

A COMPARATIVE STUDY OF MAHISHA KSHEERA AND SHUDDHA BALA TAILA DHARA IN NIDRANASHA W.S.R. INSOMNIA

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ABSTRACT

Sleep or *nidra*, is an indicator of good health, is one of the natural instincts of man. *Nidranasha* is the term commonly used to denote the state of reduced or disturbed sleep. Insomnia can be correlated with *nidranasha*. In *ayurveda doshas* involved in *nidranasha* are *vata* and *pitta*. The management includes *doshasamana* as well as subjective *swasthya*. The objectives of the present study are to evaluate efficacy of *shirodhara* with *mahishaksheera* and *suddhabalataila* in *nidranasha* before and after treatment in the group and between the groups. **Method:** The outcome of the study is evaluated clinically on 40 patients divided into 2 groups A and B each 20 patients. For Group A *shirodhara* with *mahishaksheera* and for Group B *shirodhara* with *suddhabalataila* was done for 45min, for 7 consecutive days. Observations were made on 1st, 7th and 21st day. In both groups objective and subjective parameters were assessed and the results were statistically analysed.

Keywords: *nidranasha*, insomnia, *shirodhara*, *suddhabalataila*, *mahishaksheera*

INTRODUCTION

Nidra is a state, when *manas*, *jnanendriya*, *karmendriya* get exhausted, distract from the state of objects¹ and thus man goes into a state of sleep. During the description of *nidrautpatti*, *acharyas* have mentioned that *sharirika dosha kapha manasika dosha tama* are responsible for *nidra*². *Ayurveda* mentioned *nidra* as one among the *trayopasthambha*³ to explain the importance of *nidra*. Sleep is characterised by a reversible state of relative unresponsiveness and tranquillity. The condition happens almost regularly and repetitively every day. Nearly 1/3rd of one's life span is spent in sleep.

- *Nidranasha* or loss of sleep (insomnia) is caused by aggravation of *vata* and *pitta*, exhaustion of the mind and also due to injury to the body⁴. The inter relationship of *vata* and *manas* by saying "chalevatechalam chittam nischale nischalam bhavet"⁵ is well said in *Hatayoga Pradeepa*. The essential feature of insomnia disorder is dissatisfaction with sleep quantitatively or qualitatively and or complaints of difficulty initiating or maintaining sleep. The sleep complaints are accompanied by clinically significant distress or impairment in social, occupational or other im-

portant areas of functioning⁶. Statistically, insomnia is global epidemic affecting quality of life of nearly 45% of the world population⁷. Different treatment principles are mentioned in classics like *abhyanga*, *utsadana*, *snana*, *chakshutarpana*, *lepa* on *shira* for inducing sleep⁸. Practically *shirodhara* is considered as the best modality of the available treatment. Insomnia, being an alarming problem, needs safe and effective treatment. Hence the present study is planned.

In *Ayurveda*, *Shirodhara* is considered as one of the *snehana karma* widely practiced for treating *vata vyadhis*, *nidranasha* etc⁹. *Shirodhara* is the process in which medicated potion like oil, milk, or *kwatha* is poured as a continuous stream on the forehead from a specified distance and then allowed to run over the scalp for a stipulated period of time.

In the present study *Shuddha Bala Taila* and *Mahishaksheera* is used. *Shuddhabalataila* contains *Bala*, *tilataila*, *ksheera*¹⁰ all of which are having *vata pittahara* properties^{11,12}. Also in the classics *shirodhara* with *ksheera* is indicated in cases of *nidranasha*¹³. *Mahishaksheera* has *madhura rasa*, *snigdha guna*, *sitaveerya* and *madhura vipaka* which subsides *vata* and *pitta doshas* and increases the *kaphadosha*, it also increases *tamoguna* in the *shirahpradesha*¹⁴.

With the procedure of *Shirodhara*, *vata* and *pitta doshas* get pacified and there is elevation in *kaphadosha*. It is also stated that when an individual lies down in a relaxed state for longer time, *tamasikaguna* over-comes the *rajasikaguna*. Also the procedure of *Shirodhara* brings the *sanjnavahasrotas* to a peaceful state of rest which in turn helps in inducing sleep¹⁴.

