

A CRITICAL APPRAISAL ON SHUKRAKSHAYA WITH SPECIAL REFERENCE TO OLIGOSPERMIA

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ABSTRACT

Regeneration is essential to human life, with Shukra (sperm) playing a key role in reproduction. Healthy production and maintenance of Shukra are crucial for procreation; disruption can result in male infertility, affecting 15–20% of the population, with male factors contributing to 20–40% of cases. Modern lifestyle factors such as poor diet, stress, sedentary habits, and exposure to toxins and radiation significantly impair sperm health. Shukra Kshaya refers to the qualitative and quantitative depletion of Shukra Dhatu and correlates with conditions like oligospermia, asthenospermia, and teratospermia. In Ayurveda, oligospermia is considered Ksheena Shukra. Conventional treatments, including surgery, hormonal therapy, medications, and assisted reproductive techniques, may have adverse effects. Ayurveda offers a holistic approach through Shodhana Chikitsa (purification), followed by Rasayana (rejuvenation) and Vajikarana (aphrodisiac therapy), which can help improve sperm quality and quantity. This article discusses the causes, symptoms, and Ayurvedic management of Shukra Kshaya, emphasizing the role of diet, lifestyle, and environmental factors. It also highlights herbal remedies and Panchakarma therapies in promoting reproductive health and managing male infertility effectively.

KEYWORDS: Shukra Kshaya, Oligospermia, Ayurveda, Infertility, Shukra

INTRODUCTION

Male infertility is a global issue, affecting 8-12% of couples worldwide. It is primarily caused by low sperm count (oligospermia) and reduced sperm motility (asthenospermia). In *Ayurveda*, this condition is linked to *Shukravaha Srotas Dushti*. *Acharya Sushruta* described ten types of *Shukra Dushti* that can lead to infertility¹. *Shukra Dhatu* plays a crucial role in reproductive health, representing the reproductive strength of an individual. Factors that decrease *Shukra Dhatu* can lead to *Shukra Kshaya*, which is correlated with

oligospermia in males. Infertility can be primary or secondary. *Vrushya Chikitsa*, a branch of *Ashtanga Ayurveda*², focuses on enhancing semen production when it's insufficient. Oligospermia is a condition where an individual has fewer sperm cells. This condition can also involve significant defects in sperm morphology and motility. According to the World Health Organization (WHO) 2010 standards³, oligospermia is defined as having fewer than 15 million spermatozoa per milliliter. In over 90% of cases, male infertility is caused by low sperm

count (oligospermia) and poor sperm quality, excluding physical defects. In *Ayurveda*, *Shukra* is considered the final cellular component of the body and plays a vital role in reproduction (*Garbhotpadana*).

As *Charakacharya* stated, "A man without offspring is like a solitary tree with a single branch, devoid of shade, fruit, and fragrance."⁴ The functions of *Shukra* include *Dhairya*, *Chyavana*, *Priti*, *Dehabala*, *Harsha* and facilitating progeny production⁵. *Ayurvedic* texts, such as *Charak Samhita* and *Sushruta Samhita*, describe *Shukravaha Srotas* and its *Moolasthanas*. *Acharya Sushruta* identified various *Shukradosha*'s, including *Vata*, *Pitta*, *Kapha*, *Shonita*, *Kunapa*, *Granthi*, *Puti*, *Puya*, *Ksheena*, *Mutra*, *Purish*, and *Retas*⁶.

AIM

- To comprehensively review *Ksheena Shukra* and related details from all the available *Ayurveda* classics.
- To comprehensively review and understand the concept of Oligospermia from modern medicine point of view.

