

A Conceptual Study of Ksheenshukra w.s.r to Oligozoospermia .

^{1,2}Dr.Shubhada Hake, Dr Prachi Prabhukhanolkar , ³Dr. Prashant Dalvi,

Assitant Professor ,Phd Scholar, R A Podar Medical (AYU) College, Worli Mumbai 18.

Associate Professor ,Phd Scholar, R A Podar Medical (AYU) College, Worli Mumbai 18.

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ABSTRACT: Oligospermia is one of the major factor in the male infertility and it is defined as a subnormal concentration of spermatozoa in the penile ejaculate i.e. less than 20 million/ml. The condition Oligospermia can be well corelated with Ksheena Shukra in Ayurveda Samhitas. In Ayurvedic classics, Acharyaas mentioned regarding four Purushaarthaas i.e. Dharma, Artha, Kaama and Moksha. Kaama, the desire, is also related with sexual gratification, which is one of the happiness in the life and to create a healthy progeny. So fertility is an existential necessity from the time immemorial. The essential factors of conception are Ritu (reproductive age and ovulation period), Kshetra (female reproductive system), Ambu (nutritional factors) and Beeja (sperm and ovum)¹. Any malfunction of these factors may lead to infertility. Charaka compares the man who is incapable of procreation as shadow less, single branched, foul smelling tree devoid of fruits that has no purpose or plays no role in the world². The ambition or aim of a person is that to propagate his legacy through his progenies. Infertility makes the man incapable for this. Ayurvedic classics have mentioned that, the function of Shukra Dhaatu is reproduction³. There are eight types of Shukradusti mentioned in Ayurveda classics⁴. A person having Shukradusti is unable to fulfill his Chaturvidha Purushaartha. Ksheena Shukra is one type of Shukradusti. It is Vaata Pittaja Vyadhi, manifested as a result of Shukravaha Srotodusti, being a disease from Apaana Vaata dushti, in which decreased quality and quantity of Shukra Dhaatu is observed, hencforth leading to male infertility .

KEYWORDS: Ksheenshukra , Shukradushti, Oligoozospermia, Nidanpanhak, Chikitsa .

INTRODUCTION

Infertility is defined as a failure to conceive within one or more years of unprotected coitus⁵. Oligospermia is one among the prime

factor in the male infertility and it is defined as a subnormal concentration of spermatozoa in the penile ejaculate⁶. According to WHO guidelines on semen analysis, Oligospermia/Oligozoospermia is the condition where the sperm concentration is less than 20 millions/milliliter⁷. The condition Oligospermia can be corelated with Ksheena Shukra in Ayurveda. Shukra Dhaatu is quantitatively and qualitatively vitiates in Ksheena Shukra and in Oligospermia there is quantitative reduction of sperms. According to Charaka, Ksheena Shukra and Shukra Kshaya are one and the same whereas according to Sushruta and Vaagbhata, it is one among the Shukra Dushti in which Vaata and Pitta are Vitiated⁸. Ativyayaaya, Ati Ruksha-Laghu-Ushna Aahaaras, Chinta, Shoka etc are are considered as the Nidaan⁹ and Dourbalya, Mukhasosha, Paandutwa, Sadana, Shrama, Klaibya etc. are the Lakshanaas of Ksheena Shukra¹⁰. Recent statistical data shows nearly one among the six couples in the world are suffering from infertility¹¹. Incidence of male infertility varies from 30-40%¹². Among these, 30% of the male infertility is due to the factors like Oligospermia, Asthenozoospermia, Azoospermia, Teratozoospermia etc¹³.

Ayurveda, the holistic medicine describes potent drugs and efficient therapctic procedures to face the problem of infertility. Vaajikarana, the eighth branch of Ayurveda mainly deals with the drugs and therapeutics which are aphrodisiacs in nature. It provides progeny to infertile couple, potency to the impotent, at the same time excellence of progeny with suitable therapeutic measures.

HISTORICAL REVIEW:

VEDAAS: In Atharvaveda, the description about Guhya Shukra and Sthula Shukra explained. The definition of Vajikarana Tantra, the drug useful in the treatment of impotency and sterility etc. are also mentioned.

BRAHMANAAS AND UPANISHAD:

In Taittiriya Aranyaka Upanishad, the process of Garbhotpatti, nature and qualities of Shukra had been mentioned. Two functions, Retotsarjana (Shukra Visarjana) and Mutra Visarjana of penis have also been explained. Shukra Visarjana indicates the release of Amrita or Sanjeevaka Rasa i.e. Shukra.

RAAMAAYANA AND MAHAABHAARATA:

Some indirect references about Shukra Kshaya condition and its treatment by Vaajikarana are found in Raamayana and Mahaabhaarata literatures.

KAAMASOOTRA: Vatsyaayana explained that the absence of affection between the partners causes qualitative or quantitative vitiation of Shukra. According to Yashodhara “Veeryam Alpam” means either reduced activity or reduction of “Shukra”. Commentator Yashodhara believes that reproduction is impossible without Shukra.

CHARAKA SAMHITA Charaka has mentioned Shukra Dhaatu Kshaya Lakshana in Sutrasthaana¹⁴ and its Chikitsa in Shaarira Sthaana¹⁵. He has indicated Nidaanans of Shukra Kshaya in Vaajikarana Adhyaaya.

