



## EFFECT OF JALA SHIRODHARA IN ANIDRA W.S.R TO INSOMNIA – A CASE SERIES

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### ABSTRACT

Insomnia also known as sleeplessness, is a sleep disorder in which people have trouble sleeping. There are around 10% to 30% of adults have insomnia at any given point in time and up to half of people have insomnia in a given year and about 6% of people have insomnia that is not due to another problem and lasts for more than a month. The typical first line of treatment is Sleep hygiene and lifestyle changes but is restricted only to mild cases, Moderate or severe cases require medications like sleeping pills, sedatives, antidepressants, antipsychotic drugs like Antihistamines, Benzodiazepines, etc. The side effect, dependency, and withdrawal symptoms of these drugs are not new to the medical sciences. On the antagonistic part, Ayurveda can provide a safe and effective noninterventional solution to it by *Shirodhara* a Panchakarma therapeutic measure. In this case series Jala (Plain Lukewarm Water) was used to see the effect on various criteria like Athens Insomnia Scale Hamilton Anxiety Scale, Hamilton Depression Scale, WHO – Quality of scale (Bref), and *Ayurveda Lakshana* and an overall improvement ranging from 62.8 % to 91.2 % was found in all these criteria's which was found worth sharing to the medical fraternity for enhancement and its further appraisal.

**Keywords:** *Anidra, Shirodhara, JalaDhara, Insomnia, Ayurveda*

## INTRODUCTION

The man of the 21st century is breathing under various stresses, strains, and anxiety. Someone is worried on account of lack of material, happiness, and comforts, while someone else is worried on account of lack of mental peace. Co-ordination between ambitions and capabilities is no more seen. Everybody is desirous for rising higher than his present position for reaching the acme of progress. The lifestyle is far from what the natural anatomy and physiology of the human body permit. Irregular and unnatural food habits, suppression of natural urges, lack of proper sleep, and less time for relaxation are the inseparable parts of our routine that enervate the body and finally lead to the disease. This stress and strain of day-to-day life affect one's bodily organs through several psycho-physical mechanisms. Among the several psychosomatic diseases, insomnia is one of them, which can be compared with *Anidra*. *Ahara*, *Nidra*, and *Brahmacharya* are the three factors that play an important role in the maintenance of a living organism. In Ayurvedic literature, these factors i.e., *Ahara*(diet), *Nidra*(sleep), and *Brahmacharya*(celibacy) have been compared with the three legs of sub-support and have been termed as the three *Upastambhas*<sup>1</sup>. The ancient *Acharyas* have stated that happiness and sorrow, growth and wasting, strength and weakness, virility and impotence, and knowledge and ignorance as well as the existence of life and its cessation depend on sleep<sup>2</sup>. There is a close connection between our body and our mind<sup>3</sup>. Charaka defined *Chinta* (stress)-*atichintan* (overthinking) are the causative factors of the vitiation of *Rasavaha Srotas*- a body channel that may cause many diseases in the human body. *Chinta* aggravates *Vata*<sup>4</sup>, the vitiated *Vata* adversely affects the heart and destabilizes the *buddhi* and *smriti*<sup>5</sup> According to Ayurveda physiology, *Tridosha* (functional units of the body) regulates the normal physiology of the human body; they maintain or destroy the body by equilibrium or disequilibrium<sup>6</sup>. *Shirodhara* is a unique non-invasive technique of Ayurveda. Its non-invasive approach has been shown good or even better for the treatment of insomnia, anxiety, stress, headache, and hypertension

<sup>7</sup>. *Shiro* means head and *dhara* means dripping. *Shirodhara* is the procedure in which oil or any liquid drips on the forehead in a steady stream or flow for 36 min to 1 h 12 min<sup>8</sup>. Total treatment duration in terms of days is not specified in classical texts, based on various practices in India *Shirodhara* is done for 3, 7, 14, or 28 days<sup>9</sup>. Many studies showed that *Shirodhara* significantly decreased levels of state of anxiety<sup>10</sup>. Studies published by Japanese researchers showed plasma levels of noradrenaline decreased significantly in the *Shirodhara* treatment<sup>11</sup>. *Shirodhara* may also be useful for restraining the disruption of *manasbhava* and anxiety disorder.<sup>12</sup> *Shirodhara* from Jala acts by relieving stress and expanding one's consciousness leading to relaxation to make the patient healthy and happy for getting sufficient sleep<sup>13</sup>. hence it was taken into consideration to treat *Anidra* patients with *Jaladhara*.

