



NIDRANASHA (INSOMNIA) CAUSES, CONSEQUENCES & MANAGEMENT: AN AYURVEDIC APPROACH

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ABSTRACT

Ayurveda “Science of life” is an exclusive science and philosophy that balances the physical, psychological, emotional and spiritual components essential for holistic health. Ayurved is becoming more and more acceptable worldwide as it is eco-friendly, toxicity free and cost effective due to its holistic approach. Its plan is to uphold and conserve physical and mental health and cure of disease too. *Ayurveda* mentioned three main facts to keep a person in healthy condition as *Aahara*, *Nidra* & *Bramhacharya*. Out of which Sleep is a state which refills our power of activity which we drop in daily schedule. *Nidranasha* is a term of *Ayurveda* used for loss of Sleep. *Nidra* as one of the most important dimensions of health related with happiness and good health and is a result of relaxed mental state. Ayurveda recognizes the significance of sleep to health and has considered it as an upstamba of life. Insomnia is the commonest sleep problem worldwide and can lead to many psychosomatic manifestations like high blood pressure, fatigue, inability to perform mental and physical activities normally and badly hampers the class of life. In present days many people are dependent on sleeping drug and have become habitual to them. Side effects of the sleeping pills like dizziness, difficulty in keeping balance, constipation, daytime drowsiness, etc. are potentially destructive. Hence it is required to understand the concept of insomnia described in Ayurveda. *Ayurveda* prescribes several herbs in single or compound form to overcome the situation. My Article provides a short review on causes, consequences and management of insomnia with the perspective of Ayurveda.

KEYWORDS: *Ayurveda*, *Nidra*, *Aahara*, *Nidranasha*, Psychosomatic

INTRODUCTION

Insomnia is a major health issue in the United States; about 50 million Americans report a sleep disturbance within the past year and 33-40% report insomnia nearly every night.^[1, 2] Insomnia may be defined as trouble in falling asleep, difficulty maintaining sleep, early morning awakening. Humans have to experience many troubles related with health in day to day life. To prevail over these problems he has to keep his body and mind strong and fit. Ayurveda, the science of life, recommended many principles, which, one has to obey to maintain healthy life. One of the most significant principles is the three factors i.e. *Aahar*, *Nidra* and *Brahmacharya*,

are mentioned as three *Upastambha* executing an important role in maintaining the health.^[3] *Aahara* is the first which directly affects the life by causing a variety of problems with health & mind. Changes in diet habit, changes in the timing etc. may cause problems related with gastrointestinal ^[4]*Bramhachary* is a pillar which also affects on the healthy status of the body. It means controlled sex, if done at appropriate age and at proper time it preserves the body or it is harmful if done in a wrong or non-scientific way ^[5]. *Nidra* also has its important role in healthy life. By getting a good &adequate sleep one can get ready for fresh work. A sound sleep in the night regenerates the supremacy of the mind and body to accept new challenges, maintains health, and emotional well-being ^[6]. In daily routine a person can't focus on adequate and in time sleep, so he is affliction from many problems related with mind & body. Researches show that inappropriate sleep can increase risk of increasing obesity, high blood pressure, diabetes, or heart disease ^[7]. A survey conducted by WHO in India reveals that about 35 percent of respondents have reported mild to severetrouble associated with sleep ^[8]. Ayurveda has enlightened about this fact centuries ago and mentioned various causes, symptoms and remedies for *Nidranaasha*. On the other hand conservative medical science is still missing definite management for insomnia. It repeatedly prescribes sedative and hypnotic like benzodiazepines drugs as a treatment of insomnia.

Anidra (insomnia) is a common sleep disorder that affects a concerning 30% of the general population. The annoyance in *Nidra* might be related to the life style, ecological influence, psychological tension, altered food habits and day to day constant worry which ultimately disturb the psychoneuro-biological rhythm of sleep. As per Ayurvedic texts it is called as *Anidra / Nidranasha*, an inequity in *Tarpaka Kapha, Sadhaka Pitta and Prana Vayu*.

- *Tarpak Kapha* is a sub-*dosha of Kapha* that nourishes the brain cells and facilitates a high-quality sleep. Disparity of this *dosha* causes reduced nourishment of brain cells, leading to Insomnia.
- *Saadhak Pitta* is a sub*dosha of Pitta* and is positioned in the heart. It controls emotions, determination, desires and spirituality.
- *Prana Vayu* makes the nervous system susceptible, this sensitive nervous system joined with a provoked *Prana Vayu* lead to insomnia.

