

Ayurlog: National Journal of Research in Ayurved Science*A Web based quarterly online published Open Access peer reviewed National E-journal of Ayurved***A review on management of oligozoospermia by ayurveda****Sonar Roshankumar Ambadas^{1*}, Thorwe Preeti Rajaram²,****Choudhari Saudamini Sudhir.³**

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Email – roshansonar84@gmail.com**ABSTRACT-**

Infertility is a problem of global proportions, affecting on an average 8-12% worldwide. Various environmental and biological factors affect the sperm count in males. Low sperm count (Oligozoospermia) is one of the main cause of male infertility and it is correlated with *Kshina Shukra*. Numerous ways are explained in *ayurveda* to increase sperm count, sperm motility and thus increase fertility of men. The sperm quality and motility in men reduce as their age progress. The aging process can be slowed down by using *Ayurvedic Vajikarana* therapy. *Vajikarana* therapy rejuvenates the male reproductive system and slows down the aging process. It also increases quality

and quantity of sperms thus increasing sperm count and sperm motility.

Reproductive endocrinologist treat men with abnormal semen parameters with medications such as recombinant FSH, human chorionic gonadotropin (hCG) hormone, human menopausal gonadotropin (hMG), or gonadotropin- releasing hormone (GnRH). Clomiphene citrate, an estrogen receptor antagonist, is an oral medication used to stimulate gonadotropin release from the pituitary. 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 gynaecomastia, bloating, stomach and pelvic pain, blurred vision, photophobia, nausea, vomiting, gastro intestinal disturbance. Given these

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shortcomings, *ayurvedic* practitioners are well positioned to offer their patients with a more holistic approach to improving male reproductive health. Studies indicate that there are so many safe *ayurvedic* medicines to combat oligozoospermia. That's why we take a review on management of oligozoospermia by *ayurveda*.

Keywords- Oligozoospermia, *Kshina Shukra*, *Vajikarana therapy*, Clomiphene citrate.

INTRODUCTION-

Infertility is defined as the inability to achieve pregnancy after one year of unprotected coitus^[1]. Infertility is a problem of global proportions, affecting on average 8–12 percent of couples worldwide^[2]. Annual incidence of male infertility is at least 2 million cases (based on The National Women's Health Information Center - NWHIC). Its prevalence is extremely high in metropolis as well as in smaller towns of India^[3]. Except some physical defects, low sperm count (oligozoospermia) and poor sperm quality are responsible for male infertility in more than 90% of cases. Out of these in about 30% to 40%, the cause is unexplained, and in the rest of the cases critical illness, malnutrition, genetic abnormalities, pollution, side effects of

some medicines, hormones and chemicals play the major role^[4].

Vajikarana is one of the branch of *Ayurveda* that deals with the preservation and amplification of sexual potency of a 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^[5]. *Vajikarana* promotes the sexual capacity and performance as well as improves the physical, psychological and social health of an individual^[6].

The term oligozoospermia was correlated in research works with *Kshina Shukra*; *Alpa Shukra*; *Shukra dosa*; *Shukra Dusti*; *Shukra Kshaya*; *Shukralpata Kshina Retas*; *Bijopaghata* and *Shukradhatu Vikara*^[7]. Among these, *Kshina Shukra* is used in majority of the research works with special reference to Oligozoospermia. Oligozoospermia is the seminal disorder in which sperm count is below 20 million /ml^[8].

The diagnosis is made according to history taking, clinical examination and investigations. The causes mentioned in *ayurvedic* text are as- *jaraya* (old age), *chinta* (worry), *vyadhi* (diseased condition), *karm karshana* (excess work), *kshaya* (debilitating disorders), *strinaam ati*

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nishewana^[9] (frequent intercourse history) and the causes mentioned in modern science as – high temperature, certain poisons such as lead, arsenic, mercury, certain hormonal conditions (hypothyroidism, hyperthyroidism etc), smoking, excessive alcohol intake, varicocele, hydrocele, testicular failure, mumps, malaria etc. The clinical features of *Ksheena shukra* mentioned in *ayurvedic* text are as follows- *Daurbalya* (weakness), *mukhshosha* (dryness of mouth), *pandutva* (pallor), *sadana* (malaise), *shrama* (dyspnea on exertion), *klaibya* (impotence), *shukra avisarga*^[10] (unable to ejaculate). Various investigations are done for diagnosis of oligozoospermia as per cause and clinical features. Some routine investigations are as follows- Semen analysis, Urinalysis, Seminal fructose and post ejaculate urinalysis, Fructose: derived from the seminal vesicle. Hormone assessment by serological test as Serum FSH, LH levels, ultrasonography, color Doppler study of testis. Investigations to diagnose microbial conditions as urinary tract infections, STDs, male accessory gland infections Semen leukocyte analysis; Antisperm antibody test; Hypo osmotic swelling test; Sperm penetration assay; Sperm chromatin structure; Chromosomal studies; Genetic analysis, CT scan or MRI of the pelvis, Testis biopsy & vasography, Fine-needle

