IAMJ

INTERNATIONAL AYURVEDIC MEDICAL JOURNAL

Review Article ISSN: 2320-5091 Impact Factor: 6.719

A CRITICAL REVIEW OF ANIDRA AS A NIDANA OF ANNAVAHA SROTOROGA

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https://doi.org/10.46607/iamj3410062022

(Published Online: June 2022)

Article Received: 31/05//2022 - **Peer Reviewed:** 13/06/2022 - **Accepted for Publication:** 17/06/2022

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ABSTRACT

Definition of health isn't simply just confined to physical health rather psychological state ought to be given lots of importance. It's vital that for a decent quality of life each the physical and psychological state of someone is in good shape. Both the mental and physical health of a person complements each other by affecting one another. *Ayurveda* explains the 3 pillars of healthy and long life are proper *Aahar, Nidra, Bhrahmcharya*. Disruption of circadian physiology, due to sleep disturbance may result in various gastrointestinal diseases, such as irritable bowel syndrome (IBS), gastro-esophageal reflux disease (GERD), or peptic ulcer disease. Studies suggest that the regulatory effect of melatonin on colonic motility counterbalances that of its precursor, 5-HT. It is also possible that melatonin exerts its effects through the central sympathetic and parasympathetic nervous systems. However, these effects area unit temporarily and prolonged use of these drugs might cause different effects on the body. *Ayurveda* recognizes that sleep disorder isn't simply a health problem rather it's a bunch of symptoms associated with underlying imbalances of doshas within the body. So, employing a similar approach we tend to try to spot and target the reason behind gastrointestinal disorders i.e, *Anidra* through *Ayurveda*.

Keywords - sleep deprivation, *Anidra, annavahasrotas*, gastrointestinal disease, *Ayurveda*, IBS

INTRODUCTION

Ayurveda is the science of life it's mentioned that the three pillars of healthy and long life is proper *Aahar*, *Nidra*, and Bhrahmcharya. Diet is a vital factor in the formation of the body. The imbalance of these pillars leads to various health hazards. Sleep is also mentioned as a natural urge in *Ayurveda* texts which is unsustainable (*Adharniya Vega*).[1] Sleep deprivation is usually experienced among town dwellers, labour employees, medical professionals, surgical patients, and subjects with sleep disorders promoting many health hazards. Circadian and seasonal rhythms are an elementary feature of all living organisms. Biological clocks are accountable for daily food intake, and sleep patterns, and therefore the amount of hunger and repletion is controlled by the central pacemaker, which resides within the supra-chiasmatic nucleus (SCN) of the neural structure and communicates with tissues via bidirectional neuronic and body substance (humoral) pathways.

Disruption of circadian physiology, because of sleep disturbance or shift work, might lead to numerous gastrointestinal diseases, like irritable bowel syndrome (IBS), gastro-oesophageal reflux disease (GERD), or peptic ulceration disease. Additionally, circadian disruption accelerates aging and promotes neoplasm genesis within the liver and GIT. Clinical studies have shown evidence that the administration of melatonin hormone improves symptoms in patients with IBS and GERD. Moreover, studies indicate that melatonin considerably protects gastrointestinal mucous membrane, and has sturdy protecting effects on the liver in patients with non-alcoholic steatohepatitis (NASH)[2]

Identification of the role of Nidra within the regulation of gut biological time permits researchers and clinicians to approach gastrointestinal diseases from a definite perspective.

Materials and Methods

Different *Ayurveda* and modern literature, research articles, and journals were referred to.

Aims and Objectives

1. To establish the relation of *Anidra* as a *Nidan* of *Annavaha srotoroga*.
2. To learn detailed pathophysiology and management of *Anidra.*

Anidra Nidan

The etiological factors of *Anidra* (insomnia) mentioned in classical texts of *Ayurveda* include: -

1. **Dietary causes**- Consumption of food which is predominant in dry property

- Barley
- Paddy
- *Trivruth*
- *Vamsha*
- Fasting

2. ***Vihara***

- Uncomfortable Bedding
- *Atichankraman*
- Excessive Exercise
- Intercourse

3. **Therapeutic causes**

- Excessively induced *Vamana* (emesis)
- *Virechana* (purgation)
- *Nasya* (nasal medications)
- *Raktamokshana* (bloodletting)
- *Dhooma* (medicated smoke)
- *Swedana* (sudation)
- *Anjana* (collyrium)