SUSHRUTA SAMHITA-While giving the definition of Vaajikarana Tantra, Sushruta has used the word Ksheena Retas¹⁶. He has considered Ksheena Shukra as one type of Shukra Dusti. Here he has explained Doshic involvement in Ksheena – Shukra. Upachaya is the main treatment for Ksheena Shukra. Shukra Dosh occurs due to Vyaana and Apaana Vaayu Prakopa.¹⁷

ASHTAANGA SAMGRAHA -Ksheena Shukra Lakshanas and Chikitsa have been described in Sutra Sthaana¹⁸. He explained that the vitiated Vaata and Pitta Doshaas are responsible for Ksheena Shukra and mentioned its management.

ASHTAANGA HRIDAYA -Ksheena Shukra Lakshanas have been mentioned in Sutrasthaana¹⁹. Shukra Karikriyaas have been advised for Ksheena Shukra²⁰. Ksheena Retas occurs due to vitiation of Maaruta and Pitta²¹. Various Vaajikarana Yogaas have been mentioned in Uttara Sthaana.²²

KAASHYAPA SAMHITA -. He has indicated its management in Jaatisutriya Shaarira Adhyaaya²³. Shukra Janana Karma of Lasuna has been mentioned in Lusuna Kalpa Adhyaaya²⁴.

BHELA SAMHITA -Seven types of Shukra Dosh and One Anjali Pramaana of Shukra has been explained in Bhela Samhita. Excessive indulgence in Maithuna leads to Ksheena Shukra.

HAARITA SAMHITA - In Haarita Samhita specific Pathyapathya has been mentioned for Shukra Kshaya

MAADHAV NIDAANA -In Parishishta Adhyaya, Madhavkara has described eight types of Shukra Doshas and Shuddha Shukra Lakshanaas.²⁵

SHARANGADHARA SAMHITA -Ksheena Shukra occurs due to vitiated Vaata Dosh²⁶. Shaarangadhara has indicated the particular definition along with the appropriate examples of Vajikarana, Shukrala, Shukra – Utpaadaka, Shukra – Pravartaka, Shukra Rechana, Shukra Stambhanaand Shukra Shoshana drugs.

BHAAVAPRAKASHA -In Bhaavapraksaha, Shukra Kshaya Lakshnas has been explained along with proper examples of Vaajikarana, Shukrala, Veerya Janaka – Veerya Pravartaka has been mentioned. Vaajikarana Adhyaaya has been mentioned separately in Uttarakhanda.

YOGARATNAAKARA-Importance of Shukra has been indicated in this book. Various VaajikaranaYogaas and dietary articles have been described in the management of Ksheena Shukra.²⁷

VYUTPATTI OF KSHEENA SHUKRA

The term Ksheena is derived from “Kshi + Kla”. This has got the meanings like Sukshma, Abala, Durbala, Kshaama and Tanu. The word Shukra is derived from the Sanskrit root “Suc-Klede”. It means purity. Literally Shukra means one, which is in pure state, bright and white.

Nirukti of Ksheena Shukra According to Ayurvediya Sabdakosha, Here the “Maana” refers to the quantity or amount. The condition in which the Maana of the Retas i.e. Shukra will be Alpa is termed as Ksheena Shukra. This can be interpreted as reduction in the sperm count or quantity of sperm.

Paryayas of Ksheena Shukra -Sushrutha and Vaaghata used the term “Ksheena Retas”⁴ as synonym.

Derivation of the term Oligospermia or Oligozoospermia

The term Oligospermia is derived from Oligo + sperm + ia. i.e. “Oligo” means “less”, “sperm” means “spermatozoa”, “ia” indicates a condition or a disease, where less sperm count is present.

The term Oligozoospermia is a combination of four words Oligo– zoo – sperm – ia. Here “Oligo” represents “Less”, “zoo” represents “animals”, “sperm” represents “spermatozoa” and “ia” indicates a condition or a disease. i.e. an individual having less sperm count. It can be interpreted as

“Less spermatozoa”, i.e. a conditions were there is a subnormal spermatozoa in semen.²⁸

Definition of the term Oligospermia or Oligozoospermia

According to the Stedman, it is considered as the subnormal concentration of the spermatozoa in the penile ejaculate. Whereas WHO defined, the condition where the sperm concentration is less than 20 millions/milliliter²⁹.

Synonyms²⁸ Oligospermia ,Oligozoospermia

NIDAANA of Ksheena Shukra

Sushruta and Vaagbhata explained that, Vaata and Pitta are two factors which are involved in the causation of Ksheena Shukra. Vaata and Pitta Prakopaka Hetus, Saamaanya Dhaatukshaya Kaarana and Shukra Kshaya Kaarana are explained in various classics for Ksheena Shukra. These Nidaanaas can be classified as follows.

