

**AYURVEDIC VIEW OF KSHEENASHUKRA (OLIGOSPERMIA) –
MALE INFERTILITY AND ITS MANAGEMENT****Akshay M. L.^{1*} and Arif Khan J. S.²**¹Second year PG Scholar, ²Associate Professor & Guide,Dept. of PG Studies in Kayachikitsa Sri Sri College of Ayurvedic Science and Research,
Bengaluru.Article Received on
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akshaychandu1999@gmail.com**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. 15 million/ml. the condition Oligospermia can be well corelated to Ksheena shukra in Ayurveda. The male carrying pathology in semen production includes low sperm count, volume, motility, abnormal forms and sperm functional which impairs the normalcy of the semen and is considered as the main reason for the infertility. Oligospermia is the male infertility issue defined as low sperm concentration in the ejaculation. Ksheena shukra is one type of shukra dhusti, being a disease from Apana vata dhusti, in which decreased quality and quantity of shukra dhatu is observed Ayurvedic treatment includes medicines, herbal aphrodisiacs, lifestyle changes, dietary changes, psychological therapy, and Panchakarma (Detoxification) treatment procedures. Ayurveda gives emphasis to the treatment of shukradushti with dhatuvriddhkara, balakara, Shukrajanaka and

Shukrapravartaka those in-terms of increasing the sperm count and motility by using vajeekarana dravya.

KEYWORDS: Ksheena shukra, Oligospermia, Shukra dhusti, Vajeekarana Dravya.**INTRODUCTION**

Male infertility is one of the burning problems now a days. Infertility is defined as a failure to conceive within one or more years of unprotected coitus.^[1] Oligospermia is one among the prime factors in the male infertility and is defined as a subnormal concentration of

spermatozoa in the penile ejaculate.^[2] According to WHO guidelines on semen analysis, Oligospermia is the condition where the sperm concentration is less than 15 million/millilitre.^[3] About 15% of couples do not achieve pregnancy within one year and seek medical treatment for infertility.^[4] One in eight couples encounter problems when attempting to conceive a first child and one in six when attempting to conceive a subsequent child.^[5] Male factors contribute to approximately 20% of Infertility cases. Moreover, they coexist with female factors in an additional 40% of cases.^[6] Incidences of this problem increases day by day due to change in lifestyle. Causes of male infertility include congenital or acquired urogenital abnormalities, varicocele, endocrine disturbances, increased scrotal temperature, gonadotoxic exposure.^[7] and abnormal sperm production or function or impaired delivery of sperm. Advanced paternal age has emerged as one of the main risk factors associated with the progressive increase in the prevalence of male infertility.^[8] Assisted reproduction technologies (ART) like in vitro fertilization (IVF), intrauterine insemination (IUI), and intracytoplasmic sperm injection (ICSI) offer effective infertility treatments, but they are often accompanied by high costs that pose a significant financial burden. Ayurveda described various terms related to male infertility such as; Kshina Shukra, Kshina Retasa, Alpa Retasa and Shukra dosha which resemble conditions associated with oligospermia. Low sperm production, abnormal sperm function or blockages along semen tracts can cause male infertility. Concept of male infertility in ayurveda comprises of Shukra doshas due to vitiation of Vata, Pitta, Kapha, Rakta individually or in Combinations and terms related with infertility like Bijophagata, Klaibya, Napumsaka, Shanda etc.

In Ayurveda, according to Susrutha, the essential factors for conception are mentioned as Ritu (reproductive period), Kshethram (Female reproductive tract), Ambu (Nutritional factors), and Beejam (Sperm and Ovum).^[9] Any abnormality or malformation of any of these harms the fertility outcome. Ayurveda takes into account an individual's constitution and aims to enhance the body's systems involved in fertilization.

The ayurvedic treatment of shodhana (Purification) and shamana (Balancing) therapies assists in eliminating blockages in the channels, pacifying imbalanced doshas, and facilitating the optimal formation of healthy semen (Shukra dhatu) and ovum (Stree shukra). This, in turn, promotes the chances of conception by creating a conducive environment for fertilization.

Review of literature

Nirukti of ksheena shukra

According to Ayurveda Shabda kosha

Here the Mana refers to quantity or amount. The condition in which the Mana of the Retas ie. Shukra will be Alpa is termed as Ksheena shukra. This can be interpreted as reduction in the sperm count or quantity of sperm.