AIM AND OBJECTIVES:

- To study and evaluate the efficacy of *Mahishaksheera Shirodhara* in *Nidranasha*.
- To study and evaluate the efficacy of *Shuddha Bala Taila Shirodhara* in *Nidranasha*.

- To compare and evaluate the efficacy of *Mahishaksheera Shirodhara* and *Shuddhabalataila Shirodhara* in *Nidranasha*.

MATERIALS AND METHODS:

SOURCE OF DATA

Patients who were fulfilling the criteria for diagnosis and inclusion were selected from outpatient department of Karnataka Ayurveda medical college, Mangaluru.

METHODS OF COLLECTION OF DATA

a) Clinical study was conducted on 40 patients of *nidranasha*.

b) Diagnostic criteria:

Diagnosis will be made on the basis of the following *lakshanas* of *nidranasha* and DSM V criteria for insomnia:

1. *lakshana* of *nidranasha*

- *moha*
- *angamarda*
- *akshigaurava*
- *shirashoola*
- *alasya*
- *jrumbha*
- *tandra*

2. diagnostic and statistical manual of mental disorders, fifth edition text revision (DSM V criteria for insomnia)

- a predominant complaint of dissatisfaction with sleepy quantity or quality, associated with one (or more) of the following symptoms:
 - difficulty initiating sleep
 - difficulty maintaining sleep, characterized by frequent awakenings or problems returning to sleep after awakenings
 - early morning awakening with inability to return to sleep
- the sleep difficulty is present for at least 3 nights per week
- the sleep difficulty is present for at least 3 months

c) Inclusion criteria:

- Patients of both sexes, between the age group of 16-60 yrs.
- patients fulfilling the diagnostic criteria of *nidranasha*

- patients with other medical diseases like orthostatic hypotension, liver disease, thyroid disease, heart disease, history of seizure or cognitive impairment
- pregnancy
- patient unfit for *shirodhara*

d) Exclusion criteria:

- *nidranasha* due to other conditions like *madat-yaya*, *abhighata*
- patients with psychiatric diagnosis are excluded from this study were receiving any medication or drugs that could cause sedation

INTERVENTION:

TREATMENT GROUP

40 patients with a definite diagnosis of fulfilling the diagnostic, inclusion criteria of *nidranasha* where selected and grouped into 2 groups of size each 20.

GROUP I Shirodhara with MahishaKsheera

drug	: mahishaksheera
quantity	: 1500ml fresh mahishaksheera per day.
duration	: 7 days.
follow up	: 14days after treatment
<i>purvakarma</i>	: <i>purvakarma</i> is related with the preparation of the patient.
<i>pradhana karma</i>	: <i>shirodhara</i> with mahishaksheera
duration	: dhara procedure is done for 45mint
period for changing the liquid	: mahishaksheera is change every day.
temperature of liquid	: it will be lukewarm temp
<i>paschatkarma</i>	: <i>samsarjana karma</i> followed

GROUP II Shirodhara with ShudhaBalaTaila

drug	: shudhabalataila
quantity	: 1500ml fresh shudhabalataila per day.
duration	: 7 days.
follow up	: 14days after treatment
<i>purvakarma</i>	: <i>purvakarma</i> is related with the preparation of the patient.
<i>pradhana karma</i>	: <i>shirodhara</i> with shudhabalataila
duration	: dhara procedure is done for 45 mint
period for changing the liquid	: maintain 1500ml of taila daily
temperature of liquid	: it will be lukewarm temp
<i>paschatkarma</i>	: <i>samsarjana karma</i> followed.

ASSESSMENT CRITERIA

- the improvement in the following signs and symptoms of the disease was assessed by grading of different parameters

CRITERIA FOR ASSESSMENT OF OVERALL EFFECT

Overall effect of the therapy and reduction in symptoms was assessed in terms of grading of subjective and objective criteria. It was observed by adopting the following criteria.

