

The “wet sheet pack”-a Naturopathy intervention for Primary insomnia – A clinical case report

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ABSTRACT

Insomnia is a sleep disorder characterised by difficulty falling or remaining asleep. Insomnia can be categorized into primary and secondary insomnia; however, some studies have also subcategorized it into sleep onset insomnia and sleep maintenance insomnia. Wet sheet pack is the most commonly used treatment in Naturopathy, which involves covering the whole body with a wet linen sheet followed by a woolen sheet and leaving the head uncovered. A 51 year old male presented with the complaint of primary insomnia underwent wet sheet pack treatment for seven days. After the intervention period of seven days, there was a significant improvement in PSQI, PSS, ISI and ESS. This case report shows the efficacy of wet sheet pack in management of primary insomnia.

Keywords- *Insomnia, Naturopathy, Wet sheet pack, Complementary and Alternative Medicine*

Insomnia is the most common sleep disorder encountered by people of all ages. Insomnia was typically defined as difficulty falling asleep, difficulty staying asleep, or waking up too early and being unable to fall back asleep [1]. Insomnia can be categorized based on the duration into acute and chronic types, depending on the etiology, into primary and secondary insomnia and based on the clinical features into sleep onset insomnia and sleep maintenance insomnia [2]. Chronic insomnia with disease course of greater than three months and with frequency of more than thrice a week. The causes of insomnia are numerous, and they are the most difficult to diagnose and treat.

Etiology may include predisposing factor, precipitating factor, and perpetuating factor. Predisposing factors includes ageing, demographic, biological, psychological, social characteristics most interestingly women are more prone to develop insomnia than men. Precipitating factor may include stress, anxiety, and depression, any disease condition that may disrupt sleep, medication such as beta

blockers, glucocorticoids, non-steroidal anti-inflammatory drug, and decongestant. Perpetuating factor most likely related to behavioural and cognitive changes [3]. Insomnia could be a disease by itself or can be a sign of pre-existing physical and psychological morbidities.

Clinical features are difficulty in falling asleep, grumpiness, difficulty in maintaining sleep, waking up too early and unable to sleep again, fatigue during daytime, unable to concentrate, poor memory and irritation [4]. About 30% of adult was affected by insomnia [5]. The most common complication of insomnia is a decrease in the quality of life along with aggravation of the existing disease conditions. Naturopathy is most widely used alternative and complementary medicine which uses five great elements of nature to influence both health and disease conditions [6]. Wet sheet pack is one of the most widely used treatment modality in Naturopathy. Wet sheets have a well-established beneficial effect on psychological well-being; additionally, the sedative effect of wet sheets on healthy individuals paves the way for its use as a treatment modality in patients with

insomnia. This case report explains therapeutic effects of wet sheet pack in a patient with primary insomnia.

CASE REPORT

A 51-year-old male patient from Chennai visited our outpatient department who was prediagnosed with primary Insomnia during the year of 2010. At the time of visit to the hospital at march 2022, he had a complaint of difficulty in falling asleep even though reaching bed before 10 pm. He had a sleep latency period of more than two hours and the sleep was very shallow, the duration of the sleep was hardly 4-5 hours a day. The patient had a specific noticeable and annoying symptom of not being able to sleep after waking up at night. He had an occupational history of mariner and irregular sleep wake pattern for past 20 years. On his first visit to our hospital, he was excluded due to a DASS-21 scale assessment because he had no allergies, no history of genetic disorder, hypertension, diabetes, coronary artery disease, cerebrovascular disease, or other chronic diseases such as asthma, hepatitis, or tuberculosis. He was under the medication of Doxepin 10 mg at night for the period of 1 month [November 2021] since the effect was unsatisfactory and all the symptoms persisted, discontinued the medication from December 2021 and after that he was not under any medication. He was diagnosed as with primary insomnia through his history and the DASS 21 assessment.

INTERVENTION

The procedure of wet sheet pack and the duration of intervention was explained to the patient and written informed consent was obtained before the start of the treatment. During the intervention period the patient didn't undergo any other treatments and not under any medication. Wet sheet pack was applied to the patient by using a linen cloth of 210 cm length and 140 cm of breadth. A thermometer was used to measure the temperature of a linen cloth dipped in 6 liters of water at $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The dipped linen cloth was completely wrung, so no water was shed from it. Two dry woolen blanket of 214 cm in length and 141 cm in breadth is spread on the coach. Above the dry woolen blanket wet linen cloth was spread and the patient is made to lie on it. Patient was asked to raise both arms, attendant draws the right side of the wet linen across the body, turning under arms and tucking it in opposite side of the body. Then the arms kept near to the trunk and the left side of wet linen covers the arms and tucked to the opposite side of body. From the hips down, the edge of the sheet is snugged around the corresponding leg. The woolen cloth covered by, the arms close to the trunk in upper part of body and as like wet linen below hips. Head region kept

uncovered. The intervention was given to the patient around 4.00 pm IST and duration of intervention session was 20 mins / day for seven days.

