ORIGINAL RESEARCH ARTICLE

A Comparative Clinical Study to Evaluate the Effect of *Jatamansi churna* and *nirgundi taila padabhyanga* in *Nidranasha*

Manasi Pradhan¹*, Manoj Kumar Sahoo², Simadri Bhusan Nayak³

¹PG Scholar, Department of Ayurveda Samhita and Siddhanta, GAC and H, Balangir, Odisha, India.
²Principal, Department of Ayurveda Samhita and Sidhanta, GAC and H, Balangir, Odisha, India.
³Professor and Head, Department of Kaya Chikitsa, GAC and H, Balangir, Odisha, India.

ABSTRACT

Background: According to Ayurveda, there are three pillars of life such as *Ahara*, *Nidra*, and *Brahmacharya* and among them, Ayurveda gives more importance to Nidra (sleep). Sleep is an essential phenomenon for the maintenance and restoration of both body and mind, and thus, *Nidra* is a precious gift by nature, which is directly connected with the mental state. Keeping in view the importance of sleep, the present work aimed at comparing the efficacy of *Jatamansi churna* versus *Nirgundi taila padabhyanga* with respect to *Nidranasha*.

Materials and Methods: 40 numbers of patients were taken for the study and all patients were divided into two equal groups, i.e., Group A and Group B. Group A consisted of 20 patients were treated with *Jatamansi Churna* internally for 15 days. Group B consisted of 20 patients were treated with *Jatamansi Churna* internally and *Nirgundi taila Padabhyanga* for 15 days. A comparison was done between Group A and Group B and the assessment was made before and after treatment.

Results: The better result was obtained in Group B in reducing the subjective and objective parameters of *Nidranasha* than Group A.

Conclusion: It can be said that, internal application of it can be said that, internal application of *Jatamansi Churna* along with *Nirgundi Tila Padabhyanga* could be the effective tools for the management of *Nidranasha* along with *Nirgundi Tila Padabhyanga* could be the effective tools for management of *Nidranasha*.

1. INTRODUCTION

All the great sages of Ayurveda considered Nidra as a very essential factor for all living beings. Inadequate intake of *Nidra* (*Nidranasha*) leads to various problems such as *Dukha, Karsya, Abala, Klibata,* and *Ajnana* and at last leads to death.[1]

Acharya Charaka explains *Nidra* and *Nidranasha* in the context of *Asta Ninditiya Adhyaya* of *Sutra Sthana*.[2] Charaka included *Asvapna (Nidranasha)* in 80 *Nanatmaja Vata Vikara* but has not explained in Charaka Chikitsa Sthana. Sushruta explains it under the chapter of *Garbha Vyakarana Shariram* might be because *Nidra* plays a role in nutrition and development of the body. He also describes *Vaikarika*

Nidra (sleep disorders) in the same chapter along with Chikitsa.[3] Vagbhata in Astanga Sangraha mentions it in Viruddha Anna Vijnaniya *Adhyaya*[4] and in Astanga Hridaya, the *Nidra, Nidra Vikaras,* and *Chikitsa* are mentioned under *Annaraksha Adhyaya*.[5] Acharya Sharangadhara concerted the *Anidra in Vataja Nanatmaja vikara*, Alpa Nidra in Pittaja *Nanatmaja vikara,* and *Atinidra* under *Kaphaja Nantmaja Vikara.*

The word *Nidranasha* is formed by composition of two words, i.e., Nidra and Nasha. Nidra implies the phenomenon which is happening at night with the *Samyoga* of Ratri. *Sabdastoma Mahanidhi* explains "*Nasha*" as *Kshaya, Samkshaya, Apachya, Hrasa, Adarshana,* and *Bhanga*. Hence, "*Nasha*" means being lost, elimination, disappearance, destruction. The definition of *Nidranasha* is not mentioned in any of the popular dictionaries such as Monier William's Sanskrit-English dictionary. However, in translation work of 20th century, authors have termed *Nidranasha* as insomnia. Based on the above *Nirukti,* the