- 1)-Saamaanya Nidaana of Ksheena Shukra
- 2)-Vishishta Nidaana of Ksheena Shukra

1) Saamaanya Nidaanas of Ksheena Shukra

Vaata Prakopaka Ahaara: Ruksha-Shita-Alpa-Laghu Gunayukta Anna Sevana, Abhojana, Katu-tikta- Kashaya Rasa Atisevana are mentioned as Vaata Prakopaka Ahaara.

a) Vaata Prakopaka Vihaara: Ativyavaaya (excessive sexual intercourse), Prajaagarana (excess walking), Langhana (fasting), Atiplavana (excess swimming), Atiadhva (excess work), Ati Vyayama (excessive exercise), Krodha (Anger) , Vega Vidhaarana (suppression of natural urges), Dukha Shayyasana (improper sleeping and sittingposition), Rogakarshita (suffering from other diseases), Abhighaata, Marmaabhighaata (injury to vital parts), Gajaadi Shigrayana – Patanaat (travelling in high speed on elephant or falling off from it), Atisamshodhan (Purification of body in excessive form).

b) Pitta Prakopaka Ahaara: Katu-Amla-Tikshna-Ushna-Laghu-Anna Sevana. (pungent, sour, salty, hot, light. diet), intake of Tila Taila (Sesame oil), Kulattha (Black gram), Sarshapa (Mustard), Atasi, Shaaka (Green vegetable), Matsya (fish), Maamsa (Non Veg - meat), Dadhi (curd), Takra (buter milk), Souviraka (alcohol), Amla Phala (sour fruit intake) are explained under the heading of Pitta Prakopaka Ahaara.

c)Pitta Prakopaka Vihaara: Upavasa (Fasting), Chinta (Worry), Krodha (anger), Bhaya (Fear),

Shoka (grief), Ayaasa (Fatigue ness), Ati Maithuna (excessive coitus) etc.

d)Sarvadosha Prakopaka Ahaara: Amla (sour), Lavana (salty), Katu, Kshaara (alkali), Shushka Maamsa (Dry meat) Sevana, Tila (seasum), Palala (meat), Pishtanna (flours) Bhojana. Shushka (dry), Viruddha (unwholesome), Asatmya (incompatible) , Ruksha (dry), Abhishyandi, Klinna, Guru (heavy), Puti (putrid) – Ahara Sevana, Vishamaashana and Adhyashana (irregular timings and excess quantity of food) are mentioned as

e)Sarvadoshprakopaka Vihaara: Divaasvapna (day sleep), Nitya Stri Sevana and Madya Sevana (regular Sexual intercourse and wine addictions), Vishama – Atimaatra Vyaayaama (faulty and excessive exercise) are explained as Sarva Dosha Prakopaka Vihaara.

Vishishta Nidana of Ksheena Shukra³⁰

Ativyavaaya and Ativyayaama – excessive sexual intercourse and exercise.

Asaatmya Ahaara sevana – intake of incompatible food.

Akala Maidhuna – untimely sexual intercourse.

Ayoni Maidhuna – coitus through any other way ie. unnatural.

Amaidhuna – No sexual intercourse for long time.

Intake of food which is having more Tikta, Kashaaya, Lavana and Amla Rasas, Rooksha Guna and Ushna Veerya.

Naarinaam Arasajnaanam - Sexual intercourse with a woman who doesn't have interest towards sex.

Excessive Chinta (thinking) and Shoka (Sadness)

Atiyoga of Sastra, Kshaara and Agni Karma.

Bhaya (Fear), Krodha (Anger) and Abhichaara Karma (black magic).

Vyadhi Karshana (Other diseases)

Vegadhaarana – Suppression of urges.

Kshata – injury. (Injury to Vitapa Marma causes Alpa Shukrata)⁹

These are mentioned as the Ksheena Shukra Vishishta Nidaana

Role of Abrahmacharya.

While explaining of Trayopasthambha, Achaarya Vaagbhata describes that Abrahmacharya leads to Kshaya of Bala and Dhaatu, which finally results in Shukra Dhaatu Kshaya.

Dushi Visha

If a person consumes Dushi Visha, which is of low potency, lead to Kshaya of Shukra along with other Lakshanaas of Dushi Visha.

Nidaanaarthakara Vyaadhhis

If one disease is a cause for another disease, then it is called as Nidaanaarthakara Vyaadhi. The

diseases which are causative factors for Ksheena Shukra are listed as, Upadamsha, Shukra Dhaatugata Jwara, Pittaja

Prameha, Shukrameha, Lingaasha, Vyavaaya Shosha, Rajyakshma, Sahaja Arsha, Sthaulya, Majja Dhaatukshaya

CAUSES OF OLIGOSPERMIA

There are many causes for Oligospermia including Pretesticular as well as post testicular causes.³¹

1. Pre-testicular causes

Pre-testicular factors refer to conditions that impede adequate support of the testes and include situations of poor hormonal support and poor general health.

Drugs, alcohol, smoking-These factors can be included under various Ahaara Vihaaras which causes the Vaata and Pitta vitiation.

Strenuous riding (bicycle riding, horseback riding): Strenuous riding can be compared with the Vaata Prakopa Kaarana especially the Apaana Vaayu Vitiation occurs here.

Medications, including androgens: Drugs, Alcohol, Smoking etc due to their Teekshna and Ushna qualities they vitiate the Pitta and Vaata.

2. Testicular factors Testicular factors refer to conditions where the testes produces semen of poor quality despite adequate hormonal support and which includes the following causes:

Age-This can be compared to the Dhaatukshaya due to Jara. Here Jaraajanya Dhaatukshaya the Kshinatwa or Kshaya occurs for the Shukra.

-Genetic defects on the Y chromosome

Y chromosome micro deletions

Abnormal set of chromosomes

Klinefelter syndrome

All these Factors can be Sahaja Vyadhi because these may be due to the Beeja Dushti.

