>th</sup> day).

**Statistical analysis-** Appropriate statistical methods viz., Descriptive Statistics, WILCOXON and Friedman’s test were employed for the data collected and analysed and MANN WHITNEY’S TEST was used to evaluate the difference between results of two groups.

**Table 2: Showing overall assessment of clinical response**

Complete relief	100% relief in sign and symptoms of Nidranasha
Marked relief	75-99% relief in signs and symptoms of Nidranasha
Good relief	50-75% relief in signs and symptoms of Nidranasha.
Moderate relief	25-50% relief in signs and symptoms of Nidranasha.
Mild relief	1-25% relief in signs and symptoms of Nidranasha.
No relief	0% No change in signs and symptoms of Nidranasha.

## OBSERVATIONS AND RESULTS

**Table 3: effects of Pada Abhyanga on symptoms of Nidranasha**

Symptoms	Mean Rank	IQ Range		Mean Rank	IQ Range	Improvement (Wilcoxon)		Significance (Friedman’s test)
B.T	2.9	0	BT-AT	7.5	0	57.2	<0.001	<0.001
A.T	1.43	0	AT-FU	0	0	-25	>0.05	
F.U	1.67	0	BT-FU	7	0	46.5	<0.001	

The Mean Rank of symptoms before treatment is 2.9 with the Inter Quartile range of 0 and after treatment the Mean Rank became 1.43 ( IQ Range of 0 ) and in after follow up Mean Rank1.67 and using Friedman’s Test is highly significant ( i.e. <0.001 ). The improvement after treatment was found to be 57.2% with P <0.001 which is highly significant. After follow up the improvement was 46.5% and it is highly significant.

**Table 4: showing the result of Subjective criteria on Sleep Quality**

C1	Mean Rank	IQ Range		Mean Rank	IQ Range	Improvement (Wilcoxon)		Significance (Friedman's test)
B.T	3	1	BT-AT	8	0	68.4	<0.001	<0.01
A.T	1.37	0	AT-FU	0	1	-41.3	>0.05	
F.U	1.63	0	BT-FU	8	0	55.3	<0.001	

The Mean Rank of C1 before treatment is 3 with the Inter Quartile range of 1 and after treatment the Mean Rank became 1.37 ( IQ Range of 0 ) and in after follow up Mean Rank 1.63 and using Friedman's Test is highly significant ( i.e. <0.01 ). The improvement after treatment was found to be 68.4% with P <0.001 which is highly significant. After follow up the improvement was 55.3% and it is highly significant.

**Table 5: showing the result of global PSQI**

	Mean Rank	IQ range		Mean Rank	IQ range	Improvement Wilcoxon		Significance(Friedman's Test)
B.T	3	5	BT-AT	8	5	61.2	<0.01	<0.001
A.T	1.33	2	AT-FU	2.5	2	-32.9	<0.05	
F.U	1.67	4	BT-FU	8	3	48.4	<0.01	

The Mean Rank of symptoms before treatment is 3 with the Inter Quartile range of 5 and after treatment the Mean Rank became 1.33 ( IQ Range of 2 ) and in after follow up Mean Rank 1.67 and using Friedman's Test is highly significant ( i.e. <0.001). The improvement after treatment was found to be 61.2% with P <0.01 which is highly significant. After follow up the improvement was 48.4% and it is highly significant.

**Table 6: Showing the overall result of Nidranasha**

Total score	Mean Rank	IQ Range		Mean Rank	IQ Range	Improvement Wilcoxon		Significance (Friedman's test)
B.T	3	6	BT-AT	8	6	61.1	<0.01	<0.001
A.T	1.27	3	AT-FU	3.5	3	32.2	<0.05	
F.U	1.73	4	BT-FU	8	4	48.3	<0.01	

The Mean Rank for the Nidranasha is found to be 3. After treatment it is 1.27 with the improvement of 61.1% whereas after follow up the improvement was 48.3% with the Rank of 1.73 and it is found to be highly significant ( <0.01 ).