Corresponding Author:
Manasi Pradhan,
PG Scholar, Department of Ayurveda Samhita and Siddhanta, GAC and H,
Balangir, Odisha, India.
Email: manasipradhanmay24@gmail.com

term *Nidranasha* can be broadly defined as the loss of sleep or the derangement in the quality and quantity of sleep. *Nidranasha* may be classified under the following two broad headings by considering its etiological factors. First is *Svatantra Nidranasha*, where *Nidranasha* is an independent disease. The second one is *Paratantra Nidnranasha*, where *Nidranasha* appears as a *Lakshana* or Etiopathological factor, *Poorvaroopa, Upadrava,* or *Asadhya lakshanas* of some disease. *Atiyoga*[6] of *virechana, atiyoga* of *nasyakarma, Atiyoga* of *rakta mokshana,* and *Atiyoga* of *dhoomapana*. Because of above factors, the *Vata* gets vitiation and there by *nidranasha* is caused. *Ati vyayama, Ati upavasa,* and *Asukha shayaa* are the causatives of Vata vitiation, consequently the *nidranasha* might be caused. *Ati chinta, Ati krodha,* and *Ati bhaya* are the *manasika karana* leading to *tama kshaya* and *rajo vruddi* induces the *nidranasha*. Acharya Sushruta has referenced some *nidana* factors which may cause *Nidranasha*. These factors are[7] *Vata vridhi, Pitta vridhi, Kshaya,* and *Manastapa. Bhavaprakasha* is considered as follows:[8] *Atiyoga* of *Nasya, Chinta, Kapha Kshya, Upavasa, Dukha, Vyayama,* and *Bhaya*. Astanga Sangraha explained *Nidana* factors for *Nidranasha*[9] *Lobha, Ati kshudha, Harsha, Rukshana sevana, Vyatha, Anjan,* and *Ati maithuna*. Acharya Vagbhatta has mentioned the mental cause of *Anidra*. In Astanga Hridaya, he stated that due to excess of *Kama, Nidrakshaya* occurs.[10] Keeping in view the importance of sleep, the present work aimed at comparing the efficacy of *Jatamansi churna* versus *Nirgundi taila padabhyanga* with respect to *Nidranasha*.

2. MATERIALS AND METHODS

2.1. Source of Patients

Patients were selected from OPD and IPD of Government Ayurvedic College and Hospital, Balangir and Saradeswari Government Ayurvedic Hospital, Balangir.

2.2. Method of Collection of Patients

A special pro forma was prepared which includes details of history taking, physical sign and symptoms, and subjective and objective parameters. With this pro forma, 40 patients were randomly scrutinized and selected for clinical study.

2.3. Ethical Clearance

With due approval by the Institutional Ethical Committee (IEC), Government Ayurvedic College and Hospital, Balangir, the study has been conducted among the patients registered for the purpose. Written consent was obtained from each patient participate in the study with prior proper information.

2.4. Study Design and Grouping

2.4.1. Methodology (Single-blind study)
- 40 numbers of patients were taken for the study and all patients were divided into two equal groups, i.e., Group A and Group B.
- Group A – 20 patients were treated with *Jatamansi Churna* internally for 15 days.
- Group B – 20 patients were treated with *Jatamansi Churna* internally and *Nirgundi taila Padabhyanga* for 15 days.
- A comparison was done between Group A and Group B and the assessment was made before and after treatment.
- Duration – 15 days.
  1. Single group design
  2. Double group design

Group A versus Group B effectiveness of internal application of *Jatamansi Churna* with respect to internal application of *Jatamansi Churna* and *Nirgundi Tila Padabhyanga* was assessed.

2.5. Criteria for Selection of Patients

2.5.1. Inclusion Criteria
1. Patients having *Nidranasha* as per clinical sign and symptoms as in classical text.
2. Patients of both sex in the age between 30 and 70 years.
3. Patients without any systemic disorders.
4. Patient having difficulty in initiating sleep even after 1 h.