Neoplasm, e.g. seminoma-

Arbuda can be considered as the vitiation of Vata and Pitta, particularly to a site. Seminoma is painless in many occasions. So Kapha is getting more predominant (Avarodha). here than Vaata and Pitta

Cryptorchidism can be a Sahaja Vyadhi where the testis is not descended into the scrotum. Due to the increase in the temperature in the testicles, Oligospermia occurs. It can be compared to the Vitiated Pitta. Vitiated Apaana Vaata at the time of birth, may be the reason for

this which may further causes the vitiation of Pitta.

Varicocele (14% in one study)

It is a collection of dilated veins in the spermatic cord with occasional pain and discomfort.

It can be compared to the Shukravaha Srotorodha or Avarana of Apaana Vata with Rakta.

Trauma-(Kshata) It can be included under the Abhighaatajanya Ksheena Shukra

Hydrocele, Mumps, Malaria-These all can be included under the Anya Vyadhi variety.

Defects in USP26 (Beeja Dushti): USP26 is a gene and in recent researches it is found that in some of the cases the defects in this gene is the cause of Oligospermia.

3. Post-testicular causes

Post-testicular factors decrease male fertility due to conditions that affect the male genital system after testicular sperm production and include defects of the genital tract as well as problems in ejaculation:

Vas deferens obstruction-This can be compared to the Shukravaha Srotorodha. It may be due to Shukrasamari also. But this Shukrasamari formation is a Lakshana of the Shukra Vridhi. But if it gets obstructed then Shukra Dushti may occur and further it may lead to the Kshaya of the Shukra.

Lack of Vas deferens, often related to genetic markers for Cystic Fibrosis-All these Factors can be compared to Sahaja variety because these may be due to the Beeja Dushti.

Infection, e.g. Prostatitis Infections are even though considered as Tridoshic, predominance of Pitta and Vata should be considered more specifically based on the signs and symptoms of the specific infections. So the Vata and Pitta are the main Doshas which is involved in the Ksheena Shukra. Especially the Prostatic secretions mix with the semen and the Pitta and Vata vitiated in the Ashtila causes the vitiation of the Shukra after mixing with it.

Ejaculatory duct obstruction (Shukravaha Srotorodha) It can be explained as mentioned in deference obstruction.

Idiopathic Oligospermia In about 30% of infertile men no causative factor is found for their decrease in sperm concentration or quality by common clinical, instrumental, or laboratory means, and the condition is termed "idiopathic" (unexplained). A number of factors may be involved in the genesis of this condition, including age, infectious agents (such as Chlamydia trachomatis), Y chromosome micro deletions also included under testicular

factors, mitochondrial changes, environmental pollutants and "subtle" hormonal changes.

Sexual Causes(Nitya Stree Seva)

Too frequent intercourses decrease the spermatogenesis and sperm cell activity³².

Occupational causes

Environmental hazards like chemicals such as nematocide, dichloropropane, lead, microwaves and ultrasound are responsible for the disease, oligospermia. Prolonged physical exertion and sleep deprivations lower the semen testosterone level in man.³³

Systemic diseases which causes Oligospermia

AIDS lowers the degree of spermatogenesis³⁴. Renal failure and Cirrhosis of liver cause low levels of Testosterone³⁵. Some investigations revealed that Diabetes Mellitus causes low sperm count and low volumes of ejaculates in some men.³⁶. Protein deficiency and malnutrition can cause the reduced response of male accessory glands to Testosterone stimulation³⁷. Vitamin A deficiency also causes reduction in spermatogenesis³⁸. Some times after acute febrile illness, temporary decrease in sperm density occurs.

Addictions which causes Oligospermia(Nitya Madya Sevana)

Alcohol is the most important Leyding cell toxin.³⁹ As many as 80% of these men are sterile seminiferous tubes atrophy, loss of sperm or normal sperms.⁴⁰. Excessive intake of alcohol may decrease the semen quantity.⁴¹ Tobacco addicts like smokers, chewers and multiple addict will have below normal sperm count.⁴²

Iatrogenic causes(Atiyoga of Sastra, Kshaara and AgniKarma)

Surgical operations, which have been done improperly like urethral stricture or diverticulum, Prostatectomy may cause defective spermatogenesis.⁴³

Drugs which causes Oligospermia

Antibiotics like Ampiciline, Erythromycine and cephalixin causes oligospermia.⁴⁴ Spirnonolactone induces Oligospermia.⁴⁵ Cyproteroneacetate reduced the sperm count and motility⁴⁶. Antipsycotic drugs reduces sperm count.⁴⁷ Cimetidine also reduces sperm count.⁴⁸

Immunological causes

Testicular failure occurs in autoimmunity⁴⁹ in which endocrine deficiencies co -exists.

Psychological causes(Chinta, Shoka, Bhaya, Krodha)

Increased stress conditions also produce low quality of semen⁵⁰. This can be explained as the Maanasika Nidanas mentioned by our Acharyaas.

Thermal causes(P)itta Prakopaka Hetus

Scrotal temperature should be less than 2^oF from the core body temperature Raised scrotal temperature may depress the spermatogenesis because it is sensitive process, which alters with alternations in temperature. The temperature of scrotum will be raised in conditions like Vericocele, Hydrocele and Filariasis. Vericocele causes disruption in later stages of sperm maturation.⁵¹ Moreover working near hot zone and wearing of tight undergarment more than 15 hours / day may also depress the spermatogenesis leads to Oligospermia.