Ayurveda explained reasons for loss of sleep as like work, constitution, age, diseased conditions and some *Dosha* like *Vata & Pitta*. These factors directly affect on the sleep. A good night sleep is essential for performance and presentation. It also influences mood, cognition, attentiveness, fatigue, and curing. Insomnia may be related to physical and psychiatric disorders, shift work,

travel, anxiety, pain, stimulants, and other problems. Research findings demonstrate that broken sleep can increase risk of developing obesity, diabetes, hypertension or heart disease.⁹ WHO health survey reveals that about 35 percent of respondents in India have reported mild to severe trouble associated with sleeping.¹⁰ The contemporary medical science is still not having a specific management for insomnia. Use of hypnotic sedative like benzodiazepines drugs is one approach to therapy of insomnia. Use of benzodiazepines produce CNS depression consist of drowsiness, impaired motor coordination, uncertainty and memory loss, unclear vision, hallucinations and paradoxical reactions. The supreme hypnotic drug ought to allow the patient to fall asleep rapidly and should sustain sleep of sufficient quality and duration so that the patient awakes revitalized without a drug hangover. Also, this kind of drug be supposed to have very small toxicity and should not intermingle with other medication to produce dangerous effect.¹¹

Hence; it becomes very important to search out treatment which is safe and effective from natural systems like *Ayurveda* which can help patients with insomnia. *Ayurvedic* text like *Charaka samhita*, *Sushruta samhita*, *Ashtanga hridaya* and *Bhavprakash* provided the treatment for *Anidra*. Holistic treatment approach has been useful while treating *Anidra* in *Ayurvedic* classics. Authors of traditional texts have mentioned pharmacological and non-pharmacological treatments with proper nutritional recommendation

Sleeps Per Modern View:

While the definite functions of sleep are debated, it plays an important role in the health. The functions of sleep blow the brain, immunity, and nerves. Sleep progress from 4 stages of Non-Rapid Eye Movement (NREM) that steps forward to Rapid Eye Movement (REM). In stage 1 or the transitional stage, alertness moves to the early stage of sleep (e.g., peristalsis slows, core body temperature drops, physiology is altered and sensory awareness lessen) (Reinoso-Suarez, 2011). Stage 2 is the longest stage and Stages 3-4 are deep restorative sleep. During REM sleep blood pressure and respiratory rates change and respirations become shallow and dreams can be remembered. REM appears important in memory and potentially sustaining life^[12]. A sleep series lasts between 1½ to 2 hours as stage 2 and REM increase. The sleep/wake cycle is biological circadian. Aging changes the cycle as time in Stage 3 and REM diminish and stages 1 and 2 enhance. The hours of sleep necessary decrease from 7-8 hours to 6-6 ½ for older adults. Natural remedies that improve sleep include foods with tryptophan, seaweed, kiwi fruit, cherry juice, melatonin and valerian. The DSM V includes diagnoses of insomnia disorder, narcolepsy, breathing related sleep disorders (e.g., apnea and hypoventilation), circadian sleep-wake disorders, REM behavior disorder and restless legs syndrome^[13, 14].

Importance of *Nidra* ^[15]

While describing the importance of *Nidra* Ayurveda mentioned that,

- It creates pleasure in life.
- It maintains the stability of the body.
- It increases the power.
- It increases the control of brain & mind.
- Last of all it prevents the life.

Prevalence Rate:

Primary insomnia is predictable to occur in 25% of all chronic insomnia patients ^[16]. Although there is variations in the population studied to decide the estimated prevalence ^[17, 18] Hence estimates of insomnia prevalence have varied widely, from 10–40% ^[19-22].

Etiology of *Nidranasa*:

The etiological factors of insomnia provided in Ayurveda includes dietary utilization of food which is predominant in dry property ^[23]barley ^[24]excessive exercise and fasting ^[25], intercourse, hunger and uncomfortable bed ^[26], Therapeutic causes such as excessive induced *Vamana*, *Virechana*, *Nasya*, *Raktamokshana*, *Dhooma*, ^[23]*Swedana*, *Anjana*, can also cause *Nidranasha*. Psychosomatic causes- fear, anxiety, anger, ^[25] Apart from these excessive joy, sorrow, ^[24]greed, ^[27]agitation ^[28] are also responsible for insomnia.