Derivation of the term Oligospermia

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.

Definition of the term oligospermia

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 15million/milliliter.^[10]

Synonyms – Oligospermia, Oligozoospermia.

Samanya nidana of ksheena shukra

Sushruta and Vaghbata explained that, Vata and pitta are two factors which are involved in causation of Ksheena shukra, Saamanya dhatu kshaya karanas and Shukra kshaya karana are explained in Various classics for Ksheena shukra.

1) Samanya nidanas of ksheena shukra

Vata prakopaka ahara - Ruksha-Shita-Alpa Laghu Gunayukta Anna Sevana, Abhojana, Katu tikta- Kashaya Rasa Atisevana are mentioned as Vata Prakopaka Ahara.

Vata prakopaka vihara - 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).

Pitta prakopaka ahara- 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 Ahara.

Pitta prakopaka vihara - Upavasa (Fasting), Chinta (Worry), Krodha (Anger), Bhaya (Fear), Shoka (Grief), Ayaasa (Fatigue ness), Ati Maithuna (Excessive coitus) etc.

2) Vishishta Nidana of Ksheena shukra^[11]

Ativyavaaya and Ativyaayaama – Excessive sexual intercourse and exercise.

Asaatmya Ahaara sevana – Intake of incompatible food.

Akaala 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) These are mentioned as the Ksheena Shukra Vishishta Nidaana

Role of abrahmacharya

While explaining of Trayopasthamba, Acharya Vaghbata describes that Abhrahmacharya leads to Kshaya of Bala and Dhatu, which finally results in Shukra dhatu kshaya.

Nidaanaarthakara vyaadhis

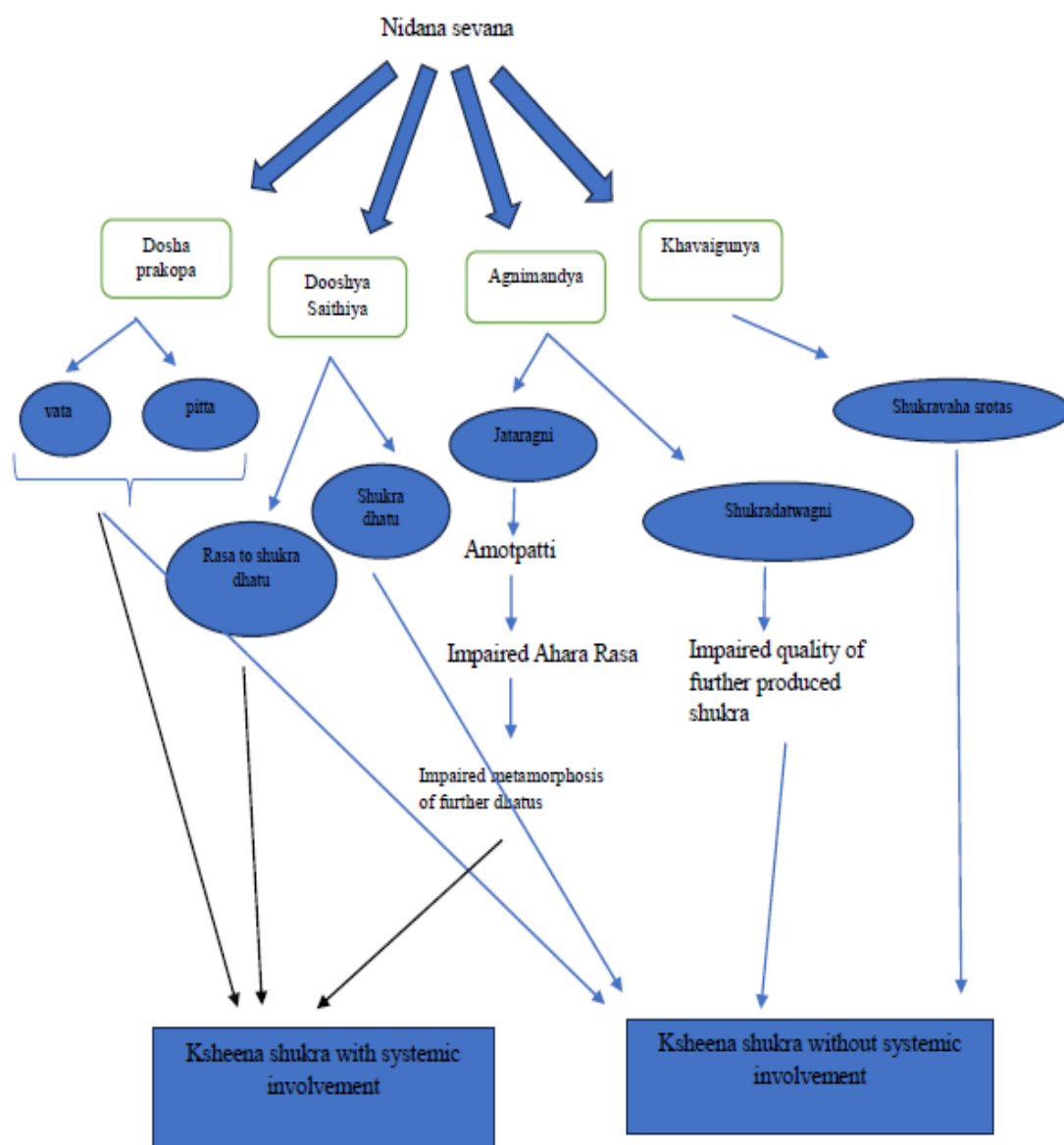
If one disease is a cause for another disease, then it is called as Nidaanaarthakara Vyaadhi. The diseases which are causative factors for Ksheena Shukra are listed as, Upadamsha, Shukra Dhaatugata Jwara, Pittaja Prameha, Shukrameha, Lingaarsa, Vyavaaya Shosha, Rajayakshma, Sahaja Arsha, Sthaulya, Majja Dhaatukshaya.