2.5.2. Exclusion Criteria
1. Patients suffering from other systemic illness and metabolic disorder.
2. Patients of both sexes in the age below 30 and above 70 years.
3. Patient who are on psychiatric treatment.
4. Accident cases, post-operative cases, drug abuser, mentally retarded and psychiatric abnormalities, pregnant and lactating mother.

2.5.3. Assessment Criteria
The effectiveness of the treatment was assessed by assessing subjective and objective parameters.
1. Subjective Parameters
   - *Jrumbha* (Yawning)
   - *Angamarda* (Body ache)
   - *Shirogaurava* (Heaviness of head)
   - *Akshigaurava* (Heaviness of eyes).
2. Objective Parameters
   - Total sleep duration
   - Difficulty in initiating sleep
   - Disturbance during sleep
   - After awakening.

2.6. Selection of Drug and Method of Preparation

2.6.1. Jatamansi Churna
Reference- *Priyanighantu* (*Shatapuspadi varga* – Sloka no. 36).

2.6.1.1. Method of preparation
- The dried drugs were purchased from local market and identified by the experts of Department of Dravyaguna.
- The drug Jatamansi Churna was prepared in the mini pharmacy of Government Ayurvedic College and Hospital, Balangir, Odisha, under direct supervision of H.O.D of Rasashastra and Bhaisajya Kalpana as per good manufacturing practice and guidelines.
- Dried raw drugs (*Jatamansi*) were taken in specific quantity and powdered.
- The powdered was obtained and passed through sieve no. 80 to obtain fine powdered.
- The fine powder (*Jatamansi Churna*) was packed in an air-tight container.

2.6.1.2. Administration of drug
- Dose – 5 g twice daily (After food)
- Anupana – Normal water.
- Dietary regimen – All patients were advised to take normal diet.
- Duration – 15 days.

2.6.2. Nirgundi taila[11]
As there is no reference for *kalka dravya* in the preparation, this is known as one of the *kalka taila* by Acharya chakrapani. *Nirgundi taila*

was prepared in line with standard operating procedures and subjected to different analysis of the *taila*.

The result of analytical study with TLC and HPTLC fingerprints has been proposed as a monograph to identify and check quality of *Nirgundi taila*.

2.6.2.1. Preparation of Nirgindi Taila

- The leaves and roots of *Nirgundi* were collected from the nearby areas of Balangir town and washed thoroughly to remove the adhering soil and dusts.
- Swarasa was extracted from the fresh roots and leaves by crushing.
- *Murchhita Tila taila* was taken in a stainless vessel and mild heat was applied to it, then equal quantity of *Nirgundi swarasa* was added followed by 4 parts, *Nirgundi kwatha* was added as per the classical reference.
- Then heat was applied for 3 h with constant stirring and stopped the heat and allowed to stand it for overnight.
- Further heating was started the next day and stirred constantly till the *phenodgama* over the *taila*, then *taila* was exposed to flame to confirm the absence of crackling sound which indicates the absence of moisture. The oil was filtered through a muslin cloth when it was in hot state and allowed to cool.
- Then, it was stored in a tightly closed container to protect from light and moisture.

2.6.2.2. Method of application of Taila (For Padabhyanga in Group B)

- Patients were asked to lie down or sit in a comfortable position. Feet were soaked in a tub of warm water for few minutes to remove any dirt and then towel dried.
- They were told to hold the foot in hand and establish contact between hands.
- First movements such as ankle rotation, ankle stretching, and ankle stroking of the foot from ankle to toes were done to relax the whole area of foot.
- Then, *Nirgundi Taila* was smoothly massaged on the foot with the care that the movement should not be too fast or too slow.
- Bottle containing required amount of *Nirgundi taila* were given to each patient of Group B and they were asked to take the massage preferably from some family members for 10- 15 minutes every day, before 2 h of going to bed.