According to *Charakacharya*, following factors are accountable for the disturbance in the sleep. ^[29]

A.) *Karya*

Work done at nighttime or the work which is heavy in nature, can cause instability in the sleep. The peoples who work in night turn out to be more prone to the symptoms of insomnia. That's why Ayurveda prescribes not to work in the night and not to sleep in the daytime.

B.) *Kaal*

The second issue *Kaal* is also important for the disturbance in the sleep. It is connected with our life and affects directly on our sleep. In the infantile period, child sleeps most of the time of the day and in night, but as age increases the actual period of sleep decreases. It happens because of influence of *Kapha* Dosha, which produce more sleep in the children. In middle age the duration of sleep remains usual ranging from 6 to 8 hours. Where as in old age, because of dominance of *Vata Dosa* and diminished *Kapha*, the duration of sleep further decreases.

C.) *Vikara*

Some diseases may cause the disorder in the sleep. According to Ayurveda mainly the diseases of *Vataja* basis can cause insomnia. Increased *Vata Dosa* is ultimately responsible for diminish in *Kapha*, resultating loss of sleep.

D.) *Prakruti*

In Ayurvedic texts there are three basic fundamentals, which build up the life of living being. These three factors choose the structure of the man while birth. These elements form 7 types of constitution. Out of these, the person having only *Vataja Prakruti* shows shorter period of sleep than persons with other constitution. *Acharya Susruta* mentioned reasons for loss of sleep as follows ^[30]

- Due to increased state of *Vayu*
- Due to increased state of *Pitta*
- Due to the mental annoyance or increased stage of mind
- Due the weakness
- Due to accidents, harm or any grievance

Mind also plays a main role in the loss of sleep. *Tamo Guna* of mind helps in creating sleep. It is linked with *Kapha Dosha* and helps in making of sleep. When our mind gets troubled due to any thought, it increases *Rajo Guna* which strongly resembles with the *Vata Dosha*. Hence increase in *Rajo Guna* ultimately increases *Vata Dosha* & diminishes the effect of *Tamo Guna* ultimately landing the person in insomnia. According to Ayurveda weakness usually occurs due to the dominated *Vata Dosha*. Apart from this *Ruksha Guna* of *Vata Dosha* causes weakness in the body. Traumatic injury can cause pain in the body and this discomfort causes disturbance in the sleep. Pain is termed, as *Shula* in Ayurveda and it is a main symptom of the *Vata Dosha*. Hence increase in *Shula* eventually causes raise in *Vata Dosha*, which openly affects sleep. *Acharya Vagbhata (Bruhad & Laghu)* mentioned these five factors for trouble in sleep or causing loss of sleep ^[31] *Acharya Indu* also commented on these causes on *Anidra* ^[32].

Signs and Symptoms:

Ayurveda describes *insomnia* as a symptom, as a disorder and even sometimes as a complication of certain kind of diseases. Unusual symptoms arise during *Nidranasha* are yawning, head-ache, body ache, lethargy, giddiness in the head and eyes, fatigue, indigestion, apathy, and diseases created by *Vata Dosha* ^[33] Troubled sleep can lead to unpleasantness, emaciation, weakness, unpleasantness, emaciation, impotency, terminating in death ^[34].

Nonpharmacological Treatment of Insomnia:

Instruct the patient about healthy sleep habits, regular exercise, and elimination of alcohol, caffeine and smoking before bedtime. Stress management or relaxation therapy is useful for reducing anxiety⁽³⁸⁾. Hypnosis tapes can improve sleep. Some people find herbal remedies (e.g., chamomile tea, valerian root, and melatonin) and essential oils (lavender) helpful. Others like warm milk and foods containing tryptophan such as peanuts that help them fall asleep.

➤ **Progressive relaxation:**

About 23% of adults with insomnia use relaxation and breathing techniques (Bertisch, 2012). When anxiety or worry interferes with sleep, the patient can learn to make use of progressive relaxation – to tense and relax muscle groups to gradually relax. Often one starts at the crown of the head and thoroughly focuses on that body part and briefly tenses and relaxes it. When this practice is used properly, it reduces tension and relaxes the patient and improves sleep. Research shows that relaxation improves falling asleep, the quality of sleep and restful sleep [35]. Researchers reported that use of progressive relaxation has led to an 80% decrease of sleep medications.