## METHODOLOGY

It is a randomised clinical trial with the purpose of treating *Anidra* through intervention of *Shirodhara* with three different medicinal forms in a parallel assignment.

Patients coming to O.P.D of All India Institute of Ayurveda, New Delhi were selected on the basis of inclusion and exclusion criteria. A total of 7 patients were taken in the study.

**Total Duration of study** – 30 Days

**Intervention time** –14 Days

**Follow-up** – 16 days.

**Assessments** – 1<sup>st</sup>, 7<sup>th</sup>, 14<sup>th</sup>, 21<sup>st</sup>, 30<sup>th</sup> day (Earlier total of 7 assessments were reduced to 5 assessments due to COVID-19 Pandemic)

**Statistical Tools** – The test used statistical analysis within the groups and between the groups.

## Inclusion Criteria

- Patients presenting with complaints of Reduction of sleep time.
- Patients fulfilling AIS scoring i.e.,  $\geq 7$ .
- Wakefulness during normal sleep.
- All of them for the duration of 3 months or more.
- Patients of either sex in the age group of 20 – 70 years.

**Exclusion Criteria**

- The patient below 20 and above 70 years
- Pregnant women and Lactating women.
- Patient with Stroke, Hemorrhagic disorders, Epilepsy, or any other psychotic disorder.
- Patients with alcohol dependency or drug addiction.
- Rashes, Cuts, Abrasions, neck Injury on the head.

**ASSESSMENT CRITERIA**

Assessment criteria include two types of assessment.

1. Primary
2. Secondary

**Primary Criteria include.**

- Athens Insomnia Scale
- Hamilton Anxiety Scale
- Hamilton Depression Scale
- WHO – Quality of scale (Bref)

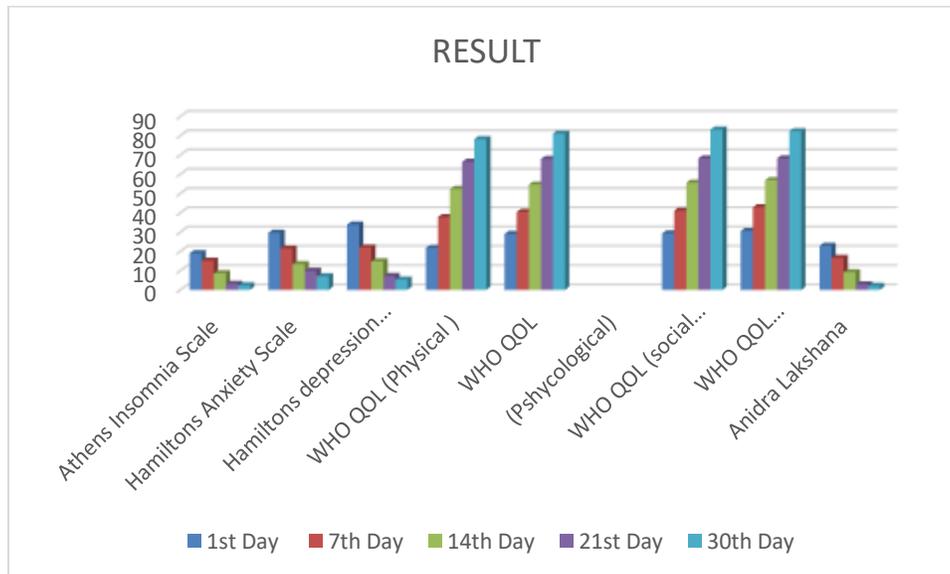
**Secondary Criteria include – Anidra Lakshanas** (Jrumbha, Tandra, Angamarda, Shiroroga, Shirogaurav, Akshigaurav, Jadya, Glani, Bhrama, Apakti, Vataroga).