2.6.2.3. Dose
External application.

(*Padabhyanga*- Adequate amount of Taila for 10–15 min) before going to sleep at night.

2.6.2.4. Diet regimen
All patients were advised to take normal diet.

2.6.2.5. Duration
15 days.

2.7. Statistical Analysis

- The subjective and objective parameters were analyzed statistically in term of Mean, Standard Deviation, Standard Error *t*-value, and *P*-value. As subjective and objective parameters were on gradation, so here used Wilcoxon signed-rank test to test efficacy in Group A and Group B. As laboratory investigation were in quantitative form, so here pair "*t*" test used. The effectiveness of both the trial drugs has been assessed through the *P*-value. For

the comparison between the group, "Mann–Whitney U" test used.
- The *P*-value was interpreted as
  1. >0.05 statistically insignificant at 5% level
  2. <0.05 statistically significant at 5% level.

2.8. ASSESSMENT FOR RESULT

2.8.1. Clinical assessment
The percentage of patients got improved and the average percentage improvement in the severity of different clinical sign and symptoms was calculated. The overall clinical assessment has been done considering the sign and symptoms as follows:
- Marked improvement: >75% relief in sign and symptoms.
- Moderate improvement: 50–75% relief in sign and symptoms.
- Mild improvement: 25–50% relief in sign and symptoms.
- Unsatisfactory: <25% relief in sign and symptoms.

3. RESULTS

Since observations are on ordinal scale (gradations), Wilcoxon signed-rank test was used to test efficacy in Group A and Group B.

It has been observed that in Group A, before treatment, mean score of *Jrumbha* was 2.50 which reduced to 1.40 with 44.00% mean percentage of improvement after treatment. In Group B, before treatment mean score of *Jrumbha* was 2.60 which reduce to 0.65 with 75.00% mean percentage of improvement after treatment. *P*-value for Group A and Group B is <0.05. Hence, effect observed in Group A and Group B is significant [Table 1].

It has been observed that in Group A, before treatment, mean score of *Angamarda* was 1.95 which reduced to 1.15 with 41.03% mean percentage of improvement after treatment. In Group B, before treatment mean score of *Angamarda* was 2.00 which reduce to 0.50 with 75.00% mean percentage of improvement after treatment. *P*-value for Group A and Group B is <0.05. Hence, effect observed in Group A and Group B is significant [Table 2].

It has been observed that in Group A, before treatment mean score of *Shirogaurava* was 1.95 which reduced to 1.15 with 41.03% mean percentage of improvement after treatment. In Group B, before treatment, mean score of *Shirogaurava* was 2.00 which reduced to 0.50 with 75.00% mean percentage of improvement after treatment. *P*-value for Group A and Group B is <0.05. Hence, effect observed in Group A and Group B is significant [Table 3].

It has been observed that in Group A, before treatment, mean score of *Akshigaurava* was 2.00 which reduced to 1.25 with 40.48% mean percentage of improvement after treatment. In Group B, before treatment, mean score of *Akshigaurava* was 2.45 which reduces to 0.85 with 65.31% mean percentage of improvement after treatment. *P*-value for Group A and Group B is <0.05. Hence, effect observed in Group A and Group B is significant [Table 4].

It has been observed that in Group A, before treatment, mean score of total sleep duration was 2.35 which reduced to 1.35 with 42.55% mean percentage of improvement after treatment. In Group B, before treatment, mean score of total sleep duration was 2.70 which reduce to 0.75 with 72.22% mean percentage of improvement after treatment. *P*-value for Group A and Group B is <0.05. Hence, effect observed in Group A and Group B is significant [Table 5].

It has been observed that in Group A, before treatment, mean score of difficulty in initiating sleep was 2.25 which reduced to 1.25 with

44.44% mean percentage of improvement after treatment. In Group B, before treatment, mean score of difficulty in initiating sleep was 2.15 which reduce to 0.55 with 74.42% mean percentage of improvement after treatment. *P*-value for Group A and Group B is <0.05. Hence, effect observed in Group A and Group B is significant [Table 6].