## DISCUSSION

Acharya Charaka has stressed the importance of Klama (fatigue) of mind in the initiation of normal sleep. Acharya Sushruta has given the importance to the organ Hridaya being Chetanasthana, which is responsible for the initiation and maintenance of Prakruta Anidra. Acharya Vagbhata has given the importance to Kapha Dosha and Shareera Shrama in the

causation of Prakruta Nidra. Acharya Vagbhata has given the importance to Kapha Dosha and Shareera Shrama in the causation of Prakruta Nidra. Prakruta Anidra. Bahya Snehana like Pada abhyanga can be easy as therapeutic measure. According to Vagbhata, there are two siras in each Pada madhyapradesh (which is in middle part of sole), which are connected to the head. Because of continuous standing, walking or excessive pressure on the soles of feet, these siras get affected, as a result of which eyesight and flappers on gets reduced.<sup>12</sup> Some studies suggest that Pada abhyanga increases the intensity of brain waves and decreases the brain cortisone and adrenaline level. Pada abhyanga normalizes the two important neurotransmitters serotonin and Norepinephrine, which regulates a wide variety of Neuro psychological process along with sleep. Thus it induces relaxation and natural sleep. The Abhyanga exhibits its action basically on three systems of blood vascular system, Nervous system, and Lymphatic system. By fine touch and crude touch, Abhyanga stimulates the tactile receptors and mechano-receptors in the skin. The temperature in the skin increases thus causes kinetic motion in the receptors by which the axons get activated and conduct stimulus through first, second and third order of neurons to the sensory cortex in turn maintains the normal homeostasis of the body by exhibiting neuronal action.<sup>13</sup> Ingredients of Tungadrumadi Taila are having Shita Virya, Snigdha Guna, Vatapittahara property and has Karmukata as Akshitarpaka, Snehana and Nidrajanaka. So Tungadrumadi Taila can act beneficial in Nidranasha. The Gunas of Sneha also play important role in absorption of Aushadhas. Sneha Dravya has Drava, Sara, Snigdha, Picchila, Guru, Sheeta, Mrudu and Manda Guna predominantly [14]. The Vata Dosha, which is key factor in causation of disease, has almost opposite quality to this. After treatment improvement was found to be 57.2% and after follow up improvement was 46.5% and it is highly significant in subjective parameters. In Global PSQI score it is observed that after treatment improvement was found to be 61.2% and after follow up improvement was 48.4% and it is highly significant. Overall result in Nidranasha. After treatment improvement was found to be 61.1% and after follow up improvement was 48.3% and it is highly significant.

### **Probable mode of action of Pada Abhyanga**

In the centre of the feet there are two Siras are situated which are directly connected to the eyes [15]. These transmit the effect of the medicines applied over the feet in the form of Abhyanga [16]. These Siras are vitiated by the accumulation of the Malas and cause Nidranasha. The Abhyanga is exceedingly beneficial to the skin. As Vaayu is found predominantly in the Sparshanedriya can be controlled [17]. Indriya is in close contact of Manas; hence if Indriyas



remain healthy, mind also automatically remains healthy. Acharya sushruta in Shaareerasthana explains that, out of the four Tiryakgata dhamanis, each divides gradually hundred and thousand times and thus become innumerable. These cover the body like network and their openings are attached to Romakoopa. Through these the Veerya of Abhyanga enters into the body after undergoing Paka with Bhrajaka pitta in skin and shows its action. Pada Abhyanga nourishes the Adhoga Dhamanis; these in turn nourish the Urdwaga Dhamanis and Tiryak Dhamanis and induce sleep. By fine touch and crude touch, Abhyanga stimulates the tactile receptors and mechano-receptors in the skin. The temperature in the skin increases thus causes kinetic motion in the receptors by which the axons get activated and conducts stimulus through first, second and third order of neurons to the sensory cortex in turn maintains the normal homeostasis of the body

## **CONCLUSION**

Abhyanga every day keeps body healthy. In classics, Abhyanga has been mentioned as the part of Dinacarya i.e. daily routine. Massaging the feet it brings good sleep, pleasing to body and eyes, removes fatigue, numbness, and impart softness to the skin. Abhyanga can reach up to the different Dhatus if it is applied for the sufficient time. Hence, it is clear that the drug used in the Abhyanga gets absorbed by the skin. Pada Abhyanga is one of the vitality enhancing technique which is incorporated in massage of feet in Ayurveda. In this study results shows that Pada Abhyanga with Tungadrumadi Taila effective in reducing the sign & symptoms of Insomnia as well as physical assessment.

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