

ROLE OF KARAPAS BEEJ IN SHUKRAALPATA W.S.R. TO OLIGOSPERMIA

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ABSTRACT

The vital and the best known extract *Dhatu* of our body.i.e shukra dhatu nourished by the *Ahara* taken.it is very important to maintain the level of *this dhatu*, *its imbalance causes shukraplpta* or *Shukrakshaya* which is considered as a semen insufficiency. *Panduta (Pallor)*, *Shrama (Fatigue)*, *Mukhashosha* (Excessive feeling of thirst), *Timira Darshana* (Black-outs), *Medhra-Vrishana Vedana* (Pain in scrotum & penis), *Daurbalya* (Generalized weakness), *Medhra Dhumayana* (Burning sensation in penis & urethra), *Chirat Praseka* (Delayed ejaculation), *Alpa Rakta-yukta Shukra Pravritti* (Blood mixed ejaculation), *Agnisaada* (Decreased digesting capacity), *Shukra Avisarga* (Absence of ejaculation), *Rati Anabhimukhata* (Loss of libido) and *Maithune Ashakti* (Problematic or not satisfactory coitus)

are described as the main symptoms of *Shukraalpata* in *Ayurveda* classics. *Shukraaplta* can closely be comparable with Oligospermia. Oligospermia is disorder of male reproductive system caused by low sperm concentration. Oligospermia seems part of shukra dhatu which is closely correlated with shukra dhatukshay but not the identically same. Drug possessing similar properties of a *Dhatu* can nourish that particular *Dhatu* early & effectively than others in the presence of *Deep Paachan* drugs. As mentioned in ayurveda principles. Present study carried out by using an *karpas beej* in the diagnosed cases of *Shukra Dhatu Kshaya*.

INTRODUCTION

The vital and the best known extract *Dhatu* of our body.i.e shukra dhatu nourished by the *Ahara* taken. It is very important to maintain the level of *this dhatu,its imbalance causes shukraplta* or *Shukrakshaya* which is considered as a semen insufficiency.^[1] *Panduta* (Pallor), *Shrama* (Fatigue), *Mukhashosha* (Excessive feeling of thirst), *Timira Darshana* (Black-outs), *Medhra-Vrishana Vedana* (Pain in scrotum & penis), *Daurbalya* (Generalized weakness), *Medhra Dhumayana* (Burning sensation in penis & urethra), *Chirat Praseka* (Delayed ejaculation), *Alpa Rakta-yukta Shukra Pravritti* (Blood mixed ejaculation), *Agnisaada* (Decreased digesting capacity), *Shukra Avisarga* (Absence of ejaculation), *Rati Anabhimukhata* (Loss of libido) and *Maithune Ashakti* (Problematic or not satisfactory coitus) are described as the main symptoms of *Shukraalpata* in *Ayurveda* classics. *Shukraaplta* can closely be comparable with Oligospermia.

Primary infertility is infertility in a couple who have never a child. Secondary infertility is failure to conceive following a previous pregnancy. Infertility may be caused by infection in the man or women. Male infertility is most commonly due to deficiencies in the semen and semen quality is used as a surrogate measure of male fecundity. Oligospermia, Asthenozoospermia, Azoospermia, Teratozoospermia. Oligospermia is one among the prime factor in the male infertility and it is defined as subnormal concentration of spermatozoa in the penile ejaculate. According to WHO the guidelines on semen analysis, Oligospermia is the condition where the sperm count is less than 20 million/ml. According to *Ayurveda*, infertility exists when a healthy couple is unable to achieve a pregnancy after two or more years or fail to conceive for several years after the first delivery. To have an offspring is a dream of every married couple. *Ayurveda* is not only a medical science of life that gives guidelines for a successful healthy life. *Arogya* is described as the root for *chaturvidh purushartha* i.e. four main goals of life to be achieved by every person. *Ayurveda* is one such approach, as it takes a holistic path to address both the mental and physiological aspects of infertility. For both men and women, reproductive health depends on the health of their reproductive tissues. In traditional *ayurvedic* medicine, experts use a combination of *dravya* to restore both physical and emotional wellbeing in an effort to boost fertility levels by influencing reproductive hormones. Semen is white, liquid, sweet in taste, look like colour of honey or oil. The treatment of oligospermia comprises of *Vajikaran* and *Rasayan dravyas* or medicines internally. *Shodhan* and *Vajikaran* therapies for detoxification and rejuvenation

along with diet and lifestyle modification will not only help in better conception but also in producing healthy offspring.