It has been observed that in Group A, before treatment, mean score of Disturbance during sleep was 2.25 which reduced to 1.25 with 44.44% mean percentage of improvement after treatment. In Group B, before treatment, mean score of disturbance during sleep was 2.15 which reduce to 0.70 with 67.44% mean percentage of improvement after treatment. *P*-value for Group A and Group B is <0.05. Hence, effect observed in Group A and Group B is significant [Table 7].

It has been observed that in Group A, before treatment, mean score of after awakening was 2.45 which reduced to 1.35 with 44.90% mean percentage of improvement after treatment. In Group B, before treatment, mean score of after awakening was 2.85 which reduce to 0.80 with 71.93% mean percentage of improvement after treatment. *P*-value for Group A and Group B is <0.05. Hence, effect observed in Group A and Group B is significant [Table 8].

- Mann–Whitney U Test was carried out for comparison between Group A and Group B.
- From Table 9, it has been observed that *P*-value for all parameters is <0.05. Hence, it concludes that there is significant difference between Group A and Group B.
- Further, it has been observed that, mean rank for Group B is greater than Group A. Hence, it conclude that, effect observed in Group B is better than group.

It has been observed that, as per treatment, in Group A, none of the patients were shown marked improvement, 2 (10.00%) were shown moderate improvement, 17 (85.00%) were shown mild improvement, and 1 (5.00%) was shown unsatisfactory result. In Group B, 7 (35.00%) were shown marked improvement, 11 (55.00%) were shown moderate improvement, 2 (10.00%) were shown mild improvement, and none of the patients were shown unsatisfactory result [Table 10 and Chart 1].

4. DISCUSSION

4.1. Effect of the Drug on Objective Parameters

4.1.1. Effect on total sleep duration
There was 42.55% of improvement in Group A and was statistically significant with *P* < 0.05 and in Group B, 72.22% mean percentage of improvement and was statistically significant with *P* < 0.05. The better improvement was obtained in Group B in the duration of the sleep. Due to *Madhura rasa* and *Snigdha guna* of the drug *Jatamansi* which acts on the vitiated *Vata dosha*, *Padabhyanga* also has *vataupashamana* quality which increases the *Kapha* and *Tama* property, and hence, there is increase in the duration of sleep.

4.1.2. Effect on difficulty in initiating sleep
There was 44.44% mean percentage of improvement in Group A and was statistically significant with *P* < 0.05 and in Group B, 74.42% mean percentage of improvement and was statistically significant with *P* < 0.05. The better improvement was obtained in Group B in the sleep induction. This might be due to *Nidrajanana* effect of the drug *Jatamansi*.

AS mentions in our classics that *Manah suskha* helps to induce sleep because *Vayu* dominates in the *Sparshanendriya* and the sensory organ is lodge in the skin, *Abhyanga* is exceedingly beneficial to skin as it balances *Vata*, *Indriyas* are also close contact to mind, hence *indriyas*

remain healthy mind automatically remain healthy and it alleviates the *vata dosha*, hence sleep induces.

4.1.3. Effect on Disturbance during sleep
There was 44.44% mean percentage of improvement in Group A and was statistically significant with *P* < 0.05 and in Group B, 67.44% mean percentage of improvement and was statistically significant with *P* < 0.05. The better improvement was obtained in Group B in reduction of disturbance during sleep. In *Nidranasha Vata dosha* aggravates, the *Snigdha guna* of *Jatamansi* acts against the *Ruksha guna* of *vata* and increases the *Kapha* which is responsible for induction of sleep. The unique *Nidrajanana* action of *Jatamansi* decreases the number of disturbance during sleep. As *padabhyanga* has *Vatashamaka* property and it acts against the *Raja* and *Vata guna*, hence there is increase in the quality of *Tama* and *Kapha* which induces sound sleep.