Environmental factors

Oestrogen in shampoos, creams, lotions⁵², Iodised salt⁵³, Octyl phenol a breakdown product of detergent used in paper, plastic, textile industry mimics oestrogen & is found in water, meat⁵⁴, Pesticides, insecticides, fungicides, in food & water.⁵⁵

Other Infections which causes Oligospermia:

Infections like Syphilis, non-specific urethritis, Mumps, Orchitis after pubertal period may permanently arrest spermatogenesis. Mumps and Orchitis arrests the maturation process and also arrest the androgenic function of leyding cells⁵⁶ systemic infections like bacterial or viral affect the sperm count. Chlamydia trachomatis or T. Mycoplasma infection lead to defective spermatogenesis.

SAMPRAAPTI:

Nidaana

-Ahaaraj,Vihaara, Maanasika, Anya Hetu sevan.

-Dhatwagnimaandya-Vaata – Pitta Prakopa-Lodges in Vrishana-Ksheenata or kshay of Shukra.

-Due to various Nidaana, the Vaata and Pitta are going to be vitiated.

-These vitiated Doshas further lodges into the Vrishana ie. the Shukravaha Srothomoola. Then, Dasha Dooshya Sammoorachana takes place in the Vrishana and leads to Ksheenaavastha of Shukra.

- Dhaatwaagnimaandya hampers the production of Shukra which may leads to the Ksheena Shukra Sampraapti Ghatakas

Dosha : Vaata, Pitta

Dhaatu : Rasa, Majja, Shukra

Srotas : Rasavaha , Majjavaha,

Shukravaha

Agni : Pachakaagni, Bhutaagni and Dhatwaagni.
 Srotodushti :Sanga
 Udbhavasthaana :Amaashaya, Pakvaashaya.
 Adhishtaana :Sarvashareera, Vrishana
 Vyaktha Sthaana :Shukra, Vrishana, Medra
 Vyadhiswabhaava:Chirakari
 Rogamaarga :Madhyama Rogamaarga

Etiopathogenesis of Oligospermia Exact pathology of the Oligospermia is still unknown. These causes may lead to the obstruction or abnormal / subnormal production of sperms or these may cause the destruction of sperms or the genetic problems lead to the less production of sperms or the hormones like Testosterone, Luteinizing hormone, F.S.H, Estrogens and Growth hormone are inefficient to work then it may directly effect on the spermatogenesis. So this subnormal/abnormal spermatogenesis leads to the Oligospermia.

POORVAROOPA

The Poorvaroopa of Ksheena Shukra has not been explained under separate heading in our classics, but the Roopaas which are in milder forms can be considered as the Poorvaroopas like Dourbalya, Pandutwa, Angamarda, Sadana etc.

PREMONITORY SYMPTOMS OF OLIGOSPERMIA

There are no premonitory symptoms mentioned for Oligospermia. When patients come with history of infertility and from further investigation, may reveal that the patients have Oligospermia.

ROOPA

Achaaryaas are mentioned various Lakshanas for the Ksheena Shukra. They are, tabulated as below.

Table 1: Lakshanaas of Ksheena Shukra according to various Achaaryaas

Acc: to Charaka	Acc: to Sushruta	Acc: to A.H	Acc: to A.S
Pandutwa	-	-	Pandutwa
-	Medra vedana	Medhra	Medhra
-	-	Dhumaayana	Dhumaayana
Shukra Avisarga	Chiraat Praseka	Chirat Praseka	Chiraat Nishevana
Dourbalya	Maidhuna Ashakti	-	Dourbalya
-	Vrishana vedana	Vrishana Toda	Mushkatoda
-	Alpa Rakta Shukra Darshanam	Sarakta Sukra Darshanam	Rakta Nishevana
Sadana	-	-	Sadana
Klaibya Shrama Mukhasosha Bhrama	-	-	Klaibya Shrama Asyasosha Angamarda

They can be classified to the Saarvadaihika Lakshans and Pratyatma Lakshanaas. Saarvadaihika Lakshanaas are the Lakshanaas which can be seen as generalized Lakshanaas, whereas the Prathyatma Lakshanaas are the specific symptoms seen in the Ksheena Shukra.

Sarvadaihika Lakshanas

Dourbalya

Due to Shukra Kshaya the Ojokshaya also occurs. This further leads to Dourbalya. Kapha Dosha and Shukra Dhatu are having the Ashraya – Ashrayi Sambandha. So that whenever Shukra Kshaya occurs there will be Kapha Kshaya

also. It is Known that Praakruta Sleshma is Bala and its Vikrutavasta is Mala. So when ever Kaphakshaya occur that time Dourbalya also takes place. Due to Dourbalya, the patient may not be able to do the work.

Shrama When he tries to do the work there will be tiredness.

Asya Shosha Dryness in the mouth is due to Kaphakshaya and Rasakshaya

Angamarda Pain all over the body is due to the Vaataprakopa which is formed as a resultant of Dhaatukshaya ie especially Shukra Kshaya.

Paandutwa -Paleness of the body is a resultant of the improper nourishment of the body due to lack of Kapha, Vaataprakopa and Pittaprakopa and due to

these vitiation, the Rasadhaatu gets vitiated which further leads to Paandu.

