

## Sleep (NIDRA) Modification - A Need in PCOS

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### ABSTRACT

Polycystic ovarian syndrome (PCOS) is known as multifactorial, endocrinal metabolic and lifestyle disorder in women at reproductive age. Disturbed sleep and sleep disorders are commonly found in PCOS patients still sleep was not considered in the modern treatment plan. According to the Indian traditional medicine, sound sleep is an important factor in the lifestyle modification of all diseases along with diet and exercise. The aim of this study is to determine the significance of sleep management in PCOS from the view of Ayurveda. Ayurveda as an old traditional Indian medicine focused on lifestyle modification under the title of "tray upastambh" the three pillars i.e. Ahar, Nidra (sleep), Brahmcharya for the healthy body. Management of sleep is one of the three pillars. There are modification rules about sleep in both ayurveda and modern medicine. Hence lifestyle modification in the form of sleep management should be considered for PCOS treatment.

**Keywords:** Indian traditional medicine, nidra, polycystic ovarian syndrome, sleep

Polycystic ovarian syndrome (PCOS) is the highly prevalent disorder representing the most endocrine metabolic disorder among women [1] affecting 5%–10% of women in their reproductive age, both diagnosis and treatment has controversies. PCOS is defined by the Rotterdam criteria, as the existence of any two of the following three: (1) Oligoovulation and/or anovulation; (2) Biochemical or clinical hyperandrogenism; and (3) Polycystic ovaries in USG [2]. Responsible factors for PCOS are insulin resistance, heredity and genetics factors, hormonal imbalance and ovarian factors [3] sedentary lifestyle is the main. [4] PCOS has medical and surgical treatment with lifestyle modification that includes diet and exercise. Hence the lifestyle modification needs to be considered first. Ayurveda has advised the complete knowledge about diagnosis, prevention, and treatment of diseases in brahmatrayis. In Charak Samhita three pillars of life,

known as "tray upastambhas" for healthy long life is advised which must consider to change the lifestyle of PCOS patients. These include ahar (food habits), nidra (sleep) & brahmcharya (control on all indriyas). Imbalances in any of these essential factors will affect human health and cause various diseases. Proper Sleep at night provides immunity and physical mental health [5]. Disturbance in quality quantity or timing of the sleep directly affect regular metabolism and hormonal balance. Recurrent nights of insufficient sleep can cause insulin resistance in healthy adults. Insulin resistance is one of the prime cause for PCOS. Sleep disturbances with negative effects on quality of life is main concern in these patients. Sleep disorders like daytime sleepiness, difficulty falling asleep, sleep apnea [6] are common in PCOS patients affecting their sleep quality. [7] Still sleep management in PCOS patients has not advised in modern treatment. Sleep modification has scope in PCOS. The aim of this study was to understand the significance of sleep modification as a lifestyle management in the treatment of PCOS from the view of Ayurveda.

### I. METHODS

In this search medical databases as well as classical texts brahmatrayis and laghutrayis were studied and reviewed for the sleep (nidra) modified, analysed & discussed. Aim and objective of this study was to understand the significance of Sleep modification as a lifestyle management for improving the quality of life in PCOS patients through Ayurveda.

### II. DISCUSSION

#### SLEEP

Sleep is a physiology of the body which follows a periodic circadian pattern. During these sequence of night, an individual's sleep is divided into non-rapid eye movement (NREM) i.e. orthodox sleep and rapid eye movement (REM) dreaming sleep. Excessive

daytime sleepiness, fatigue, anxiety, depression, insulin resistance, low immune function, memory loss, inflammation, atherosclerosis, and cardiovascular events happened because of poor sleep quality [8]. Insomnia, hypersomnia, obstructive sleep apnea, parasomnia, circadian rhythm sleep disorders, sleep-related movement disorders are common disorders of sleep. [9] According to Ayurveda, one of the *trayupastambhas* sleep is an important one. *Prakritnidra* (sleep) is a combination of *TamoGuna* and *KaphaDosha*, in the night hours when *Mana* (mind) get tired from sensory and motor organs, *Nidra* occurs. *Kapha* and *Tamoguna* causes the blockage of perception centres and physiological sleep occurs which is *SwabhavikaNidra* or *RatriSwabhavaPrabhava*. Physiological sleep balances *tridoshas*, *saptadhatu* and healthy status of individual. Excess or less sleep or other than night hours sleep leads to imbalance of *Doshas* causing diseases for example day time sleep (*Divaswap*) aggravates the *Kapha Dosha*, and leads to obesity like *kaphajavikara*. [10].