4.1.4. Effect on after awakening
There was 44.90% mean percentage of improvement in Group A and was statistically significant with *P* < 0.05 and in Group B, 71.93% mean percentage of improvement and was statistically significant with *P* < 0.05. The better improvement was obtained in Group B in after awakening. *Madhura rasa* and *Snigdha guna* of *Jatamansi* help to alleviate *Vata guna* as *Vata* pacifies the *Manasa Raja guna* also decrease which increases the quality of *Kapha* and *Tama*, by induction of sound sleep, the patient feels fresh after awakening. Due to *Vatashamaka* property of *Padabhyanga*, it increases *Kapha* and *Tama* which induces sleep. Hence, patients were feel fresh after awakening.

5. CONCLUSION

The better result was obtained in Group B in reducing the subjective and objective parameters of *Nidranasha* than Group A. Finally, it can be said that, internal application of *Jatamansi Churna* along with *Nirgundi Tila Padabhyanga* could be the effective tools for the management of *Nidranasha*. Further studies with large sample, increased duration of medicine could be more informative.

7. AUTHORS' CONTRIBUTIONS

All the authors contributed equally in design and execution of the article.

9. ETHICAL APPROVALS

With due approval by the IEC, Government Ayurvedic College and Hospital, Balangir, the study has been conducted among the patients registered for the purpose. Written consent was obtained from each patient participate in the study with prior proper information.

10. CONFLICTS OF INTEREST

Nil.

11. DATA AVAILABILITY

This is an original manuscript and all data are available for only research purposes from principal investigators.

12. PUBLISHERS NOTE

This journal remains neutral with regard to jurisdictional claims in published institutional affiliation.

REFERENCES

1. Shastri K. CharakaSamhita: Sutra Sthana 21/36, Aatreyabhadrakaapiya Adhyaya. Varanasi: Chaukhambha Bharati Academy; reprint 2009. p. 367.
2. Shastri K. CharakaSamhita: Sutra Sthana 21, Aatreyabhadrakaapiya Adhyaya. Varanasi: Chaukhambha Bharati Academy; reprint 2009. p. 550.
3. Shastri A. Sushruta Samhita Sharira Sthana. Ch. 4. Varanasi: Garbhavyakaran Chaukhamba Sanskrit Sansthana; 2013. p. 36-54.
4. Gupta A. Ashtanga Sangraha Sutra Sthana. Ch. 9. Virudhhanna Vigyaniya Adhayaya. Mumbai: Nirnaya Sagar Press; 1959. p. 100.
5. Gupta A. Ashtanga Sangraha Sutra Sthana. Ch. 7. Varanasi: Annaraksha Adhayaya Chakhamba Prakashana; 2012. p. 88-97.
6. Pandey K. Charaka Samhita Sutra Sthana. Ch. 21/55-57. Ashtauninditiya Adhayaya. Varanasi: Chaukhamba Bharti Academy; 2020. p. 367.
7. Shastri K. Sushruta Samhita Sharira Sthana. Varanasi: Chaukhamba Sanskrit Sansthana; 2013. p. 36-54.
8. Bulusu S. Bhavaprakasha Samhita Madhyama Khanda. Ch. 1/324. Varanasi: Jwaradhikara Chaukhambha Orientalia; 2014. p. 35.
9. Murthy KR. Srikant Ashtanga Sangraha Sutra Sthana. Ch. 9. Varanasi: Virudhhanna Vijyaniya Adhayaya Chaukhambha Orientalia; 2012. p. 197-225.
10. Gupta A. Ashtangahridayam Nidana Sthana Jwaranidana Adhayaya. Ch. 2. Varanasi: Chaukhambha Prakashana; 2012. p. 302.
11. Shastri K. CharakaSamhita Chikitsa 28/134-135, Vatavyadhi Chikitsa. Varanasi: Chaukhambha Bharati Academy; reprint 2009. p. 567.