Causes of oligozoospermia

- Obstruction of Normal flow of Sperm
- Hormonal disorders and disorders of testicles

- Stress, Smoking and Alcohol consumption
- Malnutrition and Obesity
- Irregular Sexual intercourse
- Lack of Physical activity and Conduction of Disturbed life style pattern
- Consumption of low protein and high fat diet
- Adverse effects of Some medications
- Infections and Sexually transmitted diseases

Samprapti of ksheena shukra



Regulation of spermatogenesis

Sertoli cells and some hormones regulate spermatogenesis. It also influenced by various factors.

Role of sertoli cells: Sertoli cells influence spermatogenesis by three ways.

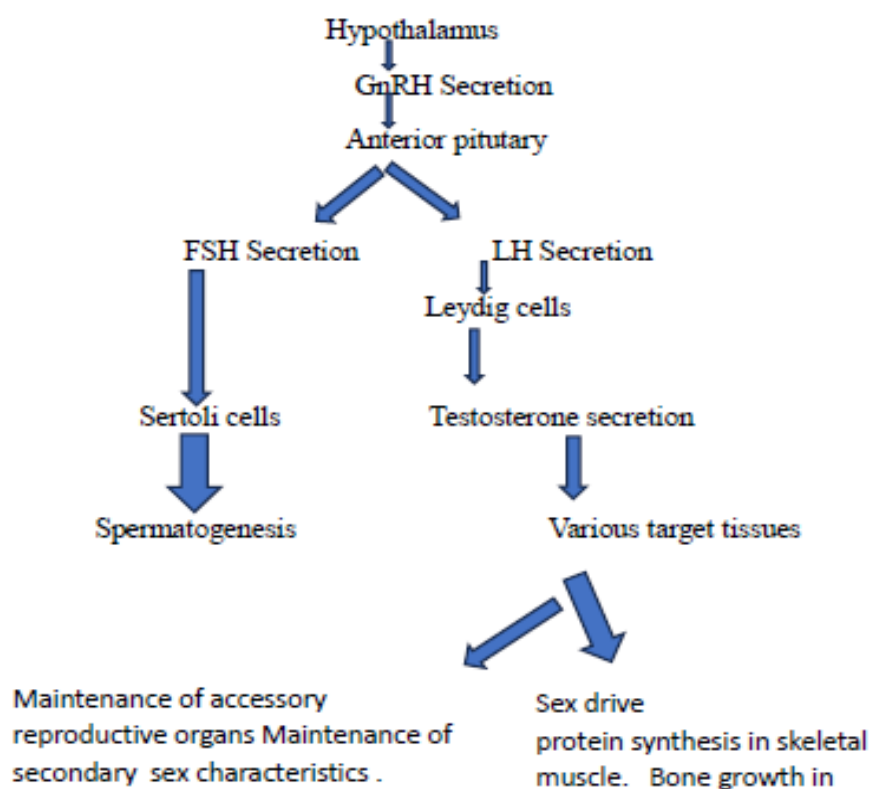
- i. Sertoli cells provide nutrition to the developing sperms.
- ii. These cells secrete estrogen, which is essential for spermetogenesis.
- iii. Sertoli cells secrete hormone-binding proteins. These proteins bind with testosterone and carry the hormones into the fluid of seminiferous tubules. Thus Sertoli cells make these hormones available for the maturation of sperm.