GRADING OF THE SUBJECTIVE AND OBJECTIVE CRITERIA:

Sl No	Chief complints	Score			
		Range (0-3)			
1	Total sleep duration	0	1	2	3
2	Sleep induction	0	1	2	3
3	Awakenings during the night	0	1	2	3
4	Final awakening earlier than desired	0	1	2	3
5	Overall quality of sleep	0	1	2	3
6	Sense of wellbeing during the day	0	1	2	3
7	Functioning (physical and mental) during the day	0	1	2	3
8	Sleepiness during the day	0	1	2	3

Sl No	Associated complaints	Score			
		Range (0-3)			
1	<i>Moha</i>	0	1	2	3
2	<i>Angamarda</i>	0	1	2	3
3	<i>Akshigaurav</i>	0	1	2	3
4	<i>Shirashoola</i>	0	1	2	3
5	<i>Alasya</i>	0	1	2	3
6	<i>Jrimbha</i>	0	1	2	3
7	<i>Tandra</i>	0	1	2	3

(0- No problem 1-Mild 2-Moderate 3-Severe)

OBSERVATION AND RESULT

Effect of therapy on objective parameters between the groups- After treatment

Table 1: Effect of therapy on objective parameters between the groups- After treatment

parameter	N		Mean rank		Sum of ranks		Test value	P value
	Group A	Group B	Group A	Group B	Group A	Group B		
Total sleep duration	20	20	21.5	19.5	430	390	180	.298
Sleep induction	20	20	20.95	20.5	419	401	191	.782
Awakenings during the night	20	20	20.98	20.03	419.5	400.5	190.5	.742
Final awakening earlier than desired	20	20	23.10	17.90	462	358	148	.096
Overall quality of sleep	20	20	22	19	440	380	170	.343
Sense of wellbeing during the day	20	20	21.50	19.50	430	390	180	.471
Functioning (physical and mental) during the day	20	20	21.50	19.50	430	390	180	.471
Sleepiness during the day	20	20	21.50	19.50	430	390	180	.496

From the data available the following conclusions are made between the groups for objective parameters. The Mann Whitney U test was done as the data

does not follow normality. To know significance of treatment between the groups mean ranks were compared.

Effect of therapy on subjective parameters between the groups- After treatment

Table 2: Effect of therapy on subjective parameters between the groups- After treatment

parameter	N		Mean rank		Sum of ranks		Test value	P value
	Group A	Group B	Group A	Group B	Group A	Group B		
<i>Moha</i>	20	20	21	20	420	400	190	.637
<i>Angamarda</i>	20	20	21	20	420	400	190	.727
<i>Akshigaurav</i>	20	20	20.5	20.5	410	410	200	.1000
<i>Shirashoola</i>	20	20	21	20	420	400	190	.755
<i>Alasya</i>	20	20	22	19	440	380	170	.262
<i>Jrimbha</i>	20	20	20.5	20.5	410	410	200	1.000
<i>Tandra</i>	20	20	22.5	18.5	450	370	160	.289

Effect of therapy on objective parameters between the groups- After follow-up

Table 3: Effect of therapy on objective parameters between the groups- After follow

parameter	N		Mean rank		Sum of ranks		Test value	P value
	Group A	Group B	Group A	Group B	Group A	Group B		
Total sleep duration	20	20	22.03	18.98	440.50	379.50	169.5	.211
Sleep induction	20	20	20.45	20.55	409	411	199	.971
Awakenings during the night	20	20	22.30	18.70	446	374	164	.227
Final awakening earlier than desired	20	20	23.55	17.65	467	353	143	.079
Overall quality of sleep	20	20	23.50	17.50	470	350	140	.060
Sense of wellbeing during the day	20	20	24	17	480	340	130	.014
Functioning (physical and mental) during the day	20	20	26	15	520	300	90	.000
Sleepiness during the day	20	20	20	21	420	400	190	.708

From the data available the following conclusions are made between the groups for objective parameters. The Mann Whitney U test was done as the data

does not follow normality. To know significance of treatment between the groups mean ranks were compared.

Effect of therapy on subjective parameters between the groups- After follow-up

Table 4: Effect of therapy on subjective parameters between the groups- After follow

parameter	N		Mean rank		Sum of ranks		Test value	P value
	Group A	Group B	Group A	Group B	Group A	Group B		
<i>Moha</i>	20	20	21.5	19.5	430	390	180	.298
<i>Angamarda</i>	20	20	21.5	19.5	430	390	180	.471
<i>Akshigaurav</i>	20	20	20.5	20.5	410	410	200	1.000
<i>Shirashoola</i>	20	20	22.5	18.5	450	370	160	.212
<i>Alasya</i>	20	20	22.5	18.5	450	370	160	.037
<i>Jrimbha</i>	20	20	21.93	19.08	438.5	381.5	171.5	.179
<i>Tandra</i>	20	20	22.5	18.5	450	370	160	.080

DISCUSSION

Probable mode of action of *shirodhara* and drugs on its properties

Shirodhara is a purifying and rejuvenating therapy designed to eliminate toxins and mental exhaustion as well as relieve stress and any ill effects on the central nervous system.