AIMS AND OBJECTIVE

1. To understand the condition of *Shukra Dhatu Kshaya*
2. To understand the condition of *oligospermia*.
3. To evaluate the Role of *karpasbeej* in *shukraplta*.

AYURVEDIC REVIEW

Shukradhatu: *Shukra* is considered as the terminal essence (*sara*) of all the tissue elements (*dhatu*).

Vyutpatti: *Shukra* is white pure excellent *dhatu* of all.

Origine of word *shukra*

Origine of word *Shukra* in sanskrit is from root *suk soce* which means cleanliness.

Nirukti: *Retas*- The substance which comes out during coitus. According to ayurveda, *Shukra dhatu* is the terminal element of the body. *Shukra dhatu* is considered as the *sara* of all the *dhatu*s.

Paryay: *Retas, tejaha, veeryam, beejam, indriyam* are the *paryayas* for *Shukra dhatu*. (amar-6/2/62)

Shukravaha strotas

Charak has mentioned that *Shukravaha strotas* *sthan* is *vrushano* and *shephach*. According to *sushrut sthano* and *vrushno*. According to *sharangdhar viryavahishira* and *vrushn* are the main *sthan* of *Shukravaha strotas*. In male two *vrushan* means testis, two *adhiprishanika* means epididymis, two *shunkra vahini* means vas deference, two *Shukra prapika* means seminal vesicles and *medhra* means penis to form the system of *Shukravaha strotas*.

Shukradhara kala and shukradhatu vyaktikaran

Seven folds are formed and deposited on the rapidly transforming product of the combination of *sukra* (semen) and *sonata* (fertilized ovum) which have been thus charged the individual soul or self in the same manner as layers (of cream) are formed and deposited on the surface of (boiling)milk. The seventh *kala* is called *sukradhara laka* (semen-bearing), which extends throughout the entire body of all living creatures.^[2] The fat like (*sarpi*) in the milk or sugar in

the expressed juice of sugarcane, the (seat) of semen is coextensive with the whole organism of a man (animal).

Physical characteristics of semen

Shukra is cool.^[3] *Sphatikabham*- crystalline, *dravam*- liquid, *snigdha*-oily, *madhura*-sweet in taste, *madhugandhika*-smell honey, *Tailamkshaudramnibham*-colour of oil or honey.^[4] *Picchiila*- unctuous, *bahal*- thick, *avisra*- absence of bad smell, *Shukla*- white in colour^[5] *sara*- mobile, *Sandra*-dense, *ambasi kinchit majjati*-which deep into water. Such semen is supposed to be fertile. Extreme unctuousness is its chief property of *Shukradhatu*, which is capable of offering strength to the body.

Principal functions of shukra

Garbhotpadana- Reproduce

Dhairyam- It gives courage to a person

Chyavan- It gets ejaculates smoothly during intercourse

Dehbalam- It gives strength to the body.

Harsha- It arouses a man for reproduction.

Preeti- It creates softness in the mind.

Physiological measure of *shukradhatu* (praman)

Shukra dhatu measures half *Anjali* (1/2).^[6] *Charak* mentions that *oja*, *Kapha* and *Shukra dhatu* measures same.

Shukra dushti

Causes of *Shukra dushti* are

- Having sex in menstrual days.
- More frequency of having sex
- Injury to vas difference due to use of *shatrapa*, *kshara* and *agnikarma*.

Excessive coitus, exercise, improper dietary habits, untimely coitus, nonvaginal sex, strict abstinence. Excessive intake of dry, hot, astringent, bitter, salty, and sour food items. Ignorance about taste of woman, old age, anxiety, grief, suspicious attitude, injury to genital organs, fear, anger, emaciation caused by disease, suppression of urge, wound and morbid affection of *dhatu*s are the reason of *Shukra dushti*.

Types of sukra dushti

Acharya charak in *yonivyapad adhyay* of *chikitsasthana* mentions that there are eight types of *Shukra dushti*.

These are

- *Fenilam*- frothy
- *Tanu*- dilute
- *Ruksha*-dry
- *Vivarno*- discoloration
- *Puti*-bad smell
- *Picchilam*- unctuous
- *Anyadhatu upsanshrushtam*-mixed with blood or— other dhathus.
- *Avasaaditam*- less mobile

Charaka mentioned these eight types in *sutrasthana* also but instead of *Ruksha* he mentioned *Shushka*, instead of *vivarna*- *ashwet*.