## PCOS

PCOS polycystic ovary syndrome (PCOS) is a prevalent reproductive and metabolic disorder with an underlying pathophysiology that is still not completely understood. Women with enlarged ovaries associated with oligomenorrhea or amenorrhea, hyperandrogenism has insulin resistance. Insulin contributes to the biochemical and clinical hyperandrogenism by directly enhancing theca cell ovarian androgen production in concert with LH and indirectly by lowering sex hormone-binding globulin, the carrier protein responsible for reducing circulating free testosterone levels leading to various consequences of PCOS like hirsutism, skin problems etc. [11] In Ayurvedic texts nowhere has mentioned the entity PCOS but PCOS can be considered as imbalance state of *Tridoshas* causing *aartavdushti* & *Vandhyatva*. *Tridoshas* in their normal mode leads to regular reproductive function. *VikritVata* is responsible for anovulatory cycles, *vikrit Pitta* is responsible for disturbed metabolism and hormonal imbalance, *vikritKapha* is responsible for obstructive pathology in PCOS. PCOS is *doshaaavrana*. PCOS is due to *Kapha* blocking *Vata* and *Pitta*, hence *vahankarm* {movement} and transformation process are suppressed. *Kapha* causes *agnimandyatva* and *ama* production. In PCOS, aggravated *Kapha* mixed with *Aam* causes *Srotosanga*, *Vata* hampers

ovulation and menstruation consequently *pitta* hampers regular metabolism, hormonal balance, fertility and so on pathological condition of PCOS worsens.

## PCOS AND SLEEP

PCOS patient suffers from sleeping disorders such as insomnia, OSA that leads to lethargy, daytime sleep and metabolic dysfunction. Poor quality sleep in PCOS patients is associated with depression, infertility, increased insulin resistance, obesity, cardiovascular diseases. [8] As being high prevalence of sleep disorders in PCOS, sleep management should be given as first preference in lifestyle modification for good quality of life for PCOS patients. Neurohormones like stress hormones and melatonin are involved in circadian pattern. [12] Melatonin, is important role in the regulation of sleep-wake cycle, in reproductive ovarian function. [13] Disturbed levels may affect ovarian function, hormonal balance, follicular growth, oocyte maturation, ovulation, and oocyte quality. [13,14] PCOS women with poor sleep quality has an increased melatonin levels and increased oxidative stress if untreated. Hence for regulation of HPO&HPA axis sleep modification could be used as a first line of treatment.

## Sleep modification as per modern ayurvedic view

### Sleep hygiene in modern medicine-

Recommending sleep hygiene briefs sleep education advices that are planned for healthy sleep habits and to avoid sleep disorders. Avoid caffeine, alcohol consumption, smoking, noise, daytime sleep, gadgets use at night and, exercise regularly, plan the regular sleep times- early to bed and early rise.

### Sleep hygiene in Ayurveda

In *Charaksamhita*, *sutrasthana* "sleep and its benefits, types, timings and good quality sleep" all the principles of sleep hygiene is advised in expanded form. [5] In view of *acharya*, normal sleep has benefits such as rejuvenation, physical strength, nutritional benefits leading *dhatupushti*, boosts the vital energy, good mental health, improves neurocognitive function of organs. According to *Charaka* good and normal sleep helps to lengthen healthy and happy life. Hence good quality of sleep is important considering sleep hygiene principles according to the ayurveda. In Ayurveda prospective, *prakritnidra* means

swabhaavatahratriprabhavtai.e.deep and continuous sleep which should be automatic in the night not in excess not in less quantity as imbalanced vikritnidra sleep causes either obesity or weight loss leading to PCOS.

### III. RESULT

Ayurveda believes in balanced state of three pillars for sharirdharna – Ahara {balanced diet}, Nidra {adequate sleep} and Brahmacharya {control on all indriyas}. Imbalance of this tripillars invites various diseases. In PCOS circadian rhythm play a vital role for the manifestation of the symptoms. Hence sleep management should be involved in the treatment protocol of PCOS patients.

### IV. CONCLUSION

Sleep is the important pillar for health and good quality life of women. Women with disturbed and insufficient sleep are at increased risk of insulin resistance which leads to obesity & PCOS. For better ovarian function & fertility we must advise sleep hygiene education in PCOS patients. Ayurveda explained swasthvruthaniyam for nidra to achieve happy long healthy life. The purpose of this study was to evaluate the significance of sleep management (nidra) in lifestyle modification of PCOS. Lifestyle modification is suggested in the management of PCOS in females, in which physical activity and nutrition are focused, sleep is the neglected factor. [15] Sleep modification can be effective on neurohormonal balance & sleep regulation can help to achieve good results in the treatment of PCOS patients. Hence sleep management could be considered in their lifestyle modification besides food and exercise. Clinical documentation should be done to see the effects of sleep modification on ovulation & hormonal changes in PCOS patients as further scope of study.

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