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Case Report

Ayurveda Section

Ayurvedic Management of Kleine-Levin Syndrome: A Rare Case Report

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ABSTRACT

Kleine-Levin Syndrome (KLS) is a rare neurological disorder that predominantly appears during adolescence. This condition is characterised by intermittent periods of extreme drowsiness, unusual behavioural patterns, and impaired cognitive functions, including experiences of feeling disconnected from reality (derealisation). Individuals affected may also show signs of increased food intake (hyperphagia) and heightened sexual urges (hypersexuality). An 18-year-old male reported recurrent bouts of extended sleep duration, each beginning abruptly and lasting for roughly 12 to 14 days. These episodes occurred around four to five times within the last year. During such phases, the patient experienced pronounced somnolence, sleeping for approximately 15 to 16 hours daily. Based on the clinical presentation and symptomatology, a diagnosis of KLS was established. The present case was managed with Ayurvedic Shodhana (biopurification) and Shamana (palliative) therapies, demonstrating significant improvement in the assessment parameters of Sleeping Beauty Syndrome. This case study emphasises the possibility of utilising Ayurvedic treatment as a supportive or substitute method in addressing KLS, thus expanding the range of therapeutic choices for this rare and challenging condition.

Keywords: Hypersomnia, Neurological condition, *Shodhana* therapy, Somnolence

CASE REPORT

An 18-year-old male presented to the Kayachikitsa outpatient department with recurrent episodes of prolonged sleep, each lasting approximately 12 to 14 days and occurring four to five times annually over the past year. During these episodes, he experienced excessive drowsiness, sleeping 15 to 16 hours per day, and had difficulty being aroused. When awakened, he displayed marked irritability, which occasionally escalated into severe agitation, confusion, and impaired behavioural control. These episodes were also characterised by hyperphagia, with the patient consuming significantly more food than usual. Notably, he returned to baseline functioning between episodes, with no residual symptoms.

There was no personal or familial history of psychiatric or neurological illness. On neurological consultation, armodafinil 100 mg once daily was advised during episodes, but the patient reported unsatisfactory relief over nine months. Consequently, he was referred for Ayurvedic evaluation and management.

General examination revealed normal vital signs, including blood pressure, pulse rate, respiratory rate, and temperature. The patient appeared drowsy and irritable but was otherwise stable. Neurological examination showed intact mental status, cranial nerves, motor and sensory systems, reflexes, coordination, and autonomic functions. Higher cognitive functions such as judgement, insight, and comprehension were preserved. MRI brain and EEG studies were unremarkable, with no evidence of structural or electrical abnormalities.

Ayurvedic assessment was conducted using Ashtavidha Pariksha (eightfold examination) and Dashavidha Pariksha (tenfold examination) [Table/Fig-1,2]. The eightfold examination revealed a pulse rate of 78/min with Kapha-Pitta predominance, normal bowel and urinary habits, an uncoated tongue (niram), clear speech (spashta), neutral skin temperature (anushnasheet), confused vision (drik), and moderate body build (madhyam akriti). The tenfold examination indicated a Kapha-predominant Pitta prakriti, Kapha and Tamasika vikriti, and well-developed muscle and adipose tissue (mamsa-sara and meda-sara), proportionate body measurements, low to moderate psychological strength (satva), intense digestive fire (tikshanagni), poor exercise capacity (avara vyayama-shakti), and dietary preference for heavy, Kapha-increasing foods (guru and kapha-pravardhaka ahara).

S. No.	Examination	observation
1.	Nadi (Pulse rate)	78 times/minute, kapha pitta
2.	Mutra (Frequency of micturition)	6-7 times per day
3.	Mala (Bowel)	Regular
4.	Jihva (Tongue)	Niram (uncoated)
5.	Shabda (Sound)	Spashta (clear)
6.	Sparsha (Touch)	Anushnasheet (Nor cold nor hot)
7.	Drik (Vision)	Irritative and confused
8.	Akriti (Body built)	Madhyam (Moderate)

[Table/Fig-1]: Ashtavidha Pariksha (Eight folds of examinations).

