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Ayurvedic management of male Vandhyatwa with special reference to male infertility

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Abstract

Infertility is the not getting pregnant, despite of having carefully timed, unprotected sex for one year. Various environmental and biological factors affect the sperm count in males. Oligozoospermia means low sperm count and Azoospermia means complete absence of sperms is one of the main cause of male infertility and term can be correlate with KsheenaShukra and Nirbeeja /Ashukra respectively. There is no satisfactory treatment in modern medicine for this condition. Asthenozoospermia means the motility of spermatozoa is lower than 50% of active motile sperm. Ayurveda has many ways to increase sperm count, sperm motility and thus increase fertility. Sperm quality, quantity and motility decreases as their age progresses. The Aging process can be slow down by using Ayurvedic Vajeekarana Chikitsa (Aphrodisiac Therapy) which rejuvenates the male reproductive system and slows down the aging process also increases the quality, quantity and motility of sperms . It has also recommended an appropriate use of plant based remedies, a proper lifestyle and nutritious diet, Panchakarma, Yoga for improving overall health and treating male infertility. Current paper aims at putting forward the causes and treatment of male infertility as described in Ayurveda.

Keywords: Vandhyatwa; Infertility; Vajeekarana Chikitsa; Panchakarma; Yoga

1. Introduction

Infertility is the worldwide problem and it affects 15% of married couples worldwide. [1]The prevalence of infertility in general population is 15-20% [2], and of this, the male factor is responsible for 20-40% [3]and in India, the prevalence is around 23% [4]. In a preliminary study by the WHO multi-centre study, 45% of infertile men [5] were found to be affected by Oligozoospermia [6] or Azoospermia [7].

Oligozoospermia means the sperm count is less than 20 million /ml and Asthenozoospermia means the motility of spermatozoa is lower than 50% of active motile sperm (WHO 1992). [8] In Oligoasthenozoospermia both less number of sperm and low motility are found.

Ayurveda realized the problem of male sexual dysfunction thousands of year ago and developed a separate speciality, namely Vajeekarana Chikitsa (Aphrodisiac Therapy). Vajeekarana is one of the branch of Ayurveda that deals with preservation and amplification of sexual potency of healthy man and conception of healthy progeny as well as management of defective semen ,disturbed sexual potency and spermatogenesis along with treatment of seminal related disorders in male.[9]Vajeekarana promotes the sexual capacity and performance as well as improves the physical, psychological and social health of an individual. [10]The term oligozoospermia was correlated in research works with *KsheenaShukra*; *AlpaShukra*; *Shukra Dosha*; *Shukra Dushti*; *Shukra Kshaya*; *Shukralpata Ksheena Retasa*; *Beejopghata* and *Shukradhatu Vikara*. (11) Among these, *KsheenaShukra* is used in majority of the research works with

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special reference to Oligozoospermia is the seminal disorder in which sperm count is below 20 million/ml.(12)Azoospermia is correlated with *Nirbeeja, Abeeja, Ashukra, Shandhatva in Ayurveda*. Ayurveda considers health and disease both as the product of food and lifestyle. A healthy lifestyle and healthy diet promote health and prevent disease. In context Ayurveda provides better solution in the form of proper dietary management (Pathya-Apathya), life style advice (Dinacharya, Rutucharya), Panchakarma (Detoxification), Ahara-Vihara, Yoga, Vajeekarana Chikitsa for management of Oligoasthenospermia and Azoospermia.

Modern therapy used in management of Oligozoospermia has many side effects and costly so to overcome these drawbacks Ayurvedic Study is necessary in management of Oligospermia, Azoospermia & Asthenospermia.

Aim and Objective

- To study the causes and diagnosis of Oligospermia, Azoospermia, Asthenospermia.
- To study the treatment of Oligospermia, Azoospermia, Asthenospermia.

2. Material and methods

Regarding article is based on Ayurvedic texts, material related to Oligospermia and Azoospermia, Asthenospermia and related supportive information collected. The main Ayurvedic text used in this study are Bhruhatrayee, Laghutrayee and available commentaries on these. Here references also taken from modern text and various websites, research articles regarding relevant topic.

3. Discussion

The Diagnosis is made according to history taking, Clinical Examination and investigations.