aspiration ‘mapping’ of the testes, Semen culture etc.

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 oligozoospermia.

REVIEW OF WORKDONE ON OLIGOZOOSPERMIA-

Kawach is a medicinal plant, which has been mentioned in the treatises of ancient Indian texts such as the '*Charaka Samhita*' and the '*Susruta Samhita*'. In Hindi, it is called '*Kawach*' (***Mucuna pruriens***). The medicinally valuable parts are the seeds, though studies have revealed the presence of active components in stems and leaves too. Treatment with *mucuna pruriens* 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.

The dried roots of *Shweta Musli* (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 steroid saponin (10-20%), polysaccharoids (40 to 45%), carbohydrates and proteins (5% to7%).

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White *Musli* or *Shweta Musli* 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). The regular 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.

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^[11].

Gokshura has *Madhura rasa* (sweet), *Guru* and *Snigdha guna* (unctuous and heavy quality), *Sheeta Virya* (Cold in Potency), *Vrishya* (Aphrodisiac), *Rasayana* (Rejuvenator), *Brimhana* (Nourishing therapy), and *Vatapittahara* properties. *Vatapittahara Karma* is very useful in cases of *Kshina 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*. *Tribulus terrestris* 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 *Kshina Shukra*^[12].

Ashwagandha choorna and *Yastimadhu choorna* were effective in the management of *Shukrakshaya* (Oligozoospermia). *Ashwagandha Choorna* group was more effective on motility, volume, viscosity, active motile, sluggish motile and non motile; whereas *Yastimadhu choorna* was more effective in *Asakt maithun*, *Kamasakt*, *Shukravisarga*, *Harsh* and sperm count. 3 gram *Ashwagandha choorna* with 150 ml cow milk was given twice a day to first group for 1 month. Similarly, 2 gram *Yastimadhu Choorna* with 150 ml cow milk was given twice a day to second group for 1 month^[13].

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Various research studies indicate that *shilajita* exhibits antioxidant, anti-inflammatory, adaptogenic, immunomodulatory, and antidyslipidemic properties. This is the corner stone of sexual reproduction. Spermatogenesis produces mature male gametes, commonly called sperm (specifically known as spermatozoa) which are able to fertilize the counterpart female gamete. Furthermore, animal and human data support use of *shilajit* as a revitalizer, enhancing physical performance and relieving fatigue with enhanced production of ATP (Adenosine triphosphate). Impaired adenosine signaling is associated with erectile dysfunction (ED). In various studies *Shilajit* shows results as-

- Enhanced total sperm count (concentration of sperm in a man's ejaculate)
- Improved semen motility after different time intervals. Sperm motility describes the ability of sperm to move properly towards an egg.
- Decreased of semen Malondialdehyde (MDA) content by 18.7%. More the Malondialdehyde content in semen means more the oxidative and DNA damage to the sperm. Malondialdehyde in sperm is normally higher in older patients above 40 years of age.
- Boosted testosterone levels. Testosterone levels indicate the extent of sexual drive and vigor. It is known to decrease with age.

- Enhanced Follicle-stimulating hormone production. FSH regulates the development, growth, pubertal maturation and reproductive processes of the body. In both males and females, FSH stimulates the maturation of germ cells. In males, FSH induces Sertoli cells to secrete androgen binding proteins.

- The parasympathomimetic effect of *shilajit* accounting for relaxation of corpus cavernosum may be one of the major mechanisms attributing to its traditional role as an aphrodisiac. Corpus cavernosum of penis (singular) is one of a pair of sponge-like regions of erectile tissue, which contain most of the blood in the penis during penile erection^[14].

Research work was done on Physico-chemical analysis of *vanga bhasma* and its clinical evaluation in *ksheena shukra* (oligozoospermia). Material of study- *vanga bhasma* 125 mg bid with *anupana* milk for 45 days.