S. No.	Examination	Observation
1.	*Prakriti* (Constitution)	Kapha-predominant Pitta
2.	*Vikriti* (Pathological state)	Kapha & Tamasika guna (inertia/ dullness qualities)
3.	*Sara* (Essence of dhatus)	*Mamsa-sara* & Meda-sara (Muscle tissue and adipose tissue excellence)
4.	*Samhanan* (Body build)	Madhyama (moderate)
5.	*Pramana* (Measurement)	Proportionate
6.	*Satmya* (Adaptability)	Guru & Kapha-pravardhaka ahara (heavy and Kapha-increasing diet)
7.	*Satva* (Psychological strength)	Avara to Madhyama Satva (low to moderate mental strength) with irritability, confusion during/after episodes
8.	*Ahara-Shakti* (Power of digestion)	*Tikshanagni* (Intense digestive fire)
9.	*Vyayama-Shakti* (Capacity for exercise)	Avara (very low)
10.	*Vaya* (Age)	Young adulthood

[Table/Fig-2]: *Dashavidha Pariksha* (Ten folds of examinations).

To quantify the severity of Ati-Nidra (excessive sleep), a self-developed grading tool was employed, assessing six parameters: sleep duration, daytime drowsiness, mental clarity (pragya), emotional stability (sadhaka pitta), physical energy (kapha/vata status), and sleep quality (swapna sukha). Each parameter was scored from 0 (normal) to 4 (severe), with higher scores indicating greater severity. Content validity of the tool was confirmed by a panel of five professors [Table/Fig-3].

Parameter	Score 0	Score 1	Score 2	Score 3	Score 4
Sleep duration	6-8 hours (normal)	9-10 hours	11-13 hours	14-18 hours	>18 hours
Daytime drowsiness	None	Mild, not disturbing	Moderate, sometimes affects activity	Severe, frequent need to rest	Persistent sleepiness, can't stay awake
Mental clarity (Pragya)	Fully alert	Slight fogginess	Frequent mental dullness	Disoriented thinking	Very poor clarity, confusion
Emotional stability (Sadhaka Pitta)	Calm, emotionally stable	Mild irritability	Mood fluctuations	Anxiety or apathy	Depressed or emotionally unresponsive
Physical energy (Kapha/ Vata status)	Energetic	Slight fatigue	Tires easily	Exhaustion after mild activity	Very lethargic, immobile
Sleep quality (Swapna Sukha)	Refreshing	Occasionally unrefreshing	Frequently disturbed	Rarely refreshing	Sleep feels unhelpful/ excessive

[Table/Fig-3]: Grading of assessment parameters.
Self-developed grading tool: Content validity was evaluated by a panel of five professors who rated each item for relevance and clarity. Item-level and scale-level Content Validity Indices were calculated. The scale was used to assess the symptoms present in patients, with the normal value for each symptom designated as Grade 0.

Differential diagnosis was systematically evaluated. Idiopathic hypersomnia was excluded due to its continuous nature and lack of behavioural symptoms. Narcolepsy was ruled out due to the absence of cataplexy, sleep paralysis, and hallucinations. Klüver-Bucy syndrome was dismissed based on normal neuroimaging and lack of hypersexuality or visual agnosia. Based on the International Classification of Sleep Disorders (ICSD-3) criteria [1], the episodic nature of hypersomnia, along with behavioural disturbances and hyperphagia, closely matched the clinical profile of KLS, which was thus considered the most likely diagnosis.

The patient received a structured Ayurvedic protocol comprising Deepana-Pachana, Snehana-Swedana, Vamana Karma, Nasya, and Udvartana therapies [Table/Fig-4]. Trikatu churna was administered for three days to enhance Agni, followed by Snehapana with Dadimadi ghrita over six days in escalating doses (30-160 mL). Sarvanga Abhyanga with Brahmi taila and Swedana were performed for one day before Vamana, which was induced using Madanphala churna, Vacha, Pippali, Saindhava lavana, and honey.

Post-Vamana care included daily Nasya with 8 drops of Shadbindu taila per nostril and Dhoompana for 1 month, along with Udvartana using Triphala and Vacha churna. During follow-up, Nasya was tapered to 4 drops per nostril daily for four months, and Udvartana was repeated for seven days each month [Table/Fig-4].

