

ROLE OF SHIRODHARA ON SLEEP DISORDER (INSOMNIA): SINGLE CASE STUDY**Dr. Rahul Thakkar*¹, Dr. J. I. Hiremath² and Dr. I. B. Kotturshetti³**¹3rd Year PG Scholar Panchkarma Department, Rajiv Gandhi Educational Societies Ayurvedic Medical College and Hospital. Ron.²MD Professor of PG Department of Panchkarma Rajiv Gandhi Educational Societies Ayurvedic Medical College and Hospital. Ron.³Professor and Hod of PG Department of Panchkarma, Rajiv Gandhi Educational Societies Ayurvedic Medical College and Hospital. Ron.

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ABSTRACT

After pain, insomnia is one of the most common complaints seen by primary care physicians. Patients with insomnia are becoming more interested in noninvasive, nonpharmacological methods of managing their sleeplessness. A frequent sleep disorder that affects roughly 30% of the general population is insomnia, or anidra. It is typified by trouble falling asleep. This could entail staying asleep, going to sleep, or doing both at once. It often leads to fatigue, lack of energy, difficulty in concentrating and irritability. One of the reasons that insomnia is on the rise is the high stress levels and time pressure associated with modern living. Many people complain of insomnia with stress during the day making them too tense or worried to be able to fall asleep at night.

KEYWORDS: Shirodhara, insomnia, Ayurveda.**INTRODUCTION**

Insomnia is a common sleep disorder that affects an estimated 30% of the general population.^[1] It is characterized by difficulty with sleeping, which may include falling asleep, maintaining sleep, or a combination of the two. It often leads to fatigue, lack of energy, difficulty concentrating, and irritability. Women are affected more commonly than men, and it increases in both sexes with age.^[2] Additionally, studies have found that insomnia is more prevalent in divorced, separated, and widowed adults than in married adults. It also has been observed that several psychiatric and physical illnesses have a strong correlation with insomnia. Insomnia in elderly people results in deterioration of social and/or physical functioning.^[3]

Ayurveda, the Indian system of medicine, uses externally applied medicated herbal oils in addition to internal herbal remedies to balance the doshas (biological humors) and treat ailments. According to Ayurveda, the three doshas (Vata, Pitta, Kapha) regulate the internal physiological activity.

Ahara, Nidra and Brahmacharya are the three factors which play an important role in the maintenance of a living organism. In the Ayurvedic literature three factors i.e. Ahara, Nidra and Brahmacharya have been compared

with the three legs of sub-support and have been termed as the three Upastambhas.^[4] The inclusion of Nidra in the three Upastambha proves its importance. While discussing about Nidra, the ancient Acharyas have stated that happiness and sorrow, growth and wasting, strength and weakness, virility and impotence and the knowledge and ignorance as well as the existence of life and its cessation depend on the sleep.^[5] According to Acharya kashyapa, getting good sleep at a proper time is one of the characteristic of a healthy individual.

Shirodhara, oil dripping on the forehead in a steady stream or flow, is a widely practiced complementary treatment (upakarma) of Ayurveda in both India and the United States.

CASE REPORT

A female patient aged 55 years of presented with the complaints of sleeplessness, headache and heaviness in all over body since 1 year. Due to age factor and mental stress, patient complains of falling asleep during the night, therefore he took sedatives regularly from last 6 months, in spite of that patient was not getting proper sleep.

Table 1: Ashthavidha pariksha.

Nadi(pulse)-76/min	Shabda(speech)-Clear
Mal(stool)-Samyak	Sparsh(touch)-Samashitoshna
Mutra(urine)-Samyak	Druk(eyes)-Normal
Jivha(tongue)-Niram	Aakruti(built)-Madhyam

Treatment given

Shirodhara with Brahmi oil was done for 45 minutes on each participant for 5 consecutive days.

OBSERVATION**Table 2: Shows before and after symptoms score.**

Sr.	Symptoms	Beforetreatment	Aftertreatment
1	Sleeplessness	4	1
2	Headache	3	0
3	Heaviness	3	0

DISCUSSION**Insomnia Pathophysiology**

There is a decrease in GABA and galanergic neurons in the ventrolateral preoptic neuronal structure due to psychological causes or another reason. One important factor is that as melatonin levels drop, so do the levels of the other two neurotransmitters. Furthermore, these both become inactive and unable to regulate numerous separate awake centers, resulting in an increase in histaminergic neurons, dopamine neurotransmitters, and a decrease in Serotonin levels, all of which are linked to sleep disruption. Some possible approaches for understanding the underlying pathophysiology of insomnia are discussed in advance.^[6]

a) Homeostasis is influenced by the length of time spent awake. b) Circadian- Transmit stimulatory signals to arousal networks in opposition to the homeostatic desire to sleep to promote wakefulness. c) The flip-flop model was developed by Saper and colleagues. It is made up of two sets of components that are mutually inhibiting. VLPO (GABA and Galaninergic Neurotransmitter) is found on one arm, while TMN (histaminergic neurons) and brainstem arousal areas are found on the other (Serotonergic, dopaminergic neurons, and Acetylcholine). If one side is somewhat more activated than the other, the weaker side will be inhibited, and vice versa.