➤ **Mindfulness:**

Mindfulness is a state of awareness that is increasing in popularity as a process of reducing stress, insomnia and other conditions [36, 37]. It focuses awareness in the present moment and focuses one's entire attention.

➤ **Hypnosis:**

Hypnosis is focused attention that creates an inner calm, relaxation, and trance that can alleviate symptoms (e.g. anxiety, fear insomnia, and distress). A dream state naturally occurs when one becomes completely immersed in a film or game and ignores time and the environment. During a hypnotic trance, suggestions can encourage relaxing and restful sleep and the ability to sleep soundly and ignore distractions. While its medical uses are not completely known, hypnosis offers benefits in insomnia, fatigue, pain relief, anesthesia, and anxiety [38].

➤ **Acupressure**

Acupressure is an alternative method where a finger or body pressure is applied to pressure points, meridians, or energy channels in the body to realign the chakras. Evidence supports the management of chronic insomnia with acupressure [39].

➤ **Cognitive behavioral therapy (CBT)**

CBT helps improve sleep by changing illogical thoughts, assumptions, and negative beliefs about sleep and negative thinking patterns [37, 40]. CBT challenges negative

beliefs and assumptions about sleep that generate anxiety, fear, and worry that interrupt sleep.

The line of treatment which is described for *Anidra* in different *Samhitas* is same. It indicates the psychological relaxation is prime need along with *Vatahara* treatment for managing insomnia. Whole treatment has been described in outline of specific procedures, psychiatric treatment, drugs and Diet as follows:

1) Specific Procedures:^{41,42,43,44}

Abhyanga, Utsadana, Chakshu-tarpana, Shirobasti, Shirodhara, Shiro-lepa, Mukhalepa, Karnapurana, Snana, Samvahana Padabhyanga,

2) Manasika Upachara:^{41,42,43,44}

Pleasant smell, sound, touch, Psychic pleasure, Sense of satisfaction, Thinking of things pleasurable to mind and completion of desire, pursue the *Brahmacharya*, to embrace with beautiful lady, Comfortable bed and home and proper time

3) Treatment with Herbs/Drugs:

- Decoction of *Jivaneeya* group of drugs with ghee and milk⁴³
- Powder of *Bijapoora* leaves with honey⁴⁵
- *Pippali* root powder with Jaggery⁴⁶
- Paste of *Bhanga* powder with milk of goat, apply on sole⁴⁶
- *Apamarga, Kokilaksha, Kakajangha, Shooraparnika*- all in equal quantity, decoction is to be prepared or its roots tied with *Shikha* (plait)⁴⁷
- *Vasa, Kakamachi, Punarnava, Kantakaridwaya, Vartakimoola*- all in equal quantity, decoction is to be prepared⁴⁷
- *Ashwagandha* powder with sugar and Ghee⁴⁸
- *Lokanatha Rasa* with *Bhanga* powder and honey at night⁴⁹
- *Anjana* of triturated *Maricha* in saliva of horse⁴⁸
- Rubbing of sole with *mastu*⁴⁷

4) Ahara (Dietary Advice)^{41,42,43,44}

Gramya-anupa-udaka-mansarasa; Shali rice with curd, milk, unctuous substance, alcohol; *Mahisha ksheera; Peeyush, Morata, Kilata* and *Koorchika; Matsya; Dadhi; Masha; Sita; Godhuma; Pishtanna, Ikshu, Draksha, Varahamansa; Guda; Yusha; Sneha; Madhya;* are appropriate dietary substances for patients of insomnia. Alcoholic preparation induces sedation and leads to sleep; whereas other dietary products will manage the causative factor i.e. aggravated *Vata*. If *Vata* is controlled, patient gets the sleep. Currently, Milk product like *peeyusha, Morata,*

Kilata, *Kurchika* are not found to be used in practice. After reviewing traditional data, it has been observed that *Acharyas* did not give emphasis to only on herbal formulation but also on definite procedure like *Abhyanga*, *Utsadana*, *shirobasti*, *Shirodhara* etc., and food habits while treating a psychosomatic disease i.e. insomnia. Holistic advance to manage insomnia with *Ayurveda* can be divided in 3 types i.e., *Nidana parivarjana*, *Dosha pratyanyachikitsa* and *Vyadhi pratyanyachikitsa*