It shows that *Vanga bhasma* is very effective in *shukrakshaya* and *shukrameha*. It was given in ayurvedic text as “*vanga bhakshato narasya na bhavati | swapnepi shukra kshayam ||*” *rasatarangini-19*. Many *rasa vaidyas* called *vanga* as *shukrala dhatu, vrushya* which indicates its main use. According to *Rasopanishata* - “*sarveshameva lohanam balavan vangam*”

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ucchete". According to Indian maetria medica *Vangabhasma* is best drug in sexual disability and impotency. In the present study an effort has been made to discuss the probable mode of action of *vanga bhasma on ksheena shukra* (oligospermia). The pharmacodynamic properties of *vanga bhasma* is as follows. Due to *tikta rasa, kashayarasa, sheetavirya, laghu guna & rooksha guna vangabhasma* mitigates *pitta*. By virtue of its *lavanarasa, ushna guna* and by *balya guna* it mitigates *vata*. As the *ksheenashukra* is a resultant of vitiated *vata & pitta*. In the present study *vanga bhasma* is given with milk as *anupana*. The milk has *madhura rasa, snigdha guna & sheeta virya* which mitigates the vitiated *vata & pitta dosha*. It is *medhya, vrishya, rasayana & shukra doshanashaka*. Milk is a *shukra vardhaka & also is pathya for the vata pittaja vyadhi*. Hence *vanga bhasma & milk* is the best remedy for *ksheena shukra*, which enhances the quality & quantity of *shukra*^[15].

M.D as well as Ph.D Scholars in the Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University had been submitted research works on Oligozoospermia. The work done by using single herbs are mentioned in classics like *Kapikacchu (Mucuna pruriens), Vidarigandha (Pueraria tuberosa), Ashvagandha (Withania somnifera),*

Kokilaksha (Asteracantha longifolia), Jatamamsi(Nardostachys jatamansi), Shwetamusli (Asparagus adscendens), Shatavari (Asparagus racemosus), Kshira Vidari (Ipomea digitata) etc. The work done by using compound drugs are as *Vajikarana Yoga, Shatavaryadi Yoga, Kokilikshadi Churna, Amalaki Rasayana, Bhallataka Phalamajjadi Avaleha, Narasimha Churna* etc., Mineral formulation like *Svarnabhasma* was also studied in cases of *oligozoospermia*. Also to evaluate the efficacy of *Shodhana Karma* in Oligozoospermia research works were done and concluded that *Basti* is effective in the management of the same.

Vajikarana Karma of *Atmagupta, Kokilaksha and Jatamansi* was studied with special reference to their effect on *Shukravruddhi* in selected 50 patients and reported positive effect of *Kokilaksha* on conditions like *Daurbalya*, Sperm count, sperm motility and duration of sexual act & frequency of coitus. While *Atmagupta* were found effective on *Daurbalya* and anxiety as well as on libido. *Jatamansi* showed a good effect on anxiety, anorgasmia and insomnia.

A Randomized clinical comparative study on 92 patients of male infertility was done. Where the patients were treated in three separate groups as-

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- 1) *Svarna Bhasma* in dose of 4 mg (in capsule form) twice daily with milk.(n=35)
- 2) *Musali Churna* in the dose of 3 gm twice daily with milk.(n=33)
- 3) *Asvagandha* in the dose of 3 gm twice daily with milk (n=24).

The duration was of 30 days.

The results of the study showed that *Svarna Bhasma* significantly improved both rapid and slow longitudinal progressive (RLP, SLP) motility and caused corresponding decrease in the immotile spermatozoal count and abnormal forms of spermatozoa. One-month treatment of 35 asthenozoospermia patients with *Shveta-Musali* caused insignificant increase in sperm count. But there was significantly increased RLP motility and SLP motility in fourth month of study. *Ashvagandha* insignificantly increased sperm count during first three months of study. It insignificantly improved RLP motility and SLP motility. Comparison showed that *Svarna Bhasma* improved all types of sperm motility, which was significantly better than other two groups.

In this study, the patients of oligozoospermia were treated with *Basti* by classical method i.e. by Classical *Basti Putak* method. *Kala basti* are sixteen in number. Out of sixteen, ten *Anuvasana Basti* contains 100 ml of *taila* (*Eranda Taila* and *Saindhava lavana*) were administered and Six *Asthapana basti* of 500ml of *Baladi*

Yapan Basti were given. The patients were subjected for *Abhyanga* with *Bala taila* and *Baspa Sveda* prior to the administration of the *Basti*. *Basti* given by *Basti putak* significantly increases the sperm count^[16].

