

## CONCEPT OF MALE INFERTILITY IN AYURVEDA W.S.R TO OLIGOSPERMIA AND AZOOSPERMIA

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### ABSTRACT

Infertility is defined clinically in women and men who cannot achieve pregnancy after one year of having intercourse without using birth control. Many different conditions and other factors can contribute to fertility problem out of these Oligospermia and Azoospermia are present in many more cases. Oligospermia is the male infertility issue defined as low sperm concentration in the ejaculation. As per World Health Organization (WHO), a low sperm count is less than 20 million sperm/ml. Normal sperm count varies from 20 to 150 million sperm per milliliter. Azoospermia is the condition where there is complete absence of sperm in the semen, with resultant infertility. The present article explains about Oligospermia, Azoospermia and related terms in *Ayurveda* like *Kshinretasa*, *Alparetasa*, *BijopghatajShandtva*, *DoshajaShandtva*, *Nir-beej etc.*

**Keyword:** (*Klaibya*, *Shanda*, *Alparetasa*, *Kshinretasa*, *Dushtaretasa*)

### INTRODUCTION

Male without progeny is blamed as tree without fruit. Overall, 1/3 of infertility cases are caused by male reproductive issue, 1/3 by female reproductive issue and 1/3 by both male female reproductive issues or by unknown factors. In about 50% of cases, the cause of male infertility cannot be determined. A complete lack of sperm occurs in about 10% to 15% of men who are infertile. In some cases of infertility a man produces less sperm than normal. Normal sperm count is 20 to 150 million sperm per milliliter<sup>(1)</sup>. The most common cause of this condition is varicocele is present in about 40% of men with infertility. *Ayurveda* also

explained in detail about infertility, its cause's path physiology, treatment under the head of *Vajikarana*. In *Ayurveda* various terms related to infertility are explained like *Klaibya*, *Napunsaka*, *Shanda* which are indicative of impotency and the condition like *Shukradosha*, *Shukradoshjaklaibya*, *Alparetasa*, *Kshinaretasa* are related terms with infertility.

### AIM

- To study the terms Oligospermia and Azoospermia from modern medicine literature.
- 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.

## REVIEW OF LITERATURE

### a. Oligospermia modern view

Oligospermia or synonymously Oligozoospermia is a condition in which sperm count is reduced. Etymological origin of the word Oligozoospermia is as: Oligo(few)+Zoo(live)+Sperm+la (Condition). So, this is a condition in which sperm count will be less than 20mil/ml. (WHO1992). Now WHO reassessed sperm criteria and establish a lower reference point less than 15 million/ml. This condition occurs due to etiological factors which hamper Spermatogenesis and also blockage in path, which conveys sperms from testis to outside.<sup>(2)</sup>

### Major causes of Oligospermia<sup>(3)</sup>

- 1) Congenital: Cryptorchidism or undescended testis incidence about 0.2 of male population.
- 2) Thermal: Scrotal temperature should be less than 2°F from core body temperature. Raised scrotal temperature may depress the spermatogenesis because it is sensitive process which alters with alteration in temperature. The temperature of scrotum will be raised in condition like varicocele, Hydrocele and Filariasis. Moreover working near hot zone and wearing of tight undergarments may depress spermatogenesis.
- 3) Infection: Infection like Syphilis, Non-specific urethrities, Mumps, Orchitis after pubertal period may permanently arrest spermatogenesis.

- 4) Genetic: Klinefelters syndrome and XX male syndrome are two genetic defects which lead to defective spermatogenesis.
- 5) Endocrine: Hypopituitarism, Hypothyroidism, Adrenal hyperplasia can also cause the disease Oligospermia.
- 6) Sexual: Too frequent intercourses decrease the spermatogenesis and sperm cell activity.
- 7) Systemic disease: AIDS lowers the degree of spermatogenesis, renal factor, Cirrhosis of liver, Diabetes Mellitus causes low testosterone level. Vitamin A deficiency also causes reduction in spermatogenesis.
- 8) Addiction: Alcohol is the most important Leydig cell toxin. Tobacco addicts like smoker, chewers and multiple addicts will have below normal sperm count.
- 9) Drug: Antibiotics like Ampicilin, Erythromycin and Cephalexin causes Oligospermia.
- 10) Psychological: Increased stress condition also produces low quality of semen.