Table: Reported Classical Herbs Having Sedative Activity:

Sl. No.	Herbs with Sanskrit & Latin name	Part used or chemical composition	Used Experimental models/ mode of action
1	<i>Vacha</i> <i>Acorus calamus</i> Linn. ^{50,51}	Steam volatile fractions of the root and rhizome (petroleum ether extract)	Prolonged the sleeping time with pentobarbital, hexobarbital and ethanol.
		Acorus oil	Barbiturate-induced hypnosis
		Asarone and -asarone (active principle of rhizome)	Enhanced the anesthetic activity of pentobarbitone, hexobarbitone and ethanol in mice
2	<i>Priyangu</i> <i>Aglaia diepenhorstii</i> Miq. ⁵¹	Essential oil from the root bark	Pentobarbitone-induced hypnosis, motor coordination and spontaneous activity in mice
3	<i>Saptaparna</i> <i>Alstonia scholaris</i> Linn. R.Br. ⁵²	Pricrinine, the major alkaloid of the flowers	Hexobarbitone narcosis, morphine analgesia and anticonvulsant action of diphenylhydantoin in albino rats.
4	<i>Kajutaka</i> <i>Anacardium occidentale</i> Linn. ⁵²	Essential oil of the plant at a dose of 150 and 300 mg/kg	Behavior, sodium pentobarbitone-induced hypnosis, rotarod performance, conditioned avoidance response and pain threshold of albino rats

5	<i>Puga</i> <i>Areca catechu</i> Linn. ^{53,54}	Arecoline in a dose of 1 mg/kg	Maze learning technique and rota-rod test
6	<i>Nimba</i> <i>Azadirachta indica</i> A. Juss ^{50,54}	Dried material and filter paper material	Locomotor activity and pentobarbitone-induced hypnosis, oral administration in mice
7	<i>Brahmi</i> <i>Bacopa monnieri</i> Linn ⁵⁵	Alcoholic extract in a dose of 25 mg/kg	Thiopental sleeping time in mice
		Plant extract in a dose of 100 mg/100g bw	Barbiturate hypnosis potentiation effect in albino rats
8	<i>Sallaki</i> <i>Boswellia serrata</i> Roxb ^{50,55}	Non phenolic fraction of gum resin	Active principle in the fraction has morphine-like chemical structure
9	<i>Punnaga</i> <i>Calophyllum inophyllum</i> Linn. ⁵⁶	Xanthenes	Decreased spontaneous motor activity, loss of muscle tone, pentobarbitone sleeping time and ether anesthesia in mice and rates
10	<i>Aragwadha</i> <i>Cassia fistula</i> Linn. ⁵⁶	Methanol extract of the seeds	Potentiated the sedative actions of sodium pentobarbitone, diazepam, meprobamate and chlorpromazine
11	<i>Devadaru</i> <i>Cedrus deodara</i> (Roxb.) ⁵⁶	Wood essential oil	Motor incoordinating activities in mice, pentobarbitone-induced hypnosis
12	<i>Jyotismati</i> <i>Celastrus paniculatus</i> Willd ^{57,56}	Crude seed oil in a dose of 1 g	Tranquilizing effect on adrenaline and amphetamine-induced excitement in mice
		Glycosides (brahmoside and	Decrease in motor activity, increase