DIESEASED REVIEW

Shukra alpata

Means the reduction in the quality or quantity of the *Shukradhatu* or hampered production. Those persons who are suffering from grief, anger, fear, excessive mental work, envy, curiosity, agitation, excessive use of dry foods and drugs specially by emaciated and debilitated persons, do suffer from *lakshanas* of *Shukraalpta*. Improper dietary habits leads to diminished formation of *ras dhatu* further leads to reduction in *rakt dhatu* thus ending in the reduction of *Shukra dhatu*. In this state of reduced *Shukra dhatu* if a person goes on having excessive sex he may fell prey to some diseases like *yakshma* or even death. Hence one who desires good health should particularly protect *Shukra*.

In *chikitsasthana*, *acharya Charak* also mentions that *Shukra* get diminished by old age, anxiety, heavy work and excessive sexual indulgence.

The causes of Shukra dhatu kshay can be broadly described as

1. Being a *Shukra dushti*, *Shukra dushtikar aaharas* and *viharas* can be considered as the primary cause.
2. *Shukra* is *sara* of *sapta dhatus*, so the factors which make the *kshay* of *dhatus* can be considered in the *hetus*.

3. The factors which leads to the *Shukravaha strotas dushti* palys an important role in producing *kshin Shukra*.
4. The doshas involved in *shukraalpta* are *Vata* and *Pitta* so the causes for vitiation of *Vata* and *Pitta* doshas can be taken into account.
5. The diseases such as *sthaulya*, *prameha* etc predispose to *Shukraalpta*. Thus, these types of *nidanarthkar vyadhis* are also included in the aetiology.
6. The consumption of drugs like *kshara*, *lavana* etc can lead to *Shukralpta*.

Samprati

There are two ways to explain the *samprapti* of *Shukrakshinta*.

1. ***Dhatukshinata***- The various types of *hetu* sevan reduces the quality or may cause an adverse effect on first and chief *dhatu* that is *ras dhatu*. It causes the diminishing of *ras dhatu* transforming into other *dhatu*s and ending with *Shukra* leading to *Shukrakshinata*.
2. ***Shukravah strotas dushti***- Various *hetu sevan* leads to *doshdushti*. *dushita dosh* after reaching *Shukravah strotas* causes defect in *Shukra* and blocks the passage which further leads to defective spermatogenesis and *Shukrasanhita* occurs.

Lakshanas

Weakness, dryness of mouth, anemia, bodypain, exhaustion, impotence, delayed seminal ejaculation. Sushrut says *Shukrakshay lakshanas* include pain in penis, burning sensation in penile region, pricking sensation in scrotum during sexual intercourse or semen ejaculation with blood.

Samanya chikitsa

Vajikarn: In *Shukra khsay* we can do *snehan*, *swedan* and then only should give *sneha* mixed with food. *Ghee*, aphrodisiac and *rasayan* formulation, *yapana basti* should be used. In *Shukra kshay vajikaran aushad* formulation which— are easy to use and beneficial, are used to treat *raktaalpta* and *yonivyapad*.

In *Vataj Shukra*- *Dushtiniruha* and *anuwasana basti* are advised.

In *Pittaj dushti*- *Rasayan* formulation given in *abhayaamlaki adhyay* are recommended.

In *Kaphaj Shukra dushti*- *Rasayan* formulations of *pippali*, *amrita* and *lohtriphala* are used. *Jivaniy ghruta*, *chyavanprash* and use of *shilajatu* is also beneficial. The semen accompanied by other *dhatu*s after examination should be treated properly for *doshas* as well as *dhatu*

concerned according to morbidity. *Ghee, milk, meat soup, Sali rice, barley, wheat and shashthika*, particular use of *basti* is beneficial in *Shukradushti*.

Pathya- to do Ahar vihar

- *Snigdh, madhur rasatmak*
- Easy to digest
- High protein diet
- *Swasthvrutta palan*
- *Bramhaharya palan*

Apathya- not to do

- *Ruksha, katu and kashay rasatmak ahar* should be— avoided.
- Heavy diet
- *Vegavrodha*
- Exposure to heat radiation
- Prolonged sitting in hot baths
- Skin tight underwear
- Smoking, tobacco, alcohol, drug addiction.