RESULT

The treatment session lasted for seven days; wet sheet pack was given once in a day for 40 minutes. Baseline data was collected on day one before the commencement of treatment and post data was collected on day seven after the intervention. The Pittsburg sleep quality index (PSQI) was used to evaluate the quality of sleep in patients [7], perceived stress scale (PSS) was used to analyze the stress [8], Insomnia severity index (ISI) used to assess the severity of the condition [9] and Epworth sleepiness scale (ESS) used to differentiate fatigue and daytime sleepiness was used [10]. Results have been recorded in Table 1. After the intervention period of seven days there was a significant improvement in Pittsburg sleep quality index, perceived stress scale, insomnia severity index and Epworth sleepiness scale. No adverse symptoms and obvious change of weight was found during the treatment. Moreover, patient felt very refreshing and his body was very light after the treatment, specifically patient could able to sleep after waking up in the midnight which made him to feel happy and also told that he could able to sleep within 20 -30 minutes after reaching the bed and in follow up after 2 months through telecommunication the patient's improvement in sleep quality persists.

DISCUSSION

A 51-year-old male underwent wet sheet pack intervention for seven days. After seven days of intervention his PSQI and PSS score reduced from 18 to 7 and 23 to 12 correspondingly. Hydrotherapy, branch of treatment modality in Naturopathy which involves internal and external application of water in any of its form at various temperature that have enormous therapeutic effect [11]. Wet sheet pack is one of the external hydrotherapy treatments [12], this case report tries to bring out the possible mechanism of action and its therapeutic potential on primary insomnia. Wet sheet pack was found to be effective in the improvement of sleep quality in patient with primary Insomnia and there is significant change in PSQI, PSS, ISI and ESS score after the intervention period of seven days. The PSQI is a 19-item, self-rating questionnaire created for clinical populations to assess sleep quality and disturbance during the previous month. It contains 19 questionnaires which are subdivided into 7 categories: sleep length, sleep disruption, sleep latency, daily dysfunction from excessive drowsiness, sleep efficiency, overall sleep quality, and

usage of sleep medications. Each of the sleep factors is scored from 0 to 3, with 3 denoting the best sleep. A total score is calculated from the sum of the sleep component scores, ranging from 0 to 21, with a greater total score indicating poor sleep quality [13].

The PSS was created as a 14-item scale that assesses the responder to score the frequency of his or her experiences and thoughts in relation to incidents and circumstances that happened over the previous month [14]. The ESS is a self-administered questionnaire that asks participants to rate their likelihood of sleeping off in common settings. It offers a total score, with a range of 0 to 24, that has been linked to the subject's degree of daytime sleepiness [15]. The Insomnia severity index is a 7-item self-report questionnaire that evaluates the type, severity, and effects of insomnia. The dimensions assessed include the severity of sleep onset, maintenance, and early morning awakening problems, sleep dissatisfaction, interference of sleep difficulties with daytime functioning, noticeability of the sleep problems by others, and distress brought on by the sleep difficulties. The typical recall period is the "last month" [16].

This is the first ever case report to record the efficacy of wet sheet pack on primary insomnia. Various parts of brain work in co-ordination to maintain sleep-wake cycle which includes ascending reticular activating system, cerebral cortex, limbic system, and hypothalamus [17]. The neurotransmitters GABA, norepinephrine, dopamine, serotonin play a major role in regulating sleep [18]. Previous research on wet sheet packs clearly shows that a possible mechanism of sedative effect would be a reduction in brain psychomotor activity, calming the nervous system by decreasing blood supply to the brain, and lymph accumulation [19]. There is a pronounced soothing effect produced after the wet sheet pack, which is because after the application of cold to the wide area of the skin the afferent impulses reach central nervous system, vasomotor changes occur and result in relaxation of the body [20].

Wet sheet packing has been found to be cost-effective and economical. We have few limitations to report as well after the application of pack the patient should remain in the same position which was quite difficult, and we had not followed up the case to know about the reoccurrence of the symptom. Literature on wet sheet pack is very small therefore we are in need of studies done on larger population to confirm the effect of wet sheet pack. However, this case report will provide the physician with a clear understanding of the effect of a cold, wet sheet pack on primary insomnia.

CONCLUSION

This case report shows the efficacy of wet sheet pack in management of primary insomnia. Thus, wet sheet pack can be used as a supportive treatment to improve sleep quality in patients with primary insomnia. However, large sample studies are recommended.