Role of hormones

The hormones, which are necessary for spermatogenesis, are:

1. Testosterone
2. Follicle stimulating hormone (FSH)
3. Luteinizing hormone
4. Estrogen
5. Growth hormone

Mechanism of spermatogenesis



Ācharyas have described Roopa of Ksheena Shukra in detail. Signs and symptoms of Ksheena Shukra can be divided as:

- 1) Sārvadaihika Lakshana
- 2) Sthānika Lakshana
- 3) Manasika Lakshana
- 4) Maithnugata Lakshana
- 5) Shukragata Lakshana

Sarvadaihika lakshana	Sthanika lakshana
<ul style="list-style-type: none"> • Daurbalya (General debility)^[12] • Bhrama (Dizziness)^[12] • Panduta (Pallor)^[12] • Sadana (Body ache)^[12] • Shrama (Easy fatigability)^[12] 	<ul style="list-style-type: none"> • Medra, Vrishanavedana^[13] • Medra, Vrishanadhumayana^[14] • Mukhashosha (Dryness of mouth)^[12]

Manasika lakshana	Maithunagata lakshana
Stridvesha as Manasika lakshanas of Ksheena Shukra according to Haritacharya . ^[15]	<ul style="list-style-type: none"> • Klaibya (Impotent)¹³ • Maithune Ashakti (Loss of libido)¹³ • Alpachesta (May be decreased sexual activity)

Shukragata lakshana
<ul style="list-style-type: none"> • Shukraavisarga (semen may not be ejaculated at all)¹⁶ • Chiratpraseka. (Delayed ejaculation) • Alpa-raktayuktashukrapravriti (Semen may be ejaculated in low quantity mixed with blood)

Lakshanas of Ksheena shukra according to Various acharyas.

acc: to charaka samhita	Acc: To sushruta Samhita	Acc: To astanga Hrdaya	Acc: To astanga Samgraha
Pandutwa			Pandutwa
	Medra Vedana	Medra Vedana	Medhra
		Dhumayana	Dhumayana
Shukra avisarga	Chirat Praseka	Chirat praseka	Chirat nishevana
Dourbalya	Maiduna ashakti		Dourbalya
	Vrishana Vedana	Vrishana toda	Mushka toda
	Alpa rakta Shukra darshana	Sarakta shukra darshanam	Rakta nishtivana
Sadana			Sadana
Klaibya Shrama Mukhasosha Bhrama			Klaibya Shrama Asya shosha Angamarda

Ksheena shukra lakshanas according to various classical texts

Ksheena shukra lakshanas	C.S	S.S	A.S	A.H
Daurbalya	+	-	+	-
Angamarda	+	-	-	-
Bhrama	+	-	+	-
Pandutwa	+	-	+	-
Sandhishoola	-	-	-	-
Sadanam	+	-	+	-
Shosha	-	-	-	-
Shrama	+	-	+	-
Mukhashosha	+	-	-	-
Timira darshana	-	-	+	-
Medhra vedana	-	+	+	+
Vrishna Vedana	-	+	+	+
Medhra dhumayana	-	-	+	+
Stridwesa	-	-	-	-
Klaibya	+	-	-	-
Alpachesta	-	-	-	-
Maithuna ashakti	-	+	-	+
Shukra avisarga	+	-	-	-
Chirat praseka	-	+	+	+

Bheda

Acc to Charaka 4 types of klaibya

Bijopaghataja, Dvajopaghata, Jaraja, Shukrakshayaja.

General symptoms of Klaibya - Inability to do coitus due to loss of erection, even if he has desire and the partner is lovable and obedient, and if attempted to do it, he may be afflicted with Svasa, Sweating, Mogha Sankalpa Cheshta and faccid penis and Nirbija.