### b. Azoospermia modern view<sup>(4)</sup>

Azoospermia is the medical condition of male not having any measurable level of sperm in his semen. It is associated with very low level of fertility or even sterility. In humans Azoospermia affects about 1% of the male population and may be seen in up to 20% of male infertility situation.

### Classification

Azoospermia can be classified into three major types.

1. Pre-testicular Azoospermia.
2. Testicular Azoospermia.
3. Post-testicular Azoospermia.

#### 1) Pre-testicular Azoospermia

Pre-testicular Azoospermia is characterized by inadequate stimulation of testicles other-

wise normal testicles and genital tract. Typically follicle stimulating hormone level are low (Hypogonadotropin) commensurate with inadequate stimulation of testes to produce sperm e.g. Hypopituitarism, hyperprolactemia. Pre-testicular Azoospermia is seen in about 2% of Azoospermia.

## 2) Testicular Azoospermia

In testicular Azoospermia the testis are abnormal, atrophic or absent and sperm production severely disturbed to absent. FSH level tend to be elevated (hypergonadotrophic) as the feedback loop is interrupted. The condition is seen in 49-93% of men with Azoospermia.

Testicular failure includes absence of production as well as low production and maturation arrest during the process of spermatogenesis.

Causes of Testicular Azoospermia:

1. Congenital issues such as Klinefelters syndrome.
2. Orchitis.
3. Trauma.
4. Generally men with unexplained hypergonadotrophicazoospermia need to undergo a chromosomal evaluation.
5. Neoplasm.
6. Mumps, Malaria, Cryptorchidism.

## 3) Post-testicular Azoospermia

In post-testicular Azoospermia sperm are produced but not ejaculated, a condition that affect 7-51% of Azoospermic men.

Causes of Post-testicular Azoospermia:

1. The main cause is physical obstruction (Obstructive Azoospermia). The most common reason is vasectomy done to induce contraceptive sterility. Other obstruction can be congenital e.g. agenesis of vas deferens, ejaculatory duct obstruction due to infection.

2. Ejaculatory disorder includes retrograde ejaculation and an-ejaculation, in this condition sperm are produced but not ejaculated.

## Ayurvedic view

After careful review of Ayurvedic compendia, it is noticed that terms like *Klaibya*, *Napunsaka*, *Shanda* are used synonymously to indicate impotency. But terms like *KshinRetasa*, *AlpaRetasa*, *DushtaRetasa*, *ShukradoshajaKlaibya*, *Bijopghataj-Shandtva* reflect male infertility concept. According to *Charaka*, *Shandtva* is covered under *Klaibya* where in *Nirbija* is said to be one of the condition. According to *Sushruta* *Bijopghatajashandtva* covers a wide range of condition related to infertility. They also explains that repeated indulgence in sex without following the regimen laid down in classics lead to regression of *ShukraDhatu* which further results in *Klaibya*. *Sushrutacharya* quoted terms like *AlpaRetasa*, *KshinaRetasa*, *DushtaRetasa* while defining the *Vajikaran-Tantra* in *Sustrasthana*.

a. **DoshajaShandtva**: This condition is due to vitiation of *Shukra* by *Tridoshas*. There are eight such a conditions enumerated by *Charaka* and *Sushruta* which lead to infertility. Excessive intake or certain dietary factors like *Katu-Amla-LavanaAtisevana* are responsible for the vitiation of smooth tissue (*soumyadhatukshaya*) and may lead to infertility due to state of low quantity of *shukara*<sup>(5)</sup>. *Bhavamishara* considered that above factor may lead to *Pittavruddhi* resulting in *Shukrakshaya*.