REFERENCES

1. Kapella MC, Herdegen JJ, Perlis ML, et al. Cognitive behavioral therapy for insomnia comorbid with COPD is feasible with preliminary evidence of positive sleep and fatigue effects. *Int J Chron Obstruct Pulmon Dis*. 2011;6:625-35. doi: 10.2147/COPD.S24858.
2. Bolstad CJ, Nadorff MR. What types of insomnia relate to anxiety and depressive symptoms in late life? *Heliyon*. 2020 Nov 2;6(11):e05315. doi: 10.1016/j.heliyon.2020.e05315.
3. Patel D, Steinberg J, Patel P. Insomnia in the Elderly: A Review. *J Clin Sleep Med*. 2018;14(6):1017-1024. Published 2018 Jun 15. doi:10.5664/jcsm.7172
4. Buysse DJ. Insomnia. *JAMA*. 2013 Feb 20;309(7):706-16. doi: 10.1001/jama.2013.193.
5. Maness DL, Khan M. Nonpharmacologic Management of Chronic Insomnia. *Am Fam Physician*. 2015 Dec 15;92(12):1058-64.
6. Maheshkumar K, Venugopal V, Poonguzhali S, et al. Trends in the use of Yoga and Naturopathy based lifestyle clinics for the management of non-communicable diseases (NCDs) in Tamilnadu, South India. *Clinical Epidemiology and Global Health*. 2020 Jun 1;8(2):647-51.
7. Buysse DJ, Reynolds CF 3rd, Monk TH, et al. The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry Res*. 1989; 28(2):193-213. doi: 10.1016/0165-1781(89)90047-4.
8. Yokokura AVCP, Silva AAMD, Fernandes JKB, et al. Perceived Stress Scale: confirmatory factor analysis of the PSS14 and PSS10 versions in two samples of pregnant women from the BRISA cohort. *Cad Saude Publica*. 2017 Dec 18;33(12):e00184615. doi: 10.1590/0102-311X00184615.
9. Morin CM, Belleville G, Bélanger L, et al. The Insomnia Severity Index: psychometric indicators to detect insomnia cases and evaluate treatment response. *Sleep*. 2011 May 1;34(5):601-8. doi: 10.1093/sleep/34.5.601.
10. Lok R, Zeitzer JM. Physiological correlates of the Epworth Sleepiness Scale reveal different dimensions of daytime sleepiness. *Sleep Adv*. 2021 May 29;2(1):zpab008. doi: 10.1093/sleepadvances/zpab008.

11. Mooventhan A, Nivethitha L. Scientific evidence-based effects of hydrotherapy on various systems of the body. *N Am J Med Sci.* 2014 May;6(5):199-209. doi: 10.4103/1947-2714.132935.
12. Harmon RB. Hydrotherapy in state mental hospitals in the mid-twentieth century. *Issues Ment Health Nurs.* 2009 Aug;30(8):491-4. doi: 10.1080/01612840802509460.
13. Zhong QY, Gelaye B, Sánchez SE, et al. Psychometric properties of the Pittsburgh Sleep Quality Index (PSQI) in a cohort of Peruvian pregnant women. *Journal of Clinical Sleep Medicine.* 2015 Aug 15;11(8):869-77.
14. Andreou E, Alexopoulos EC, Lionis C, et al. Perceived stress scale: reliability and validity study in Greece. *International journal of environmental research and public health.* 2011 Aug;8(8):3287-98.
15. Boyes J, Drakatos P, Jarrold I, et al. The use of an online Epworth Sleepiness Scale to assess excessive daytime sleepiness. *Sleep and breathing.* 2017 May;21(2):333-40.
16. Morin CM, Belleville G, Bélanger L, et al. The Insomnia Severity Index: psychometric indicators to detect insomnia cases and evaluate treatment response. *Sleep.* 2011 May 1;34(5):601-8.
17. Riemann D, Nissen C, Palagini L, et al. The neurobiology, investigation, and treatment of chronic insomnia. *Lancet Neurol.* 2015 May;14(5):547-58. doi: 10.1016/S1474-4422(15)00021-6.
18. Oh J, Petersen C, Walsh CM, et al. The role of co-neurotransmitters in sleep and wake regulation. *Mol Psychiatry.* 2019 Sep;24(9):1284-1295. doi: 10.1038/s41380-018-0291-2.
19. Kennedy M, Helms P, Dykstra M. The sedative wet sheet pack. *The American Journal of Nursing.* 1936 Jan 1:53-60.
20. Ross DR, Lewin R, Gold K, et al. The psychiatric uses of cold wet sheet packs. *The American Journal of Psychiatry.* 1988 Feb.

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