Shukrakshaya or oligospermia

The *Shukraalpata* have different meanings. It may be undertaken as low volume of ejaculated or low sperm count. While describing about *Shukra* and *artava*, *vagbhatacharya* explained *Shukraalpata* as the condition caused by vitiated *Vata* and *Pitta* '*alpatam maruta Pitta*'. Oligospermia means the semen with a low concentration of sperm and is a common finding in male infertility. Often semen with decreased sperm concentration may also show significant abnormalities in sperm morphology and motility. WHO described in 1992 the condition as the one in which total sperm count will be less than 20 million/ml.

Diagnosis

The time-honoured method of evaluating male infertility has been the semen analysis extensive variation in normal semen values will be encountered both among individual and among individual samples taken from particular patients therefore, it is necessary to perform several semen studies before a definitive diagnosed is stated. Oligospermia should be confirmed only after investigation more than 2 occasion with a minimum of 2 weeks interval.

Causes of oligospermia

Several conditions and lifestyle factors can increase a man's risk for oligospermia. Varicocele Enlargement veins in a man's scrotum can disturb blood flow to the testicles. This can cause the temperature in the testicles to increase. Any increase in temperature can negatively impact sperm production. About 40% of men with low sperm numbers or low sperm quality count have this common issue.

Infection

Sexually transmitted infections can reduce the sperm amount in semen infection like mumps, orchitis, syphilis, non-specific urethritis, after pubertal period, may permanently arrest spermatogenesis. Orchitis, mumps arrests maturation process and also arrests the androgenic function of Leydig cells. Systemic infection like bacterial also affects the sperm count. Chlamydia trachomatis or mycoplasma infection leads to defective spermatogenesis.

Thermal

The scrotal temperature should be less than 2°F from the core body temperature. Raised scrotal temperature may depress the spermatogenesis because it is a sensitive process, which alters with alternations in temperature. Men working in a hot environment such as near a furnace, near large engines, mines, cook, also show impaired spermatogenesis. Tight wearing undergarments, frequent hot baths has an adverse effect.

Congenital

1. Cryptorchidism or congenital mal-position or undescended testis an incidence is one among the causes of poor semen quality. It causes permanent damage of testis. They are also hormonally defective. Unilateral cryptorchidism even when corrected prior to puberty is associated with abnormal semen in many males (Harrison 1994).
2. Kartagener syndrome (autosomal disease) - There is loss of ciliary function and motility.
3. Hypospadias- Failure to deposit of sperm high vagina.
 - Testicular failure due to gonadotrophin deficiency. (Kallmann's syndrome) is rare.
 - FSH level is raised in idiopathic testicular failure with germ cell hypoplasia (Sertoli-cell-only-syndrome).
 - Hyperprolactinaemia is associated with impotence.

Genetic

Common chromosomal abnormality in azoospermic male is klinefelters syndrome (47XXY). Gene deletion have been detected in the long arm of Y chromosome (Yq) for patients with severe oligospermia.

Nutrition

Nutrition is important in normal spermatogenesis. Protein deficiency definitely results in impaired spermatogenesis.

Metabolic disorders

The main metabolic disorder is diabetes- it gives rise to oligospermia, retrograde ejaculation and impotency.

Iatrogenic

Radiation, cytotoxic drugs, nitrofurantoin, cimetidine, β blockers, antihypertensive, anticonvulsant and antidepressant drugs are likely to hinder spermatogenesis leads to oligospermia. Surgical operation which have been done improperly urethral stricture or diverticulum, proctectomy may cause defective spermatogenesis.

DRUG REVIEW**Sanskrit synonyms**

Karpasi, Tundikeri

Samdranta – Commonly found in beaches

Chemical composition^[7]**Cotton plant chemical composition**

Root- Hemigosypol, Quercimetittrin(flowers)

Seed- Gossypol

Essential oil - Caryophyllene, Pinene, Limonene

(Reference: Illustrated Dravyaguna Vijnana, Vol. II, by Dr JLN Shastry)

Gossypin has analgesic and anti inflammatory properties.

Classical categorization

Charaka – Brimhaneeya – Strength and bulk promoting group of herbs

Sushruta – Vata Samshamana – Vata pacifying group of herbs

Bhava Prakasha Nighantu – *Purva Khanda*, *Mishra Prakarana*, *Guduchyadi Varga*

Raja Nighantu – Shatahvadi Varga

Cotton seed

Quality- *Snigdha* – Oily, unctuous

Vipaka – *Madhura* – Undergoes sweet taste conversion after digestion

Veerya – *Sheeta* – coolant

Kaphakara – increases *Kapha Dosha*.