**Table 1 - Result**

The following result was found in the study (Table 1)

Assessment Criteria	1 <sup>st</sup> Day	7 <sup>th</sup> Day	14 <sup>th</sup> Day	21 <sup>st</sup> Day	30 <sup>th</sup> Day	% Improvement
Athens Insomnia Scale	19.00	15.14	8.57	3.14	2.29	87.9%
Hamiltons Anxiety Scale	29.57	21.43	13.29	9.86	7.00	76.3%
Hamiltons depression scale	33.86	22.00	14.71	7.14	5.29	84.3 %
WHO QOL (Physical)	21.71	37.71	52.29	66.43	78.14	72.2 %
WHO QOL (Phycological)	29.00	40.43	54.57	67.86	81.00	64.1 %
WHO QOL (social Relationship)	29.29	41.00	55.57	68.14	83.14	64.7 %
WHO QOL (Environmental)	30.57	42.86	56.86	68.14	82.29	62.8 %
Anidra Lakshana	22.86	16.57	9.14	2.86	2.00	91.2 %

**GRAPH 1 - GRAPHICAL REPRESENTATION OF RESULTS IN ALL THE ASSESSMENT CRITERIA**



## ANALYSIS

An overall improvement was seen in the assessment criteria taken into consideration. (Table 1&Graph1) In Athens Insomnia Scale there was an overall decrease seen from 19 to 2.29 from Day 1 to Day 30 with a percentage improvement of 87.9 %. Likewise, on the Hamiltons Anxiety Scale also a decrease was seen from 29.57 to 7 from Day 1 to Day 30 with a percentage improvement of 76.3 %. Also, on Hamilton's Depression Scale decrease was seen from 33.86 to 5.29 from Day 1 to Day 30 with a percentage improvement of 84.3 %. WHO Quality of Life was also observed to have an overall improvement of 72.2%, 64.1%, 64.2%, and 64.8% in physical, psychological, social relationship, and environmental aspects respectively. All the *Anidra Lakshana* were seen to decrease significantly with an overall improvement of 91.2 %.

## DISCUSSION

*Jaladhara* is the continuous pouring of fresh Luke-warm tap water to the forehead and is an effective treatment for reducing stress and expanding one's consciousness. The mind, body, and spirit are intimately connected, and *Jaladhara* by calming the stressful mind, relaxes the entire physiology. An imbalance of *Prana*, *Udana* and *Vyana Vayu*, *Sadhaka Pitta*, and *Tarpaka Kapha* can produce stress and tension. *Jaladhara* re-establishes the functional integrity between these three subtypes of Dosa through its mechanical effect. *Agya Chakra* is the seat of the pituitary and pineal gland. As we know, the pituitary gland is one of the main glands of the endocrine system. *Jaladhara* stimulates the pituitary gland through its penetrating effect, which helps bring the hormonal balance. In relation to the *Doshas*, *Chittodvega* is mainly produced due to *Vata* and *Pitta Dosa*. *Jaladhara* has a calming and centring effect on *Vata Dosa*. *Jaladhara* also provided coolness to reduce *Pitta Dosa*. Hence, *Jaladhara* has a calming, penetrating, and cooling effect, which is very useful in eradicating *Chittodvega*. *Jaladhara* having *Guru - Snigdha Guna*, *Shita Virya*, and *Vata-Pittahara* prop-

erties, balance the vitiated *Vata - Pita Doshas* in this disease. Hence *Jaladhara* has a calming, penetrating, and cooling effect and is thus beneficial in eradicating *Anidra*. In this way, *Jaladhara* is beneficial in eradicating *Anidra* (Insomnia). It is useful in *Vata dosha* by its calming and penetrating effect whereas useful in *Pittadosha* by its cooling effects. *Shirodhara* with *Jala* is a kind of hydrotherapy that is probably as old as mankind. Hydrotherapy is one of the basic methods of treatment widely used in the system of natural medicine, which is also called water therapy, aquatic therapy, pool therapy, and balneotherapy. The use of water in various forms and various temperatures can produce different effects on different systems of the body. Many studies/reviews reported the effects of hydrotherapy on various systems. Hydrotherapy has a scientific evidence-based effect on various systems of the body.<sup>15</sup> The National Sleep Foundation states that "Soaking in hot water, such as a hot tub or bath, before retiring to bed can ease the transition into a deeper sleep." Soaking in hot water approximately 90 minutes before going to bed triggers your body's internal thermostat to lower your temperature. The gradual drop in body temperature can induce drowsiness, leaving you more prepared for sleep. The increased blood flow in the body caused by the warm water diverts some blood from the head, which reduces brain activity and settles the busy mind. here are various studies that suggest that hot water therapy has varied medicinal benefits, it was found that water immersions Hydrotherapy (WI) in various temperatures (32°C, 20°C, and 14°C) produced various effects. Immersion at 32°C did not change metabolic rate (MR) and rectal temperature (Tre), but it lowered the heart rate (HR) by 15%, systolic blood pressure (SBP), and diastolic blood pressure (DBP) by 11% and 12%, respectively, compared, with controls at ambient air temperature. Along with HR and blood pressure (BP), the plasma renin activity, plasma cortisol, and aldosterone concentrations were also lowered by 46%, 34%, and 17%, respectively, while diuresis was increased by 107%.<sup>15</sup> Immersion at 20°C produced a similar de-