Shirodhara Mechanism of Action in Insomnia-

Changes in hormones and neurotransmitters cause insomnia, which is characterized by difficulty initiating and maintaining sleep. Shirodhara therapy can produce changes in hormones and neurotransmitters, which can assist keep the body in balance. Shirodhara's mechanism can be deduced at the following levels:-The consequence of impulse generation.

1. Temperature's Impact
2. Absorption via the scalp
3. During the procedure, the dim light has an effect.

1. Effect of Impulse Generation- In Shirodhara therapy, a continuous stream of liquid is poured over the forehead, creating a steady pressure. Through the hollow sinus, this

constant pressure amplifies and creates impulses, which are then sent within via cerebrospinal fluid.^[7] This impulse activates sleep-regulating parts of the brain, causing Melatonin, GABA, and Serotonin levels to normalize, as well as a drop in Histamine, Acetylcholine, and Dopamine levels. The temperature of the liquid poured over the forehead in this therapy is usually higher than the temperature of the body. According to one study, a slight local increase in temperature causes neuronal activity, which is linked to sleep patterns, and suppressing this causes awake. Mild skin warming has also been linked to sleep-like activity in the cerebral cortex and the reticular formation of the midbrain.^[8]

2. Absorption through the scalp vein- Drugs are absorbed through the scalp vein after being poured locally for 30-45 minutes in Shirodhara. Drugs enter the systemic circulatory system through emissary veins in the scalp.^[9] One study in Japan found that drug delivery through the scalp is a viable route for drug administration. Shirodhara may thus aid in achieving the desired results.^[10]

3. Shirodhara therapy is performed under dark light, which has an effect on the procedure. The explanation for this could be that melatonin hormone is released more under dim light, which aids in sleep initiation.^[11] As a result, this therapy must be performed in a suitable environment.

CONCLUSION

Results of the brahmi oil treatment in the aforementioned case study were favourable. This treatment reduced the symptoms of headache and fatigue and increased the length and quality of sleep. Thus, it may be said that shirodhara is a secure and reliable method of managing anidra. The patient has not reported any negative effects while receiving treatment.

REFERENCE

1. Roth T. Insomnia: definition, prevalence, etiology, and consequences. *J Clin Sleep Med*, 2007; 3(5 Suppl): S7-10. [PMC free article] [PubMed] [Google Scholar]
2. Ohayon MM. Epidemiology of insomnia: what we know and what we still need to learn. *Sleep Med Rev*, 2002; 6(2): 97-111. [PubMed] [Google Scholar]
3. Hidalgo JL-T, Gras CB, García YD, Lapeira JT, del Campo JM, Verdejo MAL. Functional status in the elderly with insomnia. *Qual Life Res.*, 2007; 16(2): 279-86.
4. Vidyadhar Shukla, Ravi Dutt Tripathi, Charak Samhita, Chaukhamba Sanskrit Pratishthan, Delhi, 2010; 171. 305.
5. Schwartz, J. and Roth, T., *Neurophysiology of Sleep and Wakefulness: Basic Science and Clinical Implications*. Current Neuropharmacology, 2008; 6(4): 367-378.

6. Kajaria D, tripathi J, tiwari S. An Appraisal of The Mechanism of Action of Shirodhara. *Annals of Ayurvedic Medicine*, 2013; 2: 114-117.
7. Romeijn N, Raymann R, Møst E, Te Lindert B, Van Der Meijden W, Fronczek R et al. Sleep, vigilance, and thermosensitivity. *Pflügers Archiv - European Journal of Physiology*, 2011; 463(1): 169-176.
8. Chaurasia BD, human anatomy vol.3, edited by krishna garg, chapter1, Osteology of head and neck, New Delhi, CBS publishers and distributors pvt ltd, 2010; 18.
9. Ogiso T, Shiraki T, Okajima K, Tanino T, Iwaki M, Wada T. Transfollicular Drug Delivery: Penetration of Drugs Through Human Scalp Skin and Comparison of Penetration Between Scalp and Abdominal Skins In Vitro. *Journal of Drug Targeting*, 2002; 10(5): 369-378.
10. Gooley J, Chamberlain K, Smith K, Khalsa S, Rajaratnam S, Van Reen E et al. Exposure to Room Light before Bedtime Suppresses Melatonin Onset and Shortens Melatonin Duration in Humans. *The Journal of Clinical Endocrinology & Metabolism*, 2011; 96(3): E463-E472.