		brahminoside)	in hexobarbitone sleeping time
		Alcoholic extract of the plant in a dose of 100 mg/kg body weight	Potentiating of barbiturate sleeping time, decrease in brain acetylcholine and increase in brain catecholamines in rats
13	<i>Tarkari</i> <i>Clerodendrum phlomidis</i> Linn ⁵⁸	Methanolic extract of leaves	Potential of phenobarbitone-induced sleeping time in mice at 400 and 600 mg/kg, decrease in general behavioural profiles in mice (at 200, 400 and 600 mg/kg)
14	<i>Shankpushpi</i> <i>Convolvulus prostratus</i> Forssk ^{59,58}	Alcoholic extracts of the whole plant	Potential of pentobarbitone hypnosis in rats. Plant shows maximum barbiturate hypnosis potentiating activity during spring season
15	<i>Aparajita</i> <i>Clitoria ternatea</i> Linn. ⁵⁸	Alcoholic extract of the stem, flowers, leaves and fruits	Diminution of spontaneous motor activity; and increase in sedation in mice, potentiation of barbiturate hypnosis in rats.
16	<i>Bhustrina</i> <i>Cymbopogon citratus</i> stapf ⁶⁰	Essential oil from the leaves	Potentiated the pentobarbitone induced hypnosis in mice
17	<i>Musta</i> <i>Cyperus rotundus</i> Linn ^{61,60}	Alcoholic extract of tubers	Tranquillizing activity in rats
18	<i>Karanja</i> <i>Derris indica</i> (Lamk.) ⁶²	Pongamol	Gross behavioural effects and electroencephalography
19	<i>Nirvisha</i> <i>Delphinium denudatum</i> Wall ⁶² .	aqueous extract of root	pentobarbitone induced hypnosis
20	<i>Paribhadra</i> <i>Erithrina indica</i> Lam ⁶¹	Methanolic extract of the leaves	Pentobarbital sodium injected in rat
	<i>Jatamansi</i>	Jatamansone (isolated	Prolongation of barbiturate

21	<i>Nardostachys jatamansi</i> DC. ^{59,64,72}	from air-dried rhizomes), sesquiterpene valeranone	hypno- sis, the impairment of rotarod per- formance
22	<i>Kamala</i> <i>Nelumbo nucifera</i> Gaertn. ⁶⁴	Methanolic extract of rhizomes	Examined for psychopharmaco- logical effects in different experi- mental animal (rats, mice) models
23	<i>Tagara</i> <i>Valeriana Jatamansi</i> Jones ^{64,73}	Flavonoids (linarin, 6- methyla- pigenin, and (-)-hesperidin)	sodium thiopental-induced sleep test, hole board test
24	<i>Aswagandha Withania</i> <i>somni- fera</i> (Linn.) Dunal ^{61,64}	Ethanolic (70%) extract of roots	Produced sedation in mice, dogs, monkeys, rabbits and rats
25	<i>Ahiphena</i> <i>Papaver somniferum</i> Linn. ^{74,75}	Morphine	suppression of locomotor activity
26	<i>Maricha</i> <i>Piper nigrum</i> Linn ^{66,67}	Ethanolic extract	Midazolam induces hypnosis in male wistar albino rats
27	<i>Jatiphala</i> <i>Myristica fragrans</i> Houtt ^{53,68}	Acetone soluble part of n- hex- ane extract	Pentobarbitone-induced sleep and haloperidol-induced catalepsy
28	<i>Parijata</i> <i>Nyctanthes arbor-tristis</i> Linn ^{53,69}	Hot flower infusion	Using hole board technique in rats
29	<i>Bhanga</i> <i>Cannabis sativa</i> Linn. ⁷⁰	Crude ethanolic and petroleum- Ether fractions	Spontaneous motor activity in mice
30	<i>Mandookaparni</i> <i>Centella asiatica</i> Linn ⁷¹	Alcoholic extract	It has been reported to be tranquil- lizing in rats, an activity that has been attributed to a triterpene, Brahmoside

CONCLUSION:

Insomnia has been considered as a psychosomatic illness by ancient *Acharyas* in which mind is vitiated by provoked *Vata-dosha*. Hence, *Acharya Charaka* stressed out *Vatahara* management in *Anidra*. Avoidance of contributory factors, relaxation techniques along with other therapies is the basis of treatment for insomnia. In view of this, *Manaha-sukham*, *Manonukula-vishaya* etc., are mentioned in treatment of insomnia, which are indicative of psychic management. Many drugs which are used classically for *Anidra* like *Kantakari Bijapoor*, *Apamarga*, *Kokilaksha*, etc., are not evaluated experimentally as well as clinically. Moreover, *Sarpagandha*, *Aswagandha*, *Jatamansi*, *Tagara*, *Pippalimoola* etc., drugs are scientifically evaluated for their sedative action, but very limited clinical data is available on them. So, more experimental and clinical studies on these traditional as well as scientifically reported drugs should be conducted base on *Ayurvedic* theory of management for evaluated safe, valuable treatment for psychosomatic disorder insomnia.

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