Sadana Feels like joints are having less strength because of the Kaphakshaya occurred.

Bhrama-Giddiness is due to the Prakopa of Vata and Pitta as well as it maybe due to the improper nourishment of the Dhaatu.

Table 2: Pratyatma Lakshanas of Ksheena Shukra and their explanation

PratyatmaLakshanaas	Explanation
Medra Vedana	Pain in the Penis due to the Vataprakopa which is occurred in the Shukravaha Srothomoola
Vrishana Vedana	Pain in the Testicles is due to the Vataprakopa which is occurred in the Shukravaha Srothomoola
Maithun Ashakti	Inability to have the sexual intercourse is due to the Shukradhatukshaya. The Ashakti is due to the Kapha Kshaya occurred as a result of the Shukra Kshaya
ChiratPraseka	Delayed ejaculation may be due to the Kshaya of the Shukra ie due to its less quantity.
Sarakta SukraDarshanam	Shukra will be mixed with the blood may be due to the reason that Shukravaha Srotas is getting dried up in the absence of
Alpa RaktaShukraDarshanam	Shukra and trying to ejaculate it during the coitus. Ultimately the Siras related to the Srotomoola may break and bleeds up which may result in the Sarakta Shukra Darshana.
Medhra Dhumaayana	Feels like fumes are coming from the Penis may be due to the involvement of Pitta, ie vitiated due to various Ahaara and Vihaara.
Klaibya	Erectile dysfunction / Impotency, directly mention that it is due to the Shukrakshaya. This may come in to consideration when the term Shukra considered as androgens.
ShukraAvisarga	No ejaculation may be due to the lack of the Shukra due to the nonproduction due to various Nidaan.

Table 3: Ksheena Shukra Lakshanas according to various classical texts.

KSHINA SHUKRA LAKSHNAS	C.S	S.S	A.S.	A.H	BH.P.	HA.SA
Daurbalya	+	-	+	-	-	-
Angamarda	+	-	-	-	-	-
Bharma	+	-	+	-	-	+
Paanduta	+	-	+	-	-	-
Sandhishula	-	-	-	-	-	+
Sadanam	+	-	+	-	-	+
Shosha	-	-	-	-	-	+
Shrama	+	-	+	-	-	-

Mukhashosha	+	-	-	-	-	-
Timira Darshana	-	-	+	-	-	-
Medhra Vedana	-	+	+	+	+	-
Vrishna Vedana	-	+	+	+	+	-
Medhra Dhumayana	-	-	+	+	-	-
Vrishna Dhumayana	-	+	-	-	-	-
Stridvesha	-	-	+	-	-	+
Klaibya	+	-	+	-	-	-
Alpachesta	-	-	-	-	-	+
Maithune ashakti	-	+	-	-	+	-
Shukra Avisarga	+	-	-	-	-	-
Chirat Praseka	-	+	+	+	+	-
Saraktayukta	-	+	+	+	-	+

Symptomatology of Oligospermia : Oligospermia condition is defined based on the sperm count ie. less than 20 millions/ml. There are no specific symptoms explained for oligospermia. The symptoms are less explained in the modern science because it may occur without any symptoms also. But some opines that there may be a slight pain in the testis and scrotum. Medra Toda and Vrishana Toda are mentioned in Ksheena Shukra also. This may be associated with tiredness (Shrama) and anemia (Pandutwa). Majority of the condition Asthenospermia (Low motility) will be there as an associated condition

BHEDA : Based on the references available in the classics for Ksheena Shukra different names are given based on the Nidaana, the same can be understood as the types of Ksheena Shukra and it is mentioned as below,

1. Jaraajanya
2. Akaalaja Dhaatukshayajanya – it is classified to 4 types as follows,

Pitta – Vaata
 Prakopajanya, Gatavaatajanya, Avaranajanya, Abhigatajanya

3. Anya Vyaadhijanya
4. Sahaja

TYPES OF OLIGOSPERMIA⁵⁷

There is no exact classification regarding the types of Oligospermia but based on the causative factors it can be classified as follows.

1. Oligospermia due to Pre-testicular causes
2. Oligospermia due to Testicular causes
3. Oligospermia due to Post-testicular causes
4. Idiopathic Oligospermia
5. Traumatic Oligospermia

UPADRAVA

Charaka explains that the person who is having Shukravaha Sroto Dushti will be having Klaibyata (Sexual dysfunction / erectile dysfunction / Impotency) and Aharshana (Loss of pleasure in the sexual activities) or the progeny will be having Klaibya, Alpaayu (Short lifespan), Virupata (disfiguration), either no conception or there will be Garbha Sraava (abortion). Thus the person afflicted with Ksheena Shukra, will be having “Apatyam” (infertility), and it will be Daaruna (misery) to his life. So all these are considered as the Upadrasvas of Ksheena Shukra. According to Sushruta’s explanation, it will cause the Klaibya, Chirat Praseka (Delayed ejaculation of Shukra), or the Shukra may comes out with Rakta.

These Upadravaas are seems to be quiet similar to the Lakshanas of Ksheena Shukra. So it may be due to the difference in Severity level of Ksheena Shukra as per views of different Achaaryas.

COMPLICATIONS OF OLIGOSPERMIA

The patients having Oligospermia land up in infertility. This is the complication occurs as a result of Oligospermia.