The Causes [13] mentioned in Ayurvedic Text are as follows:

- Jaraya (Old age)
- Chinta (Worry)
- Vyadhi (Diseased condition)
- Karma Karshnya (Excess work)
- Kshaya (debilitating disorders) Streenamatinishwan (frequent intercourse history)

Causes mentioned in Modern Science are as follows

- **A medical condition:** like Testicular infection (Cancer or Surgery. AIDS, Syphilis, Nonspecific Urethritis, Mumps, Orchitis etc.), Cancer or Surgery.
- **Thermal:** Scrotal temperature should be less than 20F from core body temperature. Raised scrotal temperature may depress the spermatogenesis. The temperature of scrotum will be increased in condition like Filariasis, Hydrocele and Varicocele, also working near hot zone and wearing tight undergarments may depress the spermatogenesis.
- **Ejaculation disorders :** If the ejaculatory ducts are blocked, Semen may be ejaculated in to the bladder
- **Hormonal imbalance:** Hypogonadism lead to a testosterone deficiency. Hypothyroidism, Adrenal hyperplasia, hypopituitarism also causes oligospermia.
- **Genetic factors:** A man should have an X and Y Chromosome. If he has 2 X Chromosomes and 1 Y Chromosome, as in Klinefelter's syndrome, the testicles will develop abnormally and there will be low testosterone and allow sperm count or no sperm.
- **Drugs:** for example-Antibiotics Ampiciline, Erythromycine and Cephalexine causes Oligospermia. Steroids, Cocaine, Marijuana etc. also affects on sperms.
- **Excessive sexual activity:** decreases the spermatogenesis and sperm cell activity.
- **Emotional Stress:** Stress may interfere with certain hormones needed to produce sperm.
- **Life style generated disorders:** Diabetes, Obesity, Renal factor, Liver Cirrhosis affects the testosterone level. Deficiency of vitamin A reduces spermatogenesis.
- **Electromagnetic Radiation:** Laptop, computers, cell phone, X-ray etc.
- **Exposure to Chemicals:** Pesticides may increase the risk.
- **Malnutrition:** Deficiencies in nutrients such as vitamin C, Selenium, Zinc and Folate may contribute to infertility.

- **Age:** Male fertility starts to fall after 40 years.
- **Hypospadias:** The Urethral opening is under the penis, instead of its tip. This abnormality is usually surgically corrected in infancy. If the correction is not done it may be harder for the sperm to get to female's cervix. Hypospadias affects about 1 in every 500 newborn boys.
- **Cystic Fibrosis:** This is a chronic disease that results in the creation of sticky mucus. This mucus mainly affects the lungs, but males may also have a missing or obstructed vas deferens carries sperm from the epididymis to the ejaculatory duct and the urethra.

The clinical features of Ksheena Shukra are as follows

- Daurbalya (Weakness),
- Mukhashosha (Dryness of mouth)
- Pandutva (Pallor)
- Sadana (Malaise),
- Shrama (Dyspnea on exertion)
- Klaibya (Impotence)
- Shukraavisarga (Unable to ejaculate)

Routine investigations for Semen Analysis

- Fructose
- Serum FSH, LH Levels
- USG & Colour Doppler study of Testies
- Investigations to diagnose microbial conditions such as UTI, STD's, male accessory gland infections
- Semen Leukocyte analysis;
- Anti sperm antibody test;
- Hypo osmotic swelling test;
- Sperm penetration assay;
- Sperm chromatin structure;
- Chromosomal studies;
- Genetic analysis,
- CT scan or MRI of Pelvis
- Testis biopsy & vasography,
- Fine needle aspiration 'mapping' of the Testes,
- Semen Culture etc.

Treatment in Modern medicine

- Recombinant FSH
- Human Chronic Gonadotropin (HCG) hormone,
- Humanmenopausal Gonadotropin releasing hormone (GnRH)
- Clomiphencitrate, an Estrogen receptor antagonist, is an oral medication used to stimulate Gonadotropin release from the Pituitary Gland.

However these options are expensive, can take up several months to yield benefits and are not without risk. The common side effects observed by this hormonal treatment is as gynecomastia, bloating, stomach and pelvic pain, blurred vision, photophobia, nausea, vomiting, gastro-intestinal disturbance. Hence to overcome these drawbacks Ayurvedic study is necessary in management.

3.1. Ayurvedic concept about prevention of male infertility

A healthy lifestyle and healthy diet promote health and prevent disease. In this context Ayurveda provides better solution for Male infertility in the form of-

- **Proper Dietary Management (Pathya-Apathya),**- Pathya - (Snigdha Pradhan Bhojana) Masha, Godhuma, Tandula, Dugdha, Ghrita, Madhu, Kukkutanda, Matsya etc.
Apathya- Ruksha Annapana.