4. **Psychological causes**

- Fear
- Anxiety
- Anger
- Sorrow
- Greed
- Agitation

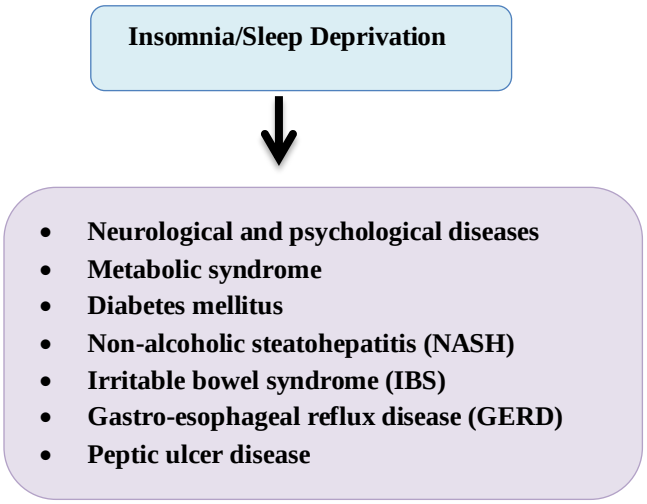


Diagram 1:

Pathophysiology Of GIT Disorders with Respect to *Anidra*

Anidra or Nidranasha is enumerated together with the *Nanatmaja Vikara of Vata Dosha*. It's conjointly included mutually of the symptoms in *Vata & Pitta Dosha Vriddhi Lakshanas* and several associated diseases. *Kaphadosha, Tamas, Hridaya, and Samjnavaha Srotas* are held accountable for the induction of sleep in *Ayurveda* classisc.

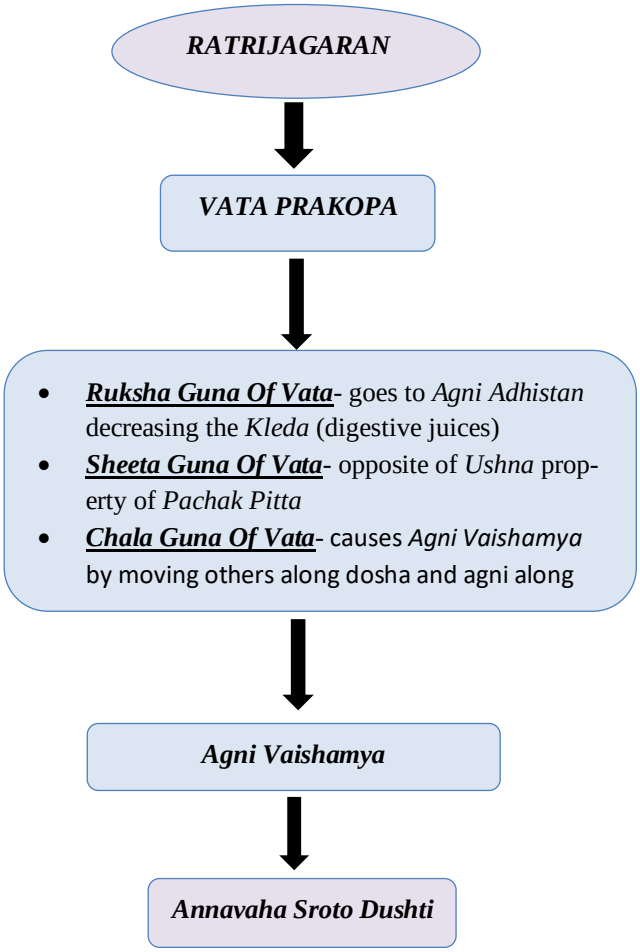
Ayurveda also describes *Anidra* as one of the *Nidan of Annavaha srotas roga (*GIT disorders) very briefly. In *Yogaratnakar*, indigestion is described as one of the complications of *Anidra* (insomnia).[3]

Ratrijagarana is *Rooksha* that causes override of *Vata* and *Divaswapna* causes *Snigdhata* i.e., will increase *Kapha* in our body. Hence each Ratrijagarana (night awakening) and Divaswapna (day sleep) is contraindicated. Night sleep is the one all are supposed to follow as it is the night is the best time for sleep. *Ratrijagarana* is additionally one of the *Vata Prakopaka* causes. People who are indulged in *Ratrijagarana* are often affected with *Vata* and *Pitta* disorders. Thus, we can say that digestion is greatly affected by sleep deprivation by affecting the endocrine and exocrine systems of the body, resulting in metabolic disorders like diabetes, obesity getting a pace in the world. An irregular pattern of sleep can induce variation in the ghrelin-leptin ratio. It can cause an upsurge in the level of ghrelin and a decline in leptin level which leads to increased appetite and craving for carbohydrate-rich foodstuffs, which further disturbs the metabolic activity leading to indigestion, constipation, and malabsorption of nutrients.