Prabhava – Seed – *Vrushya*

Effect of *karpas beej* on oligospermia

Karpas (*Gossypium herbaceum*.Linn.) is a herb from Malvaceae family. It occurs in all parts of India. Seeds of it contain an active principle gossypol.

Pharmacodynamically it is having *snigdha, madhur vipak, veerya sheeta, kaphakara and vrushya prabhava*.

Part used, dosage

Part used- Root, flower, seed

Dosage- Decoction 50-100 ml, seed powder 3-6 g

Properties and action of seed

Snehan, sanstran, vibandha, paravahika, balya, stanya, vrushya, vajikaran.

Seed is Vatanashini – Useful in treating disorders of Vata Dosha imbalance such as neuralgia, paralysis, constipation, bloating, etc.

Seeds promote lactation

Indicated in –

Shrama – tiredness, fatigue

Bhranti – dizziness, insanity

Murcha – fainting, loss of consciousness

Hrudbala karini – cardiac tonic.

Uses of Seed

Internal application – *karpas beej churn* is used in diseases like *Unamad, apsmar, samanya dorbalya and dhattur poisoning*.

External application

Seed paste is applied externally to treat inflammation, pain, poisonous bites, wounds and ulcers.

Oil prepared with seed is used in treating headache.

Therupatic uses -Paralysis, facial palsy, spondylosis & other neuro-muscular, anti aging, aphrodisiac, fever, pneumonia, cough, cold, skin disorders.

Probable mode of action of karpas beej in oligopermia

Karpas beej having predominancy of *snigdha guna*, *madhur vipak* and *sheet virya*. Due to predominance of *madhur vipak* and *sheet virya* it act as *pita shamak*, and *madhur vipak*, *snigdha guna* act as *vatshamak*. It has properties like *vrushya*, *vajikaran* with the help of this it can increases *shukra*. *Shukra Dhatu* is *Saumya*, oil-honey coloured, *Shubhra* (white), *Sphatikasannibha* (crystalline), *Drava* (Fluid) *Madhur* (Sweet in taste), *Avidahi* (Cool), *Snigdha* (smooth), *Pichhila* (Slimy) and *Bahala* (abundant). *Karpas beej* having similar properties like *shukra dhatu* i.e. *snighdh gun*, *madhur vipak* and *sheet virya*. *Rasa Dhatu*, *Mansa Dhatu*, *Meda Dhatu*, *Majja Dhatu*, *Shukra Dhatu* and *Kapha Dosha* have *Ashray-Ashrayi Bhava* in between them. So *Shukra Dhatu* has close relationship with *Kapha dosha*. *karpas beej* is *vatpittashamak* and *kaphakar* in property. so it can increases *shukra dhatu*.

DISCUSSION

Ksheena Shukra is *Dosha Bala Pravrutta*, *Kruchra Sadhya Roga* of *Shukra vaha Srotas*. It is understood that *Vata* and *Pitta Dosha* are responsible for this condition. So, for the management of *Ksheena Shukra*, *Vrishaya Padartha* or *Shukra Vardhaka* or *Shukrala* drugs enriched with *Madhura Rasa*, *Sheeta Virya* and *Guru – Snigdha guna* and highly potentiated with *Balya*, *Vrishaya* and *Rasayana* properties should be used. *Karpas beej* is *guru*, *snigdha* in *guna*; *Sheeta* in *Veerya*; *Madhura* in *Vipaka* and mainly *Vata Pitta Shamaka*. They are having all the *shukrala* properties and are having qualities similar to that of *Shukra*. *Karpas* is *balya*, *Vrishaya* and having *rasayana* properties.

CONCLUSION

1. *Shukra Dhatu Kshaya* caused beacused of *Vitiated Vata* and *Pitta Dosha*, it initiates the quantitative and qualitative defect in seminal parameters.
2. Low volume of ejaculate or low sperm count or low serum testosterone levels is nothing but *Shukra Dhatu Kshaya*

3. *Karpas beej* in the dosage of 5-6 grams twice with the *Anupana* of sugar added cow's milk given orally can be a safe therapeutic agent in the management of *Shukra Dhatu Kshaya* or Oligospermia

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