Procedural effect of the process:

To discuss Procedural effect of *Shirodharakarma*, it divided in to three steps effects.

1. Penetration
2. Stimulation
3. Relaxation

1. Penetration:

In *mahishiksheeradhara* and *sudhabalatailadhara* on the forehead of the patients, it stuck little bit on fore head which consist some vital centres such as *Agya Chakra*, *Sthapnimarmas*. *SukshmaIndriyas* resides in *Mastishka* and *Sneha* ingredients enter through the penetration in the skin of forehead. The Penetration power is depended on consistency and density of drugs. In this study drug of *sudhabalataila* has greater penetration power than *mahishaksheera*, as has lipid constitution which can be penetrated easily through cell walls. So, it can be said that *sudhabalatailadhara* is more beneficial than *mahishaksheeradhara*.

2. Stimulation

To reach the central nervous system, a drug must have a high degree of lipid solubility or a specialized transport mechanism. After penetration, it can be said it stimulates CNS. Diminished function of thalamus and forebrain causes serotonin levels to decrease and catecholamine's increase thus manifesting insomnia. *Shirodhara* normalizes the functions of thalamus and forebrain, which brings the amount of serotonin and catecholamine's to normal stage, which induces sleep. *Shirodhara* stimulates the pineal gland which produces the hormone melatonin, which induced *nidrajanana* property. According to modern physiology, drugs may act directly on neurons and modify the neuronal functions. They may act by sending afferent impulses to the central

nervous system via the chemoreceptors, baroreceptors and peripheral nerves and there by eliciting psychic, somatic or visceral responses. They may affect the nutrition and oxygen supply of the CNS by altering its blood supply or affecting its metabolism.

3. Relaxation:

In *Shirodhara*, patients feel relaxation both physically as well as mentally.

Relaxation of the frontalis muscle tends to normalize the entire body and achieve a decrease activity of SNS with lowering of brain cortisone and adrenaline level; synchronizes the brain wave (alpha waves) strengthens the mind and spirit and this continues even after the relaxation. *Shirodhara* works on cerebral system helps in relaxing the nervous system and balancing the *PranaVayu* around the head. It improves the function of five senses, helps in insomnia, stress, anxiety, depression, hair loss, fatigue, imbalance of *Vata* and makes one calm and fresh accompanied by distress or impairment in day time functioning.

CONCLUSION

The main conclusions derived from the study are

- Demo graphic data showed that people of age group. 41-50, females, working in various field, married, middle class are predominant in the study.
- *Shirodhara* with *mahishaksheera* significantly effective in *nidranasha*.
- *Shirodhara* with *sudhabalataila* significantly effective in *nidranasha*
- The results were assessed based on the relief obtained to the subjective and objective parameters in the group and between the groups. Both groups were found to be effective in *nidranasha*, on after treatment (7th day) results there is no much statistical significant difference between groups. In follow up (21st day) Awakening during night, final awakening earlier than desired, *alasya* are statistically significant in group B than group A. This indicates that *shirodhara* with *sudhaba-*

lataila is more effective than *shirodhara* with *mahishaksheera*.

LIMITATIONS

- The limited size of sample was not sufficient to conclude the efficacy of the intervention
- Limited study period
- Lack of willingness of patients to undergo IP treatment.
- EEG co relation and differential diagnosis was not made.
- Study could have been more significant if it screened persons according to their *prakrithi*.

RECOMMENDATIONS

- Larger sample size
- Larger period of study
- Compare the effects of *shirodhara* with other indicated procedure

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Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Karthikeya Prasad & Gopidev T.G: A Comparative Study Of Mahisha Ksheera And Shuddha Bala Taila Dhara In Nidranasha W.S.R. Insomnia. International Ayurvedic Medical Journal [online] 2018 {cited September, 2018} Available from: http://www.iamj.in/posts/images/upload/1949_1955.pdf