UPASHAYA – ANUPASHAYA

Any Oushadha, Ahaara and Vihaara either by being antagonistic to the Hetu, Vyaadhi or Hetu-Vyaadhi or by being similar to the Hetu, Vyaadhi or Hetu-Vyaadhi produces Sukhaanubandha in an individual will be called as Upashaya. Anupashaya is opposite of Upashaya.

SAADHYAASAADHYATA

Vyadhis can be classified into mainly two types based on its Saadhya and

Table 4 Saadhyaasaadhyata based on various types (classified based on pathologicalevents) of Ksheena Shukra.

1. Jaraajanya	–	Asaadhya
2. Akaalaja Dhatukshayajanya		
a. Pitta – Vaata Prakopajanya	-	Krichrasaadhya
b. Gatavaatajanya	-	Krichrasaadhya
c. Avaranajanya	-	Krichrasaadhya
d. Abhighaatajanya	-	Asaadhya
3. Anya Vyaadhijanya	-	Krichrasaadhya
4. Sahaja	-	Asaadhya

PROGNOSIS OF OLIGOSPERMIA

In the modern science, Oligospermia considered to be the one condition having the poor prognosis, as there are no medical treatments, which gives a good results. The procedures like IUI, IVF and ICSI may be giving a child to those patients who have mild grade of Oligospermia (the patients having comparatively good sperms (quality and quantity), but the quality and quantity may remain the same as there is no treatment for the person.

SAAPEKSHA NIDAANA

It is a fact that the signs and symptoms help in the diagnosis and recognition of disease.

But many times, it may be noticed that a few signs and symptoms appear in more than one disease. In such conditions to avoid any erroneous decisions in adopting treatment, the differential diagnosis can be done on the basis of the differences with respect to Nidana, Samprapti, Lakshanas etc. A wise physician can able to differentiate as soon as by using his knowledge and experience. In the present context, Ksheena Shukra (Oligospermia) is compared with other resembling disorders and an attempt has been made, for the differential diagnosis of Ksheena Shukra (Oligospermia). For this, the following diseases have been considered and tabulated below.

Table 5: Shukra Dushti according to Charaka and Sushruta

Shukra Dushti According to Charaka	Shukra Dushti According to Sushruta
Phenila -Vaata	Vaataja-Vaata
Tanu -Vaata	Pittaja -Pitta
Ruksha -Vaata	Kaphaja- Kapha
Vivarna-Pitta	Granthibhuta- Kapha Vaata

Puti -Pitta	Kunapagandhi - Rakta
Picchila -Kapha	Putipuya- Pitta Kapha
Anyadhatupasamsrishta -Rakta mainly	Ksheena- Pitta Vaata
Avasaadi -AvaruddhaVaata	Mutrapurishagandhi- Tridosha

Table 6: Shukra Dushtis and its probable co-relatable alterations in the Seminal parameters

Seminal Parameters (+)increased	Shukra Dushti Lakshanas (-) decreased
Sperm Count (-)	Tanu, Ksheena
Volume (-)	Alpa, Ksheena
Liquifaction	Granthibhuta (+), Avasadi (-)
Viscosity	Picchila (+), Avasadi (-)
pH	Ruksha (+/-)
Motility	Granthibhuta (-), Avasadi (-)
Presence of Pus cells	Peeta, Puti-Kunapagandhi, Vivarna, Anyadhatu Samsrshta.
Presence of RBC	Aruna, Krishna, Vivarna, Puti, Kunapagandhi, Anyadhaatu Samsrshta.
Presence of WBC	Vivarna, Puti, Anyadhaatu Samsrshta

DIFFERENTIAL DIAGNOSIS OF OLIGOSPERMIA: Table 7.

Oligospermia/Oligozoospermia:	Azoospermia	Asthenospermia
-Sperm Count less than 20million / ml but not 0 million / ml. -Asthenospermia associated complaint in many occasions. - Prognosis bad, but it is good compared to Azoospermia.	-Sperm count is 0million / ml -No sperms and no motility. -Prognosis is bad compared to Oligospermia.	-Sperm motility is less than 50%. -As associated one in Oligospermia in many occasions. -Prognosis is good compared to Azoospermia.
Other diseases which should be differentiated :⁵⁸ Aspermia, Asthenoteratozoospermia, Cryptozoospermia, Haemospermia (Haematospermia), Leukospermia (leukocytospermia, pyospermia) Necrozoospermia, Oligoasthenozoospermia, Oligoasthenoteratozoospermia, Oligoteratozoospermia, Teratozoospermia		

Samanya Chikitsa mentioned in our classics

1. According to Charaka Samhita

Charaka has explained the Chikitsa as Samaana Gunayukta Dravyopayoga causes the Vridhi of the Dhaatu or the Dosha which are having the similar Gunas. In Ksheena Shukra Snigdha, Madhura and Sheeta Gunayukta Ahaara and Oushadha is advised In the 30th Chapter of Chikitsa Sthaana, Charaka explains that, Vasti is the best treatment for Shukra Doshas.

2. According to Sushruta Samhita

In Shaareera Sthaana, it is explained that, the Svayonivardhana Dravyopayoga as the treatment of Ksheena Shukra. The principle is quiet similar to the treatment principle of Charaka. Means the Drugs of the Similar Yoni or Gunaas should be used increase the Shukra Dhaatu. It is also explained that, Uttarabasti should be given for Shukradushti after the procedures like Vamana, Virechana, Niruhavasti, and Anuvasanavasti.