Shad vidhaklaibyam bysusrutha

Manasaja –(When mind afflicted with Bhaya, Vishrambha, Stri dosha darshana, Stri dvesha)

Aharaja- (Intake of Katu, Amla, Ushna, Lavana in excess)

Shukra kshayaja –(Indulges in excessive coitus without Vajeeekarana)

Dvaja bhangaja – (Severe Medra roga, injury to Penis, and Shukra vaha nadi)

Sahaja-(Inborn causes)

Khara shukraja- (Excessively obese, instable mind, suppression of Mala, Mutra, Brahmacharya)

Non – Invasive male infertility management

Empirical treatments

Life style,

Life style influences such as sedentary behaviour, Obesity, smoking , alcohol consumption, and substance abuse have been linked to impaired fertility in men. these factors can detrimentally affect sperm quality and motility, suggesting that adopting healthier habits can help improve fertility outcomes.^[17,18]

Weight loss: Non controlled studies have suggested that weight loss can result in improved sperm parameters.^[19,20,21]

Alcohol consumption: Data derived from a recent meta analysis including 15 cross sectional studies and 16,395 men suggested that moderate alcohol dose not adversely affect semen parameters, whereas high alcohol intake can have a detrimental effect on male infertility^[22] heavy chronic alcohol consumption (defined as > 2 drinks/ day) can reduce testosterone levels.^[23]

Antioxidant treatment

Oxidative stress is considered to be the most important contributing factors in the pathogenesis of idiopathic infertility. Antioxidant therapy had a positive impact on live birth and pregnancy rates in sub-fertile couples undergoing ART cycles.^[24]

Selective oestrogen receptor modulators

Selective oestrogen receptor modulators (SERMs) block oestrogen receptors at the level of the hypothalamus, which results in stimulation of GnRH secretion, leading to an increase in pituitary gonadotropin release and stimulation of spermatogenesis.^[25]

Anabolic steroid abuse

Oligospermia or Azoospermia as a result of anabolic abuse should be treated initially by withdrawal of the anabolic steroid. There is no common indication for treating this disorder, the management is based on case reports and clinical experience. Usually, adequate sperm numbers and quality will improve over a six to twelve months period from cessation. If after this interval the condition persists, then hcG without or in combination with FSH as an alternative to clomiphene can be used to stimulate Spermatogenesis.^[26]

ART

ART, which includes techniques such as Intracytoplasmic sperm injection (ICSI), In vitro fertilization (IVF) and Gamete intrafallopian transfer (GIFT), is increasingly utilized to tackle infertility.^[27]

Ayurveda also described Shamana and Shodhana chikitsa for the management of male infertility

Ayurveda emphasized Vajikarana tantra for the management of oligospermia using rasayanas and vajikara dravyas (Virilificatory or aphrodisiacs drugs) along with panchakarma.

1. Shodana chikitsa

The main line of treatment in Ksheena Shukra has been given as “Ksheene Shukrakari Kriya”. Before the administration of the drugs, which are having Vrishya karma, it is a general factor to prepare the body in order to get maximum benefit. These purifactory procedures are sufficient enough to create Srotoshuddhi and a body devoid of malas. Ayurveda includes Vamana karma and Virechana karma in these preparatory procedures.^[28] In Shukra dosha i.e. in Ksheena Shukra the choice of treatment is Basti^[29] (Anuvasana & Niruha) which is made out of Shukravardhaka dravyas i.e. Ghrita Taila Chikitsa etc. is given in the classics like Charaka Samhita, Sushruta Samhita etc. explain various recipes of Vrishya Basti which can be effectively used in the condition.

Prashasta: Shukradosheshu Bastikarma Visheshata: | (Cha.Chi.30/152)

Snigdham Vaantam Viriktam cha Nirudamanuvasitam |

Yojyet Shukradoshartam Samyaguttara bastinam || (Su.Sha.2/12)

2. Samshamana chikitsa

Dalhana comments on Sushruta Sutram 1/7. As Upachaya is the primary line of treatment in Ksheena Shukra. Vriddhi, Unnati etc. are the meanings of the word Upachaya. So while treating Ksheena Shukra the physician should select the combination of drugs which boost the Shukra Dhatu. Properties of Vrishya dravyas (Shukrakara) are Madhura rasa, Snigdha, Guru guna with function of Jeevaniya and Brimhana and which create Harshana of mana.^[30]

Yat Kinchit Madhuram Snigdham Jeevanam Brimhanam Guru |

Harshanam Manashchaiva Sarvam Tad Vrushyamucchyate || (Cha.Chi.2/4/36)

Tat Trividham- Janakam, Pravartakam, Janakapravartakam Cheti || (Dalhana)

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.