Table 1: The effect of *Jatamansi churna* internally and *Jatamansi Churna* internally with *Nirgundi Taila Padabhyanga* on *Jrumbha* of patients (*n*=40)

Jrumbha	Mean	Median	SD	SE	Wilcoxon W	*P*-value	% Effect	Result
Group A								
BT	2.50	3.00	0.95	0.21	−3.787	0.000152	44.00	Sig
AT	1.40	2.00	0.75	0.17				
Group B								
BT	2.60	3.00	0.75	0.17	−3.945	0.000080	75.00	Sig
AT	0.65	1.00	0.49	0.11				

Table 2: The effect of Jatamansi churna internally and Jatamansi Churna internally with Nirgundi Taila Padabhyanga on Angamarda of patients (*n*=40)

Angamarda	Mean	Median	SD	SE	Wilcoxon W	*P*-value	% Effect	Result
Group A								
BT	1.95	2.00	1.15	0.26	−3.771	0.000162	41.03	Sig.
AT	1.15	1.00	0.81	0.18				
Group B								
BT	2.00	2.00	0.97	0.22	−3.827	0.000130	75.00	Sig.
AT	0.50	0.50	0.51	0.11				

Table 3: The effect of Jatamansi churna internally and Jatamansi Churna internally with Nirgundi Taila Padabhyanga on Shirogaurava of patients (*n*=40)

Shirogaurava	Mean	Median	SD	SE	Wilcoxon W	*P*-value	% Effect	Result
Group A								
BT	1.60	2.00	1.05	0.23	−3.207	0.001341	37.50	Sig
AT	1.00	1.00	0.79	0.18				
Group B								
BT	2.05	2.00	1.00	0.22	−3.827	0.000130	73.17	Sig
AT	0.55	0.50	0.60	0.14				

Table 4: The effect of Jatamansi churna internally and Jatamansi Churna internally with Nirgundi Taila Padabhyanga on *Akshigaurava* of patients (*n* = 40)

Akshigaurava	Mean	Median	SD	SE	Wilcoxon W	*P*-value	% Effect	Result
Group A								
BT	2.10	2.00	0.91	0.20	−3.690	0.000224	40.48	Sig
AT	1.25	1.00	0.72	0.16				
Group B								
BT	2.45	3.00	0.76	0.17	−3.987	0.000067	65.31	Sig
AT	0.85	1.00	0.49	0.11				

Table 5: The effect of Jatamansi churna and Jatamansi Churna internally with Nirgundi Taila Padabhyanga on Total Sleep Duration of patients (*n*=40)

Total sleep duration	Mean	Median	SD	SE	Wilcoxon W	*P*-value	% Effect	Result
Group A								
BT	2.35	2.00	0.59	0.13	−4.066	0.000048	42.55	Sig
AT	1.35	1.00	0.67	0.15				
Group B								
BT	2.70	3.00	0.47	0.11	−4.128	0.000037	72.22	Sig
AT	0.75	1.00	0.64	0.14				

Table 6: The effect of Jatamansi churna internally and Jatamansi Churna internally with Nirgundi Taila *Padabhyanga* on Difficulty in initiating Sleep of patients (*n*=40)

Difficulty in initiating Sleep	Mean	Median	SD	SE	Wilcoxon W	*P*-value	% Effect	Result
Group A								
BT	2.25	2.00	0.55	0.12	−4.066	0.000048	44.44	Sig
AT	1.25	1.00	0.44	0.10				
Group B								
BT	2.15	2.00	0.59	0.13	−4.053	0.000051	74.42	Sig
AT	0.55	0.50	0.60	0.14				

Table 7: The effect of Jatamansi churna internally and Jatamansi Churna internally with nirgundi taila padabhyanga on disturbance during sleep of patients (*n*=40)

