

## **MALE INFERTILITY IN IT PROFESSIONALS**

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### **ABSTRACT**

Infertility is a widespread problem now a day. Medical survey conducted in various cities in India revealed a shocking truth that rate of infertility is increasing in Urban India, more among the IT Professionals. According to the survey, about 15 out of 100 couples from this sector face infertility and 40% of such cases are related to male infertility<sup>1</sup>. IT sector faces a tough competition that makes them extra working hours. This affects family relations, improper and irregular sexual relations, stress and tensions in the work place are the major causes. Sedentary lifestyle and working in Laptop is another culprit. General health and lifestyle issues like smoking, alcohol intake, change in food habits, deskbound work stress and exposure to certain radiations are the key factors that affects negatively. Ayurveda realized the problem thousands of years ago and developed a separate specialty namely, *Vajeekarana Chikitsa*. It recommends the use of *Oushadhas* and proper lifestyle.

**Keywords:** Infertility, Lifestyle, *Vajeekarana Chikitsa*

### **INTRODUCTION**

General health and lifestyle of a man may affect his fertility, although modern science has made commendable advancements in identifying the causes but is still unable to put forth the treatment for the problem. Some common causes of infertility related to health and life style include<sup>1</sup> alcohol and drugs, emotional stress, electromagnetic radiation, tobacco smoking, environmental exposure.

### **AIM**

- To study the causes of male infertility in IT professionals
- To co-relate above mentioned terms with *Ayurvedic* concepts.

### **MATERIAL AND METHOD**

- All classical text available in the modern and *Ayurvedic* literature is reviewed.

- Database available after net surfing, modern text and various research articles was also reviewed.

## **LIFE STYLE RELATED FACTORS IN IT PROFESSIONALS**

### **PSYCHOLOGICAL STRESS:**

Psychological stress could severely affect spermatogenesis, mainly as a result of varying testosterone secretion. Hypothalamo pituitary gonardal axis has an inhibitory action ob Hypothalamic-pituitary-gonadal (HPG) axis & Leydig cells in the testes. Inhibition of the HPG axis results in a fall in testosterone levels, which causes changes in Sertoli cells and the blood-testis barrier, leading to the arrest of spermatogenesis.

### **HEAT**

The testes are descended into the bottom of the scrotum rather than being placed at top where their proximity to the body surface is likely to impair cooling of the testes. Normal sperm production depends on an optimal testicular temperature maintained below body temperature 34-35°C<sup>2</sup>

**Use of laptop:-** Keeping laptops in their lap prompted a greater increase in scrotal temperature around 2.7°C & it can affect spermatogenesis.

**Continuous sitting and working** - can cause elevation in scrotal skin temperature which can lead to abnormal sperm morphology and low sperm count.

### **CELL PHONE USE**

Cell phone has become an indispensable device in our daily life and such a phone with 2000 MHz in frequency bands emits radiofrequency electromagnetic waves (EMW). Recent studies show an effect of cell phone on sperm motility,

semen quality, sperm count, viability and normal morphology of sperm. Cell phone use is associated with low testicular weight and destruction of Leydig cells<sup>3</sup>.

EMW can possibly affect reproductive function via three mechanisms:

- i) An EMW specific effect
- ii) A thermal molecular effect
- iii) A combination of these suggested that Leydig cells are most susceptible cells to EMW, and injury to Leydig cell may affect spermatogenesis.

### **ALCOHOL**

Alcohol administration will reduce synthesis of testosterone. Alcohol-induced low testosterone level is associated with low level of LH. It also decreases level of vitamin-C in testes and epididymis. Testicular alcohol dehydrogenase normally convert retinol to retinal, a compound essential for normal spermatogenesis. When the alcohol dehydrogenase in the testis is preempted to metabolize alcohol, retinal synthesis is blocked results in impaired spermatogenesis<sup>4</sup>.

### **SMOKING**

Endothelial dysfunction that results from smoking and causes coronary artery disease also affects the penile vasculature, which is critical for initiating an erection. Cigarette smoking reduces testosterone production. It is also reported that nicotine inhibits LH secretion in males. Thus nicotine-induced suppression of hypothalamo-pituitary-testicular axis is one of the causes of smoking-induced adverse effects on male fertility. Cigarette smokers were also shown to have higher level of circulating estradiol, which potentially impact spermatogenesis.