2. According to Sushruta Samhita In Shaareera Sthaana, it is explained that, 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.
3. 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.

According to ayurvedic classics

- According to Ācharya Sushruta, Sāmānya Chikitsa for Shukra Dosha includes Snehana, Vamana and Nirooha Basti, Swedana, Virechana, Anuvāsana Basti followed by Uttara Basti. This also holds good for Ksheena-Shukra^[31]
- According to Sushruta, Nidāna-Parivarjana (restraint from etiological factors) is the first line of treatment of any disease.^[32] This will check the progression of the disease, as it acts on the base of the chain of pathogenesis. So, the first line of treatment of Ksheena Shukra will be to stop indulgence of etiological factors whatever is found in the patient.
- Management of Shukra Dosha should include diet of Madhura and Tikta Rasa, proper Vyāyāma and Vyavāya along with timely elimination of Dosha in proper quantity.^[33]
- Vāgbhatta has advised to treat Shukradushti based on the involvement of Doshas^[34] if Vāta Dosha is dominant in Ksheena Shukra then Basti should be the treatment of choice, and if dominated by Pitta, Virechana should be performed. This promotes quality of semen and helps a person in procreation of offsprings.
- Dravya which have properties like Madhura, Sheeta, Snigdha, Picchila such as Ksheera, Ghrita, Śhatāvri, Musali etc are good Shukrala Dravyas.
- In Charaka Saṁhitā, he has mentioned a Guna consisting of ten drugs namely Jeevaka, Řishabaka, Kākoli, Ksheera Kākoli, Mudgaparni, Māshaparni, Medā, Vřuddha Ruhā, Jatilā and Kulinga. Here Jatilā refers to Jatamamsi and Vřuddha Ruhā to Shatavari.^[35] This Guna is called Shukra Janana Guna.

- In Ksheena Baleeya Vajeeekarana Adhyāya, Ācharya Suśruta recommends Shukrala and Vajeeekara Dravya like Bastānda Yoga, Māsha Yoga, Swayamaguptādi Yoga^[36] etc.
- The principle treatment to be followed in Ksheena Dhātu is to consume Dravya which have similar ualities to that Dhātu. Eg. Māmśa in Māmśa Kshaya and Shukra in Shukrakshaya.^[37]

Yogas

Churna yogas: Shatavaryadi churna Vidaryadi churna Kamadeva churna Gokshuradi churna Maha ashwagandadi churna	Ghrita yogas: Kamadeva ghrita Brihat Ashwagandadi ghrita Shatavari ghrita Amrutaprasha ghrita Phala ghrita Mahakalyanaka ghrita
Vati yogas: Vanari gutika Jatiphaladi ghana vati	Rasa yogas: Poornachandra rasa Pushpadhanva rasa Poornachandra rasa
Lehya yogas: Ashwagandha lehya Pippali Rasayana Kushmanda Rasayana	Taila yogas: Shri Gopala Taila Ashwagandha taila Bala ashwagandha lakshadi taila Mahamasha taila

Pathya and Apathya in ksheena shukra

Pathya	Apathya
Ahara: Kshira, Dadhi, Ghrita, Taila, Vasa, Majja, Mamsa rasa, Ikshu, Sharkara, Madhu, Raktashali, Godhuma, Kharjura.	Ahara: Atikatu, Atitikta, Ati lavana ahara sevana, Shaka, Mastu, Takra.
Vihara: Abhyanga, Snana, Padatraana, Dharana.	Vihara: Atimaithuna, Akalamaithuna, Chinta, Atisahasa, Shukra vegadharana.
Aushada: Ashwaganda, Shataavari, Vidari, Musali, Lasuna, Bala, Gokshura, Atmagupta, Jivanti.	Aushada: Dhaanyaka, Kulattha, Atasi, Maricha, Yavaani, Chanaka,

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