- **Life Style Advice** (Dinacharya, Rutucharya, Ratricharya, Trayopstambha, Sadvritta, Achara Rasayana, Ashtanga Yoga),
- **Panchakarma** (Detoxification)-Snehana (Oleation), Swedana (Sudation),
- **Virechana (Purgation)** – Shukra is Saumyai.e. Jalamahabhutapradhana. Here, pathology includes low count along with decreased motility. Low count is due to involvement of *Pitta* as it possesses Agneya Guna which is reverse to Saumya Guna of Shukra. Motility i.e. Chalatra is Guna of *Vata*. So here vitiated *Vata* is involved in pathology of low motility. In order to remove the vitiated *Pitta Dosha*, *Virechana* is administered. It also eliminates the srotorodha and active transformation of *Dhatu* through *Dhatvagni Vyapara* and the most desirable *Shuddha Shukra* is produced. The whole process helps in eliminating the free radicals (Oxidants) present in the micro circulatory channels of *Shukravaha Srotasa*, which interferes with the function of *Shukra* and by doing so, increases the activity of *Shukra* (motility) as well as *Shukravaha Srotasa* and the respective *Dhatvagni* there by facilitating the production of more *Shukra Dhatu*. (Volume count).
- **Basti**- Anuvasana Basti (Oil enema), Niruha Basti (Decoction enema), Yapana Basti (Rejuvenating enema which can be used for a long time without any adverse effect.) Uttar Basti (enema given through the urethral orifice) Acharya Sushruta explained that there was vitiation of *Apana Vayu* and *Vyana Vayu* in the *Shukradoshab* because site of *Shukra* is the whole body and *Apana Vayu* is responsible for the proper expulsion of *Shukra Dhatu* vitiation of *Apana Vayu* can impair the function of *Shukra*. *Basti* therapy is specifically designated to treat *Vata Vikaras*. *Basti* by expelling out *Vit*, *Shleshma*, *Pitta*, *Anila*, *Mutra* offers firmness of the body and enriches *Shukra*. Acharya Charaka also specifically mentioned *Basti Karma* for *Shukra Doshas*. Therefore drugs which are administered in *Basti* form are said to enhance the quality and quantity of *Shukra*. The line of treatment of *Kshina Shukra* should be based on *Brimhana Chikitsa* and *Vrishya* drugs having *Shukra Vriddhikar* properties. *Yapana Basti* is said to possess best *Brimhana* and *Rasayana* effect which magnifies the quality of *Rasa Dhatu* and *Dhatvagni*. As a result formation of better *Dhatu* takes place. As a whole all the *Dhatu*s get nourished by *Yapana Basti* to maintain *Dhatu samya* and to improve the resistance of the body towards the invasion of the disease.
- **Yoga** – Improve blood circulation and body toning, Yoga helps in reducing stress, because stress is considered the primary psychological cause of infertility. Some poses in yoga can help not just improve blood circulation but balance your body's chemicals which in turn produce more sperm.

3.2. Some useful yoga exercise to increase sperm count

- Setubandhasana
- Agnisarkriya
- Halasana
- Dhanurasana
- Ardhamatsyendrasana
- Padmasana
- Surya namaskara
- Pranayama

Medicinal treatment for management of Oligospermia, Asthenospermia and azoospermia. i.e. Rasayana, Vajikarana or Shukrala Chikitsa. When factor associated with *Rasa Dhatu*, Rasayana is more useful and when associated with *Shukra Dhatu*, Vajikarana plays important role.

Herbs traditionally used for Vajikarana and Shukrala purposes are as follows-

3.2.1. Kapikachchu (*Mucunapuriens Bak*)

Which has been found to increase sperm concentration and motility. [21] in oligozoospermic patients significantly improves testosterone, LH, dopamine, adrenaline and nor adrenaline in infertile male and reduced level of prolactin also there is improvement in sperm count and motility.

3.2.2. Shweta Musali

The dried roots of *Shweta Musali* (also known as asparagus) are used in *Ayurveda* as an aphrodisiac. Its tubers are used in *Ayurvedic* medicine preparations. It contains about 30% alkaloids, natural steroids and inositol (10-20%), polysaccharides (40 to 45%), carbohydrates and proteins (5% to 7%). *White Musali* or *Shweta Musali* is primarily used as a tonic to rejuvenate the reproductive system. It works by its *Shukrala* (beneficial effect on male sexual health) *Rasayana* (adaptogenic activity) and *Balya* (general health tonic). There is a large use of this herb is valuable in impotency, premature

ejaculation and low sperm count in men. As it is very rich in glycosides, it works very well in curing impotency and low sperm count.