In this study efficacy of *shukravardhaka dravyas* were studied. The details of the drug are as given below –

N o.	Dravyas	Latin name	Part used
1.	Shatavari	<i>Asparagus racemosus</i>	Tuber
2.	Ashwagandha	<i>Withania somnifera</i>	Root
3.	Aamla	<i>Emblica Officinalis</i>	Fruit
4.	Gokshura	<i>Tribulus terrestris</i>	Fruit
5.	Vidaari	<i>Pueraria tuberosa</i>	Tuber

It is also observed that the symptoms of *shukra kshaya* were relieved effectively by using these *dravya*. The results are encouraging and support the classical claim that *dravya* studied is effective in reducing the symptoms of *Shukra kshaya*. All drugs are *Shukrala* (semen enhancing) described

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in *samhitas*. All dravyas except *Ashvagandha* are *soumya dravya* and *shukra* promoters. *Anupana* milk is also *shukrala* and promotes *shukra*, because milk is *madhura* and *snigdha*. As per Modern science mostly drugs are antioxidant, anti-sterility, Aphrodisiac and increase the quality & viability of sperm ^[17].

RESULT AND OBSERVATION-

Studies indicate that there are so many safe *ayurvedic* medicines to combat oligozoospermia. Also provides rejuvenatory effect and exerts positive influence on vital ailments of body.

DISCUSSION & CONCLUSION-

The results of research articles are very encouraging which reveals other potential therapeutic effects. According to *Guna Karma* of *Ashvagandha*, due to *Snigdha Guna* (Unctuous), *Balya* (Tonic) and *Vata-Sthapana* (Anti-aging) properties of *Ashvagandha*, it directly acts as *Rasayana*, *vajikarana*. This along with *Tikta Rasa* (Bitter) and *Laghu Guna* (Light) acts on *Dhatwagni* for *Sukshma Pachana karma* (metabolism) to produce *Prakruta Sapta Dhatus* (seven primitive matter) ultimately leads to formation of potent *shukradhatu* (governing the immune system). *Shweta*

Musli (also known as asparagus) are used as an aphrodisiac. *Shweta Musli* is primarily used as a tonic to rejuvenate the reproductive system. As it is very rich in glycosides, it works very well in curing impotency and low sperm count. *Kawach* possesses *Snigdha Guna* (Unctuous), *Balya* (Tonic) and *Vata-Sthapana* (Anti-aging) properties giving strength to *dhatu*s. *Shilajit* is an excellent restorative and rejuvenating tonic, it ensures good physical performance for the individual and leads to balanced and harmonious health. *Gokshura* has *Madhura rasa* (sweet), *Guru* and *Snigdha guna* (unctuous and heavy quality), *Sheeta Virya* (Cold in Potency), *Vrishya* (Aphrodisiac), *Rasayana* (Rejuvenator), *Brimhana* (Nourishing therapy), and *Vatapittahara* properties. However, *Madhura Rasa*, *Snigdha*, and *Guru Guna* increase the *Shukra Dhatu* qualitatively and quantitatively. It exerts action on the *Shukra* also, along the lines similar to how *Shukra Visarga* is governed by *Apana Vata*. Protodioscin found in *Gokshura* is a potent natural precursor of the testosterone enhancer. It also increases the production of Testosterone and luteinizing hormone (LH). When the LH levels are increased, the natural production of testosterone also increases. LH has been used to increase fertility and helps to relieve impotence. Action of *vanga bhasma* is as follows. *Vanga bhasma* given with milk mitigates

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pitta and *vata*. *Ksheenashukra* is a resultant of vitiated *vata* & *pitta*. Hence *vanga bhasma* & milk is the best remedy for *ksheena shukra*, which enhances the quality & quantity of shukra.

Shilajit exhibits antioxidant, anti-inflammatory, adaptogenic, immunomodulatory, and antidyslipidemic properties, with enhanced production of ATP (Adenosine triphosphate). *Shilajit* boosts spermia, Enhances total sperm count, Improves semen motility. The clinical trial of efficacy of ayurvedic medicines on oligozoospermia against modern medicines should also be conducted.

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