S. No.	Procedure	Medication	Dose and Frequency	Duration
1.	Deepana Pachan	Trikatu powder	5 gm twice a day with lukewarm water before food	3 days
2.	Snehapan	Dadimadi ghrita	30 mL, 60 mL, 90 mL, 120 mL, 140 mL, and 160 mL with lukewarm water on an empty stomach	6 days
3.	Sarvang Snehan Swedan	Brahmi taila	Massage with oil once in morning	1 day
4.	Vaman procedure	Madanphala powder – 5 gm Vacha powder – 3 gm Pippali powder– 2 gm Saindhav lavan – 5 gm Honey- 10 mL	-	1 day
5.	Nasya Followed by Dhoompana	Shadbindu taila	8 drops in each nostril in the morning before food	1 month
6.	Udvartana	Triphala powder+Vacha powder	-	1 month

[Table/Fig-4]: Therapeutic interventions.

Oral medications included Tagara churna (5 gm twice daily), Saraswatarishta (20 mL twice daily), and Brahmi vati (250 mg at night), continued for 4 months to support cognition, calm the mind, and promote sleep [Table/Fig-5].

Diet and lifestyle modifications emphasised light, hydrating meals, regular routines, gentle exercise, and stress reduction, while avoiding heavy foods, stimulants, and overstimulation [Table/Fig-6].

Clinical assessments at 30, 60, and 120 days showed progressive improvement. By day 30, sleep duration, drowsiness, emotional stability, energy, and sleep quality improved. By day 60, most parameters normalised, and by day 120, the patient achieved near-complete recovery with sustained improvements in all domains [Table/Fig-7].

S. No.	Medications	Dose and Frequency	Duration
1.	Tagara powder	5 gm twice a day after meal with lukewarm water	4 months
2.	Saraswatarishta	20 mL twice a day with an equal amount of water after food	4 months
3.	Brahmi vati	250 mg at night after food	4 months

[Table/Fig-5]: Oral medications.

Category	Do's	Don'ts
Diet	Light, easily digestible meals, fresh fruits and vegetables; hydrating foods such as coconut water and soups	Heavy, oily, and fried foods- Excessive sweets and junk food- Excess caffeine or energy drinks
Meal timing	Regular meals at consistent times- Small frequent meals if digestion is weak	Skipping meals- Eating late at night
Hydration	Drink plenty of water throughout the day- Include hydrating fluids like herbal teas	Sugary sodas and excessive caffeine
Exercise	Light physical activity (walking, yoga, stretching) during non-sleeping periods- Breathing exercises and relaxation techniques	Strenuous exercise during episodes- Overexertion immediately after waking
Lifestyle	Stress management techniques (meditation, calm environment)- Supportive routine	Overstimulating environments- Activities that trigger irritability or confusion

[Table/Fig-6]: Diet and lifestyle.

Parameter	Score before treatment	30th day follow-up	60th day follow-up	120th day follow-up
Sleep duration	3	2	1	0
Daytime drowsiness	4	3	2	1
Mental clarity (Pragya)	3	3	2	0
Emotional stability (Sadhaka Pitta)	3	2	1	0

Physical energy (Kapha/Vata status)	4	3	2	1
Sleep quality (Swapna Sukha)	3	2	0	0

[Table/Fig-7]: Progressive improvement in clinical parameters across successive follow-ups.
Note: Scores were derived using a self-developed grading tool designed to assess symptom severity and therapeutic response across domains relevant to Ati-Nidra (Sleeping Beauty Syndrome). Lower scores indicate clinical improvement.

DISCUSSION

The KLS is primarily associated with hypothalamic dysfunction, which may explain the disturbances in sleep, appetite, and sexual behaviour, although consistent structural or functional abnormalities are not always evident [2,3]. The condition is rare, with an estimated prevalence of 1-5 cases per million population and it shows a clear male predominance [4]. A more recent hypothesis proposes a post-infectious autoimmune mechanism, potentially triggered by viral agents and linked to specific Human Leucocyte Antigen (HLA) markers, particularly HLA-DR and HLA-DQB1*0201 [5]. Currently, management is symptomatic, as no definitive cure exists. Amantadine may help shorten the duration of episodes if initiated early, though its efficacy tends to diminish with repeated use. Other stimulants such as modafinil, methylphenidate, and amphetamines may enhance wakefulness but have limited impact on cognitive symptoms [6].