3.2.3. Gokshura (*Tribulusterrestris* Linn.)

Which raises testosterone levels. *Gokshura* has *Madhura Rasa* (Sweet), *Guru* and *Snigdha* (unctuous and heavy quality), *Sheeta Veerya* (Cold in Potency), *Vrishya* (Aphrodisiac), *Rasayana* (Rejuvenator), *Brimhana* (Nourishing therapy) and *Vatapittahara* properties. *Vatapittahara Karma* is very useful in cases of *Ksheena Shukra*, as it is a *Vata* and *Pitta* predominant disease. However, *Madhura Rasa*, *Snigdha* and *Guru Guna* increase the *Shukra Dhatu* qualitatively and quantitatively. *Gokshura* is known for its utility in *Mutravaha Srotas*, by correction of the *Apana Vata*, it exerts action on the *Shukra* also, along the lines similar to how *Shukra Visarga* is governed by *Apana Vata*. *Tribulusterrestris* contains three groups of active phytochemicals. They are Dioscin, protodioscin and diosgenin. Protodioscin is a potent natural precursor of the testosterone enhancer. It also increases the production of Testosterone in another natural way. *Tribulus* leads to the production of the luteinizing hormone (LH). When the LH levels are increased, the natural production of testosterone also increases. LH is a hormone that also deals with sex drive. LH has been used to increase fertility and helps to relieve impotence. This study shows significant remission in the signs and symptoms of *Ksheena Shukra*.

3.2.4. Ashwagandha (*Withaniasomnifera* Dunal.)

Which enhances spermatogenesis via a presumed testosterone like effect. *Ashwagandha* is a very effective medicine for male infertility. As a digestive, it corrects metabolism and helps to provide proper nutrition. It is effective in mental disorders. It is helpful in sexual disorders like Erectile Dysfunction and Oligozoospermia.

3.2.5. Shatavari (*Asparagus racemosus* Willd.)

Which appears to enhance fertility by reducing oxidative stress.

3.2.6. Yashtimadhu (*Glycyrrhizaglabra* Linn.)

Found to improve semen quality.

Apart from the above mentioned Ayurvedic Plants, male infertility can be cured with various other Ayurvedic medicines, some of them being *Shilajaturasayana*, *Abhrak Bhasma*, *Agnitundivati*, *Sukumar Ghritam*, *Amritaprasam*, *Asvagandhadilehyam*, *Mamshasarp*, *Kusmanda Ghritam*, *Kalyanaka Ghritam*, *Ashwagandhadighritam*, *Shatavari Lehyam*, *Madan Kameshwari*, *Chyavan Prasham*, *Dashmularishtam*, *Draksharishtam*, *Ashwagandharishtam*, *Chandraprabhavati*, *Suvarna Bhasma* etc.

- **Shukra Shodhana Gana**- (drugs which used in purification of Semen or sperm)- *Kushtha*, *Elvaluka*, *Katphala*, *Samudraphena*, *Kadamba Niriyasa*, *Ikshu*, *Kanda Ikshu*, *Ikshuraka*, *Vasuka*, *Ushira*
- **Shukra Janana Gana** - (Drugs which helps in formation of semen or sperm) - *Jeevak*, *Rushabhak*, *Kakoli*, *Kshirkakoli*, *Mugdaparni*, *Mashparni*, *Meda*, *Vriksharuha*, *Jatila*, *Kulinga*.
These should be given with milk asanupan or combined with a Vajeekarana Diet.

Treatment according to cause

- **Alpa Retasa**- *Apyayana* means nourishment. According to *Samanya Vishesh Siddhanta* (Principle), two substances having same properties increase quantity and quality both so here *Gunas* of *Goghrita*, milk product like *Navneeta*, *Dadhi* etc. *Mamsa* resembles with *gunas* of *Shukra*. So it nourishes *Shukra Dhatu* by quality and quantity both.
- **Dushta Retasa**- *Prasadana*. *Prasadana* means cleansing or detoxification and which can be done by *shodhana karma*. Due to *shodhana* cleansing of *dhatu* takes place after that we give drugs which can do nourishment of *shukradhatu*.
- **Ksheena Retasa**- *Upachaya spermatogenesis* e.g. *Kapikachchu* has *Veeryavardhaka* effect.
- **Vishushka Retasa**- *Janana*- regeneration. Drugs having regeneration properties have *Rasayana* (Rejuvenation) and *Vrishya* (Aphrodisiac) effect. e.g. *Yashtimadhu*, *Musali*.

4. Results

The treatment approach based on Ayurvedic Principles can produce encouraging results in the management of Male infertility not only in improvement in sexual functional parameters but also in increasing the quality and quantity of

semen. There are large number of factors that lead to impotency of males, but with the right precautions and Ayurvedic drugs cures, this medical condition can be treated positively. There is a need of balanced diet, proper lifestyle habits and correct medical assistance. Which also helps in controlling other metabolic disorders like Diabetes Mellitus, Obesity etc. and hence related impotency too.

5. Conclusion

It can be concluded treatment approach based on Ayurvedic Principles can produce encouraging results in the management of Male infertility not only in improvement in sexual functional parameters but also in increasing the quality and quantity of semen.

Compliance with ethical standards

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