Disturbance during sleep	Mean	Median	SD	SE	Wilcoxon W	*P*-value	% Effect	Result
Group A								
BT	2.25	2.00	0.79	0.18	−4.066	0.000048	44.44	Sig
AT	1.25	1.00	0.79	0.18				
Group B								
BT	2.15	2.00	0.59	0.13	−4.041	0.000053	67.44	Sig
AT	0.70	1.00	0.47	0.11				

Table 8: The effect of Jatamansi churna internally and Jatamansi Churna internally with Nirgundi Taila Padabhyanga on After Awakening of patients (*n*=40)

After awakening	Mean	Median	SD	SE	Wilcoxon W	*P*-value	% Effect	Result
Group A								
BT	2.45	2.50	0.60	0.14	-4.300	0.000017	44.90	Sig
AT	1.35	1.00	0.67	0.15				
Group B								
BT	2.85	3.00	0.37	0.08	-4.056	0.000050	71.93	Sig
AT	0.80	1.00	0.41	0.09				

Table 9: The comparative effect of trial drug between Group A and Group B on both subjective and objective parameters after treatment (AT-AT)

Variable	Group	*n*	Mean rank	Sum of ranks	Mann-Whitney U	*P*-value
Jrumbha	Group A	20	14.58	291.50	81.500	0.00058
	Group B	20	26.43	528.50		
	Total	40				
Angamarda	Group A	20	15.05	301.00	91.000	0.00146
	Group B	20	25.95	519.00		
	Total	40				
Shirogaurava	Group A	20	14.35	287.00	77.000	0.00041
	Group B	20	26.65	533.00		
	Total	40				
Akshigaurava	Group A	20	14.58	291.50	81.500	0.00046
	Group B	20	26.43	528.50		
	Total	40				
Total Sleep Duration	Group A	20	12.75	255.00	45.000	0.00000
	Group B	20	28.25	565.00		
	Total	40				
Difficulty in initiating Sleep	Group A	20	15.10	302.00	92.000	0.00069
	Group B	20	25.90	518.00		
	Total	40				
Disturbance During Sleep	Group A	20	16.45	329.00	119.000	0.00752
	Group B	20	24.55	491.00		
	Total	40				
After Awakening	Group A	20	12.80	256.00	46.000	0.00000
	Group B	20	28.20	564.00		
	Total	40				

Table 10: The overall clinical assessment of result in patients (*n*=40)

Overall effect	Group A		Group B	
	n	%	*n*	%
Marked improvement	0	0.00	7	35.00
Moderate improvement	2	10.00	11	55.00
Mild improvement	17	85.00	2	10.00
Unsatisfactory	1	5.00	0	0.00
Total	20	100.00	20	100.00

Group A	BT versus AT	Effectiveness of internal application of *Jatamansi Churna* was assessed.
Group B	BT versus AT	Effectiveness of internal application of *Jatamansi Churna and Nirgundi taila Padabhyanga* was assessed.

BT: Before treatment, AT: After treatment

Drug	Botanical name	Part used	Quantity
Jatamansi	*Nardostachys jatamansi*	Root (rhizome)	1 part

Formulation composition			
S. No	Ingredients	Parts used	Quantity
1	Nirgundi Swarasa	Root and leaf	1 part
2	Tila taila	Seed Oil	1 part
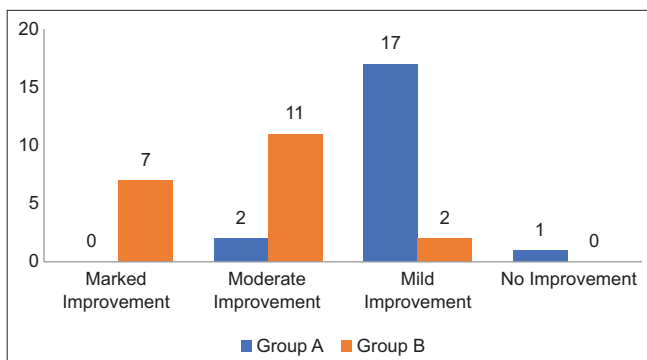
Chart 1: Overall effect of therapy on both the groups