### **TIGHT CLOTHING**

The testes hang outside the body to keep them cool, as cool temperatures help in the production of sperm. So wearing tight pants are probably not loose enough to allow proper circulation and keep the area warm<sup>6</sup>. Testicular torsion may be another consequence of wearing tight clothing. It occurs when the spermatic cord holding the testicles in place twists around the testicle and cuts off its blood supply.

#### LACK OF SLEEP

Testosterone is especially crucial for sperm production and the majority of daily testosterone release in men occurs during sleep. Total sleep time, in turn, has been positively linked with testosterone levels in several studies.

Men who slept less than 6 hours or more than 9 hours on average had a 42 percent lower probability of getting their partners pregnant any given month than men who sleep 7 to 8 hours each night<sup>7</sup>.

#### AYURVEDA CONCEPTS OF MALE INFERTILITY

Ayurveda explains the following causes<sup>8</sup>

*Bija upa tapa* (Congenital anomalies)

*Sukradosha* (Diseases of sperm)

Causes are Food factor- Habitual and excessive use of rooksha, *tikta*, *kashaya*, *lavana*, *amla* and *ushna ahara*. Food which are at variance with *desha*, *kala*, *aharasakthi*, *matra*, *doshas* and mode of preparation.

Behavioural factors – *Atimaidhuna*, *Ativyayama*, *Vegadharana*, *Nishajagarana* leads to *rakta* and *Pitta prakopa* ultimately leads to *Sukra kshaya*.

Psychological factors - *Kama*, *Krodha*, *Bhaya*, *Shoka* and *Nishajagarana* leads to *rakta* and *pitta* vitiation will leads to *sukrakshaya*.

#### PREVENTION OF MALE INFERTILITY THROUGH AYURVEDA

In the classics of Ayurveda the following *charya's* (conducts) have been mentioned with which a person will be able to be healthy and cure many of lifestyle disorders like infertility<sup>9,10</sup>.

*Dinacharya*

*Ritucharya*

*Rathricharya*

*Thrayopasthambha palana*

*Sadvritha*

*Achara rasayana*

In the classics of *Ayurveda* the following steps also have been mentioned for the treatment of infertility are

*Poorvakarma* – *Snehana*, *Swedana*

*Pradhananakarma* – *Virechana*, *Snehavasti* ,

*Kashaya vasti*, *Yapana vasti*, *Uttara vasti*

*Pachatkarma* – *Vajeekarana oushadhas*

#### CLASSICAL DRUGS USED FOR VAJEEKARANA AND SUKRALA

*Kapikacchu* (*Mucuna pruriens* Bak) which has been found to increase sperm concentration and motility<sup>11</sup>.

*Gokshura* (*Tribulus terrestris* Linn), which raises testosterone levels<sup>12</sup>.

*Aswagandha* (*Withanta racemosus* Willd.), which enhances spermatogenesis via a presumed testosterone-like effect<sup>13</sup>.

*Shatavari* (*Asaragus racemosus* Willd.) which appears to enhance fertility by reducing oxidative stress<sup>14</sup>.

*Yashtimadhu* (*Glycyrrhiza glabra* Linn.), found to improve semen quality<sup>15</sup>.

#### DISCUSSION

Most of the lifestyle factors including smoking, tobacco chewing, alcohol intake as well as cell phone use decrease semen quality by inducing oxidative stress. Vitamin-C, vitamin-E and Se-

lenium provide strong antioxidant properties to fight free radical damage and maintain the integrity of sperm cells. Thus antioxidant rich food should be incorporated in daily food list. Healthy weight should be maintained and exercise must be done regularly. Having an increase amount of body fat may interfere with production of androgens and can contribute to the production of abnormal sperm. Heavy drinking can also interfere with sperm quality and cause more abnormal sperm production. Thus, alcohol intake should be controlled. Riding a bike for longer than 30 minutes, wearing tight shorts, working in a hot environment and sitting with laptop on lap can all cause an increased number of abnormal sperm.

## CONCLUSION

By addressing simple lifestyle factors and providing *vajikrana* remedies offered in the Ayurveda texts, the Ayurvedic practitioners can help male clients optimize their fertility. Thus it can be concluded that there are a large number of factors that lead to impotency of males, but with the right precautions and Ayurvedic cures, this medical condition can be treated positively. All you need is a balanced diet, proper lifestyle habits, and correct medical assistance. Correction the life style helps in controlling other metabolic disorders like Diabetes mellitus, obesity etc. and hence related impotency too.

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