3. According to Ashtaanga Sangraha

In case of Shukra Kshaya, Ksheera and Sarpi Dravyaas or Aushadha having the Madhura, Snigdha and Sheeta Gunas should be used.

4. According to Ashtaanga Hridaya

Shukrakari Kriya should be done. ie. The Vaajikarana Should be done. Vaajikarana Yogaas which are having the quality of increasing the Shukra should be used.

5. According to Kashyapa

Kaashyapa explained (Ka. Sha Jaatisutriya) that the Shodhana chikitsa ie. Snehana, Swedana, Vamana, Virechana and Vasti (Asthapana & Anuvasana) should be done first and after that the Aushadha prepared by processing with Ksheera and Sarpi should be given in the condition of male infertility. Kashyapa explained this Chikitsa to treat the infertility due to male factor.

Basic guidelines for the treatment of Ksheena Shukra w.s.r to Oligospermia

1. Identifying the pathology and etiology behind the manifestation.
2. Selection of the appropriate treatment procedure.
 - a) Vata – Pitta involvement, go for Virechana with Trivrith Churna / Trivruth lehya / Avipathikara Churna etc or can directly go for administration of Vaajikarana Yogaas.
 - b) In Gatavaatajanya Ksheena Shukra, the patient can undergo Shukrajanana Dravyaas directly or after a Virechana or Vasti.
 - c) In Avaranajanya Ksheena Shukra – first go for Virechana, then use Shukra Janana Dravyas.
3. Selection of the appropriate Yoga for Shamana
4. Monitoring of the general health as well as the Sperm count on specific intervals and the Lakshanaas of the Ksheena Shukra.
5. Evaluate the mental conditions of the patient and use appropriate measures to counteract if any problem persists.
6. Counseling should be done for the couples to understand and to cope up with the situation.
7. Prescribing proper Pathya Ahaara and Vihaara.

Selection of the drugs for Shamana as well as for Shodhana :According to Shaarangadhara, these Dravyaas can be classified to 2 types and Charaka added one more group of drugs ie Shukra Shodhaka Gana.

1. Shukra Janana

One which produces Shukra. Eg: Ashwagandha, Musali, Sharkara, Shataavari, Dugdha, Maasha, Bhallaataka Phalamajja, Amalaki.

2. Shukra Pravarthaka

One which helps in the production of the Shukra as well as it helps in the Shukra Visarga (Ejaculation). Eg: Brihati Phala.

3. Shukra Shodhaka

One which purifies the Shukra ie which destroy Shukragata Dosha or does the Shudhikarana of Shukra. This is according to the Gana mentioned by Charaka. Eg: Kushta, Elavaluka, Katphala, Samudraphena, Kadamba Niryasa, Ikshu, Kandekshu, Ikshuraka, Ushira, Vasuka.

TREATMENT OF OLIGOSPERMIA

1. Pharmacological

Empirically many medical approaches have been tried including Clomiphene Citrate, Tamoxifen, HMG, FSH, HCG, Testosterone, Vitamin E, Vitamin C, Anti-oxidants, Carnitine, Acetyl - L- carnitine and zinc. Clomiphene citrate has been used with modest success.⁵⁹.The combination of Tamoxifen plus testosterone was reported to improve the sperm situation⁶⁰

(4): 756–62. PMID 9093207. Antibiotics in case of infections can be given.

2. Surgical

Operative corrections of a hydrocele, varicocele, or vas deferens obstruction are included under the surgical measures for Oligospermia.

3. Other procedures

In more severe cases IVF, or IVF - ICSI is done and is often the best option, specifically if time is a factor or fertility problems coexist on the female side.

PATHYA of Ksheena Shukra⁶¹

Ahara:

Kshira,Dadhi,Ghrita,Taila,Vasa,Majja
ChatakaMaamsarasa,Ikshu,Sharkara,Morata
Madhu,Raktashaali,Maasha,Godhuma
,Kharjura,Amarphala,Priyaala,Rasaala.

Vihara:

Abhyanga,Snaana,Maala Dharana,Padatraana
Dharana

Aushadha:

Ardraka,Ashvagnidha,Shataavari,Vidari,Musali
,Lusuna,Bala,Gokshura,Atmagupta,Jivanti,Sringaat
aka

Apathya of Ksheena Shukra:

Ahara:

Atikatu ,Atitikata ,Atilavana Rasasevana ,Amla Rasasevana,Shaaka,Mastu,Takra, Sarshapa Taila

Vihara:

Atimaithuna,Amaithuna,Akaalaimaithuna,Ayonimaituna,Chinta,Atisaahasa,,Shukra Veghdhaarana

Aushadha:

Dhaanyaka,Kulattha,Atasi,Maricha,Yavaani ,Chanaka,Katabhi.

DIET AND ACTIVITIES IN OLIGOSPERMIA:

Foods High in Vitamin A, Zinc, Vitamin B , Vitamin C,Vit E , Omega3 Fatty acid and Selenium.

Lifestyle changes, such as regular exercise, not smoking or drinking alcohol, and avoiding tight underwear, whirlpools and saunas, as heat can kill sperm, may help increase sperm count. Additionally, a diet that includes whole, unprocessed foods and key vitamins and minerals, can help optimize sperm counts.

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