b. **VyadhijanitaShandtva**: Some diseases like *Medhrarogas*, *Marmacheda*, *Rajayakshama* and *Vataroga* are involved with *Shu-*

kraksaya because these diseases occurs due to *Dhatukshaya*<sup>(6)</sup>.

c. **JarasambhavajaShandtva:** The *Vridhavasta* (old age) leads to *Shukrakshaya* and *Dhatukshaya*. It may also occur due to *Avrashyasevana*. It is characterized by *Dhatukshaya*, *Durbala*, *Vivarna*, *Vyadhisambhava*<sup>(7)</sup> etc. In *Vridhavasta* there is naturally *VataprakopaAvstha* due to this there is *Dhatukshaya* because except *Asti Dhatu* other *Dhatu* are predominantly made from *Kaphadosha*. So due to *Vatavridhi* and *Kaphakshaya* leads to *Dhatukshaya* and *shukrakshaya*.

d. **Shukrakshayajaklaibya:** *Sushruta* quoted that repeated indulgence in sex without following the regimen laid down in the classics may lead to regression in *Shukaradhatu* which result in *Klaibya*<sup>(8)</sup>. It is the condition due to low quantity of sperm and it further lead to impotency.

## DISCUSSION

Like modern medicine *Ayurveda* explain terms which are related directly with oligospermia such as *Shukarakshaya*, *Kshinaretasa*, *Alparetasa* etc. *DoshajaShandtva*, which lead to *shukarakshaya* due to vitiation of *dosha*. *Vyadhijanitashandatva* in which due to some disorders person becomes weak and it lead to low sperm count i.e. *Shukarakshaya* due to *VyadhijanitaDhatukshaya*. Modern medicine also explained some dis-

eases which lead to Oligospermia i.e. *Shukrskshaya* e.g. *Varicocele*, disease of testicles etc. Some terms like *Nirbeeja* and *Ab-eeja*<sup>(9)</sup> are quoted by *AcharyaSushruta* and *Vagbhata* during explanation of *Napunasa-kalakshana*, *dushata-shukra* respectively. *Nirbeeja*<sup>(10)</sup> meaning complete absence of *Shukra*, while explaining *AbeejaVagbhata* given explanation as one which is incapable of producing embryo. *Acharya Sushruta* also explains term *Sashukra* and *Ashukrashanda* where *Ashukra* means absence of *Shukra*. But no any single term is directly related to Azoospermia. Meaning of these terms indicates about Azoospermia.

## CONCLUSION

In *Ayurveda*, *AcharyaSushruta* while defining the *Vajikarana –tantra* quoted the terms like *Kshinaretasa*, *Alparetasa*, indicating towards Oligospermia. Some other terms *Shukarakshaya*, *Kshinashukara* also indicate Oligospermia. There is no any clear cut explanation regarding the term Azoospermia but at one point during explaining *DoshajashandatvaacharyaVagbhata* in *Ashatangsangraha* quoted term *Ab-ija* that means incapable of producing embryo. *Sushruta* quoted terms *Nirbeeja*, *Ashukrashanda* which are indirectly related to Azoospermia.

## CORELATION BETWEEN MODERN AND AYURVEDIC CONCEPT

Modern view	Ayurveda view
1) Oligospermia	<i>DoshajaShandtva</i> , <i>VyadhijanitShandtva</i> .
2) Pre-testicular Azoospermia	<i>Doshaja(Vatadoshaja) Shandtva</i> .
3) Testicular Azoospermia	<i>SahajaShandtva</i> , <i>BijopghatajaShandtva</i> .
4) Post-testicular Azoospermia	<i>SahajaShandtva</i> , <i>VatadoshajaShandtva</i> .

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