In ayurvedic terms, KLS can be correlated with *Ati-Nidra*, a condition characterised by excessive sleep. This is understood as a result of aggravated *Kapha* and *Tamas* (inertia), which obstruct the functions of *Vyana Vata* (circulatory force) and *Prana Vata* (vital life force), thereby impairing the *Manovaha Srotas* (channels of the mind) and *Majja Dhatu* (nervous and marrow tissue). This leads to symptoms such as lethargy, heaviness, excessive sleep, and diminished mental clarity, especially in chronic cases [7]. In the present case, significant attention was given to dietary and lifestyle modifications to complement the therapeutic interventions. Gentle physical exercises (*Sukshma Vyayama*) were also recommended to improve circulation, enhance alertness, and regulate sleep cycles. These supportive measures contributed to maintaining *dosha* balance and sustaining the benefits of the primary treatment.

Marked improvement was observed in the clinical assessment parameters. A customised grading system was developed to evaluate symptom progression in patients with *Ati-Nidra* (Sleeping Beauty Syndrome), as no prior Ayurvedic case studies on this condition have been documented-only review literature is available. Hence, the grading tool was designed based on the presenting clinical features.

Vamana (therapeutic emesis) was employed to expel aggravated *Kapha* and reduce *Tamas guna* (inertia), thereby restoring the functions of *Prana* and *Vyana Vata* and clearing the *Manovaha Srotas*, which in turn enhanced mental clarity and vitality [8]. *Nasya* (nasal administration) was used to deliver medicated oil directly to the *Urdhva Jatru* (head region), helping to eliminate *Kapha*, and alleviate heaviness, lethargy, and mental dullness associated with *Ati-Nidra* [9,10]. The formulation *Shadbindu Taila* was selected for its *Vata-Kapha* pacifying properties, neuro-nourishing effects, and ability to restore neural balance. Its ingredients- *Tila Taila* (sesame oil), *Eranda Moola* (castor root), *Tagara* (Valeriana wallichii), *Jatamamsi* (Nardostachys jatamansi), and *Rasna* (Pluchea lanceolata)- offer a combination of *Vatahara*, *Balya*, *Medhya*, *Nidrajanaka*, and *Vedanasthapana* actions. Initially, eight drops of *Shadbindu Taila* were instilled in each nostril daily for one month to achieve effective *Nasya*. As per Acharya Sushruta (Su. Chi. 40/21), this *Pradhana Nasya* (primary nasal therapy) was followed by a maintenance phase using *Mridu Nasya* (milder nasal therapy) to prevent overstimulation or mucosal irritation. Accordingly, the dose was reduced to four drops per nostril during the follow-up period to ensure better tolerability and sustained therapeutic effect. No adverse reactions were reported throughout the treatment and follow-up.

Udvartana (dry powder massage) using *Triphala* and *Vacha* (*Acorus calamus*) was employed to reduce *Kapha* and *Meda* (fat) through their *Ruksha* (drying) and *Tikshna* (penetrating) properties. *Triphala* provided *Lekhana* (scraping), *Shothahara* (anti-inflammatory), and *Deepana* (digestive stimulant) effects, aiding detoxification. *Vacha* acted as a *Medhya* (cognitive enhancer) and *Kapha-hara* herb, stimulating *Rasa* (plasma/lymph) and *Rakta Dhatus* (blood) [11,12].

In addition, principles from *Bhutonmada Chikitsa* (Ayurvedic management of mental disorders) may be applicable in KLS. A comprehensive approach involving *Panchakarma* (detoxification), *Daiva Vyapashraya Chikitsa* (spiritual therapy), *Sattvavajaya Chikitsa* (mind control therapy), and *Achara Rasayana* (code of conduct and rejuvenation) along with appropriate medications may offer therapeutic benefit. The hypersomnia episodes characteristic of KLS may be effectively addressed through *Ati-Nidra Chikitsa* [13].

CONCLUSION(S)

This case report shows that Kapha-Tamhara Chikitsa, Medhya Rasayanas, and Shodhana therapies markedly improved KLS. Ayurvedic interventions may effectively support or replace conventional treatments. The patient tolerated the therapies well with no reported side effects. Future studies should conduct clinical trials and long-term follow-ups, evaluating Medhya Rasayanas for their impact on sleep and cognition. Standardising Ayurvedic protocols and validating clinical scoring in larger groups would enhance evidence-based management of rare sleep disorders.

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