In a study conducted by M.K.Vijayalaxmi et.al on General Health Pattern among Night Shift Work Employees in a Tertiary Care Hospital data was obtained as the common health problems experienced by shift employees included indigestion (70%), diarrhoea (58%) and loss of appetite (56%).[4]

Ratrijagarana is said to be *Rooksha* and aggravates *Vata Dosha*. When *Vata* becomes dominant in the *Agni Adhistana*, the strength of *Agni* will be unsteady or *Vishama*. So, among the types of *Agni Vaishamyas, Vishamavastha* is more seen. As nature, *Vishamavastha* is unpredictable. The *Agni* may be sometimes *Manda* and sometimes *Teekshna*. *Gunas* of *Vata* like *Rooksha*, *Sheeta*, *Chala* might affect the *Agni*.

Diagram 2: Probable *Samprapti*



Sleep is crucial for all living beings and sustained sleep loss in humans and animals may end up in death.[5] It had been found that the gastric acidity in Partial sleep deprivation (PSD) subjects on days 7 and 14 was more than in the subjects in which the sleep was undisturbed. This was in line with the changes in plasma levels of gastrin and histamine in Partial sleep deprivation subjects. Partial sleep deprivation resulted in a decrease in gastric mucosal blood flow on both days 7 and 14 of PSD. It was additionally found that plasma noradrenaline level was considerably raised in PSD subjects. This could be due to the stress response that was exposed to PSD. It has been identified that the sympathetic nervous system is activated in response to stress and therefore the activation might act on the adrenal medulla (endocrine gland) and stimulates the secretion of catecholamine. Endogenous circulating catecholamine might contribute to the management of gastrin and acid secretion.[6] Partial sleep deprivation compromised gastric mucosal integrity by modulating plasma levels of norepinephrine and gut hormones, increasing gastric acidity, and reducing gastric mucosal blood flow. These results offer experimental proof to support the thought that PSD could also precipitate a risk of gastric mucosal damage in modern-day society.[7]

Pietroiusti et al. postulated a potential association between shift work and the development of duodenal ulcers. The authors described that shift staff, compared to day-time staff, more often develop duodenal ulcers.[8] One of the causative factors accountable for this development can be a decrease in circulating melatonin, because of the shift work the night. Previous studies revealed that melatonin plays a central role in gastric protection (via effects on angiogenesis, NOS system, COX-2, and gastric mucosal blood flow), and that melatonin deficiency might be a very important promoting factor in the event of peptic ulcer.[9]

Additionally, circadian rhythms have an effect on secretory changes within the GIT, particularly changes in gastric acid secretion. One of the foremost common disorders related to gastric hyper secretion is gastro-esophageal reflux disease (GERD)[10]

Management

Ayurveda acknowledges that insomnia isn't simply an illness instead it is a set of symptoms associated with underlying imbalances of doshas within the body. It also appeared to be a sign of persistent physical, behavioural, cognitive, and intellectual problems which can appear in the future if not treated properly.

In *Ayurvedic* medicine, certain herbs are recognized to provide calming and relaxing impact on the mind thereby inducing sound sleep. These drugs may be utilized in finding treatment for issues like *Nidranasha/Kshaya*.

Previous studies have suggested that the regulatory effect of melatonin on colonic motility counterbalances that of its precursor, 5-HT. It is also possible that melatonin exerts its effects through the central sympathetic and parasympathetic nervous systems. In alternative words, melatonin, as a regulator of the sleep-wake cycle, might be a promising therapeutic agent for the treatment of IBS in the future.