crease in plasma renin activity, HR, SBP, and DBP, in spite of lowered Tre and increased MR by 93%. Plasma cortisol concentrations tended to decrease, while plasma aldosterone concentration was unchanged. Diuresis was increased by 89%. No significant differences in changes in plasma renin activity, aldosterone concentration, and diuresis compared with subjects immersed in 32°C.<sup>16</sup> Immersion at 14°C lowered Tre and increased MR by 350%, HR, SBP, and DBP by 5%, 7%, and 8%, respectively. Plasma noradrenaline and dopamine concentrations were increased by 530% and by 250%, respectively, while diuresis increased by 163%, which was more than at 32°C. Plasma aldosterone concentrations increased by 23%. Plasma renin activity was reduced. Cortisol concentrations tended to decrease. Plasma adrenaline concentrations remained unchanged. Changes in plasma renin activity were not related to changes in aldosterone concentrations.<sup>17</sup> WI in different temperatures did not increase blood concentrations of cortisol. There was no correlation between changes in Tre and changes in hormone production. The physiological changes induced by WI are mediated by humoral control mechanisms, while responses induced by cold are mainly due to increased activity of the sympathetic nervous system (SNS).<sup>18</sup> Regular winter swimming significantly decreased tension, fatigue, memory, and mood-negative state points with the duration of the swimming period; significantly increased vigour-activity scores; relieved pain who suffered from rheumatism, fibromyalgia, or asthma; and improved general well-being in swimmers.<sup>19</sup> During CE increase levels of circulating norepinephrine were observed and exercising the HPA system by repeated CE could potentially restore its normal function in chronic fatigue syndrome, or at least increase net HPA activity (without changing baseline activity).<sup>20</sup> It produces a temporary increase in plasma levels of adrenocorticotrophic hormone (ACTH), beta-endorphin, and cortisol.<sup>21</sup> The sustained/longer-term effects of cold stress repeated daily produced an increase in ACTH, corticosterone, and a decrease in  $\alpha$ -1-antitrypsin and testosterone.<sup>22</sup> Cold stress reduces the level of serotonin in most regions of the brain

(except the brainstem).<sup>23</sup> Cold stress-induced analgesia might be mediated by increased production of opioid peptide beta-endorphin (an endogenous painkiller).<sup>24 25</sup> It can be concluded that water has healing benefits and retain antianxiety activities.

## CONCLUSION

*Nidra* is an essential phenomenon for the maintenance and restoration of both body and mind, which is considered under *Trayopastambha*. Proper sleep provides immunity, the balance of the body constituents, alertness, good vision, good complexion, fire digestive power as well as happiness, vigor, virility, nutrition, and long life. Moreover, sleep maintains the nourishment of the body, relaxes the mind, and enhances the longevity of human beings. *Manasika Nidanas* as well as Psychic stress are the main causative factors of the disease. *Vata* and *Rajasa* play a key role in the pathogenesis of *Anidra*. Principal medications along with psychic management ultimately provide the '*Manah Sukham*'. *Anidra vis-à-vis* insomnia can be treated with *Shirodhara*. This procedure has been successfully practiced in treating stress-induced various disorders like anxiety, depression, tension headache, hypertension, insomnia, etc. This leads to relaxation of the frontalis muscle to achieve decreased activity of the central and autonomic nervous system with lowering of brain cortisone and adrenaline level.

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