In *Shirodhara*, Sneha is taken according to the condition of *Dosha* such as

- ***Vata Dosha****-Tila Taila*
- ***Pitta Dosha****- Ghrita*
- ***Kapha Dosha****-Tila Taila*
- ***Rakta Dosha****- Ghrita*
- ***Vata+Pitta+Rakta****- Ghrita + Taila in equal portion*
- ***Vata+Kapha+Rakta****- 1/2-part Ghrita+1-part Tila Taila*

Some Drugs That Act on Sleep as Well As GIT Disorders

1. ***Brahmi*** *(Bacopa monnieri Linn)*
   Purgative, irritability, insomnia[11], Anti-ulcerogenic activity[12]
2. ***Shankhpushpi*** *(Convolvulus prostratus Forssk)*
   Irritable Bowel Syndrome, Anti-depressant and anti-stress activity[13]
3. ***Vacha*** *(Acorus calamus Linn)*
   Anti-obesity, mitigate oxidative stress, gastrointestinal health disorders, inhibition of the pancreatic lipase percentage[14]
4. ***Ashwagandha*** *(Withania somnifera Linn.)*

liver-tonic, improves lipid profile, gut microbiota, and intestinal morphometry[15]

5. ***Shallaki*** *(Boswellia serrata Roxb)*
   Collagenous colitis[16] Boswellia has been reported to be useful as a replacement for mesalamine and sulfasalazine in GI diseases[17]
6. ***Aparajita*** *(Clitoria ternatea Linn)*
   It is used in emesis, dyspepsia, constipation, jaundice, and piles. It is used in healing ulcers of the pylorus duodenum.[18]
7. ***Bhanga*** (*Cannabis sativa Linn*)
   Protects against colonic inflammation and plays a therapeutic role in IBD.[19]
8. ***Jatamansi*** *(Nardostachys jatamansi)*
   Jatamansi attenuates the severity of AP and pancreatitis-associated lung injury.[20]

CONCLUSION

Agni has referred to the digestive and metabolic fire of the body. *Ayurveda* highlights that all diseases are the consequences of the weak state of *Agni*. Improper functioning of *Agni* leads to various disorders of the gastrointestinal tract as well as various metabolic disturbances.

Therefore, *Ayurveda* concentrates on correcting *Agni* and re-establish its normal functions for restoring the health of a person. The status of *Agni* is not constant throughout a person. It is influenced by several factors like *Prakruti, Kala, Desha*, etc. *Nidra* is also a reason that can be included among these factors as we discussed in this article. When we try to stay awake against the schedule set by our circadian clock, our mental and physical performance is greatly diminished.

So, it is important for the new age *Vaidyas* to look at this interrelationship of *Nidra* and *Annavaha Srotas* and we can approach a different line of treatment directly targeting the root cause. As *Ayurveda* explains *Nidra Parivarjan* is the first line of treatment for any disorder.

DISCUSSION

In Ayurvedic classics, all Acharya has explained Ratrijagarana (Anidra) as a cause of vata prakopa, due to *Vata* vitiation *Jatharagni* leading to indigestion of *Rasa Dhatu* and thus effecting subsequent *Dhatus*. *Acharya Bhavapraksh* in poorvakandh explains that proper sleep at night provides the balance of the bodily constituents (*Dhatu Samyata*) and provides alertness, good vision, better complexion, more strength also good digestive power.

This pathogenesis gives rise to various *Vikara* in *Annavaha Srotas* i.e, IBS, NASH, GERD, and various metabolic syndromes like diabetes mellitus.

This article focuses on proving *Anidra* (insomnia/sleep disturbance) as a causative factor in gastrointestinal disorders and thus providing the solution to gastrointestinal disorders through *Nidan Parivarjan*, which breaks the pathogenesis. This article provides a new outlook on the commonest of disorders in today's era.

In an age where stress, anxiety, and mental blockage are an everyday experience, but drugs like *Brahmi, Shankhapushpi, Vacha, Aswagandha, Aparajita, Shallaki, Bhanga, and Jatamansi* offer a light at the end of a dark tunnel. It helps us to build *Ojas*, give up bad habits and addictions, remove accumulated toxins, calms the mind, improve sleep quality, and their therapeutic application as a purgative, anti-ulcerogenic, liver tonic, action on dyslipidemia, improving gut microbiota, jaundice, dyspepsia constipation and therapeutic effect in diseases like IBD and pancreatittis provides a good alternative to target two problems at once in cases where *Anidra* is a factor for *Annavaha Sroto Dushti*.

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Source of Support: Nil
Conflict of Interest: None Declared

How to cite this URL: Tarun Arya & Manu Bhai Gaur: A Critical Review of Anidra As A Nidana Of Annavaha Srotoroga International Ayurvedic Medical Journal {online} 2022 {cited June 2022} Available from: http://www.iamj.in/posts/images/upload/1586_1591.pdf