MATERIALS & METHODS

- Extensive literary review of *Shukra Kshaya* from all the available *Ayurveda* classical textbooks
- Extensive literary review of Oligospermia from all the available contemporary medicine textbooks

Shukra Dhatu

Ayurveda considers *Tridosha*'s, *Sapta Dhatu*'s and *Trimala*'s as the basic parameter for assessing one's health. If an individual has to be considered healthy, it is necessary that all the *Tridosha*'s, *Sapta Dhatu*'s and *Trimala*'s should be maintained in optimum quantity as well as Quality without any abnormalities. *Shukra Dhatu* is

the 7th *Dhatu* mentioned in *Ayurveda* and is considered to be important for the maintenance of both physical and mental health as well as for conception of healthy offspring. *Acharya Charaka* stated that *Shukra* is composed of all *Bhuta*'s except *Akasha Mahabhuta*, i.e., *Vayu*, *Jala*, *Agni* and *Prithvi*⁷. However, *Acharya Chakrapani* emphasizes that while *Akasha Mahabhoota* is present in *Shukra*, it is not present in *Shukra* due to its ubiquitous nature during ejaculation, supporting *Acharya Charaka*. According to *Acharya Sushruta*, *Shukra* contains all *Mahabhuta*'s, but it is principally *Soumya*⁸.

Embryological Origin

According to *Ayurveda*, *Sapta Dhatus* are stated to be formed in sequential manner in continuation process. *Rasa Dhatu* gives rise to *Rakta Dhatu*; *Rakta Dhatu* forms *Mamsa Dhatu* and so on. *Asthi Dhatu* (Bone) gives rise to *Majja Dhatu* (Bone Marrow) and *Maajja Dhatu* give rise to *Shukra Dhatu*. According to *Dalhana*, while formation of *Dhatu*, *Dhatwagni* synthesis *Sukshama*, *Sthula* and *Mala* portion. As the process is in continuation, *Sukshma* portion formed from previous *Dhatu* produces next *Dhatu* whereas *Sthula* portion synthesizes the *Dhatu* itself. Similarly, *Shukra Dhatwagni* helps to synthesize *Shukra Dhatu* (Sperm) from *Sthula* portion⁹.

Acharya Charaka has stated that porosity of *Asthi* (Bones) because of *Vayu* and *Akasha Tatva* allows *Meda Sneha* to produce *Majja* (Bone Marrow). *Shukra* is formed from *Sneha* portion of this *Majja* which comes out of *Asthi* pores just as the water comes out of new earthen vessel. *Shukra* spread through the channels called *Shukravaha Srotas* all over the body. And on desire of intercourse

this *Shukra* travels through body like ghee acts on heating to urethra and comes out like downhill movement of water¹⁰.

During development of the embryo, the primordial germ cells transmigrate into the testes and become immature germ cells called spermatogonia which lie in two or three layers of the inner surfaces of the seminiferous tubules. The spermatogonia begin to undergo mitotic division, beginning at puberty, and constantly proliferate and differentiate through final stages of evolution to form sperm. The total period of spermatogenesis, from spermatogonia to spermatozoa, takes about 74 days¹¹.

Location Of *Shukra Dhatu*

Ayurveda considers *Shukra* situated all over the body as entire Sugarcane is pervaded with its juice. The whole curd consists of *Ghee* which is visible after churning it, and oil is present in all parts of the sesame seed, which can be extracted¹².

Time Required for Production of *Shukra Dhatu*

According to *Acharya Sushruta*, *Rasa* stays for three thousand fifteen *Kalas* (nearly five days) in each *Dhatu*. Therefore *Shukra* (Sperm) is produced in eighteen thousand ninety *Kalas* which is nearly a month¹³. According to *Acharya Charaka* it takes seven days to form *Shukra*¹⁴. *Chakrapani* explains these variations in duration based on strength of *Agni*¹⁵ (Digestive strength). The effect of virility and the like substance is promoting the strength quickly. Some are of opinion that it takes for their full assimilation a period of six days and nights; but the truth is there is continual circulation of the food-essence like a wheel¹⁶.

Shudha Shukra Dhatu Lakshanas

In *Ayurveda* classical text physical properties of *Shukra* are given. Detailed *Shukra Lakshana*'s explained by *Bhruahtayee*'s are given below:

SL NO	LAKSHANA	CHARAKA ¹⁷	SUSRUTHA ¹⁸	VAGBHATA ¹⁹	MADHAV ²⁰
1	<i>Spatikabha</i>	+	+	-	+
2	<i>Shukla</i>	-	-	+	+
3	<i>Ghana</i>	+	-	-	+
4	<i>Drava</i>	-	+	+	-
5	<i>Guru</i>	+	+	+	+
6	<i>Snigdha</i>	-	-	+	-
7	<i>Bahula</i>	-	-	+	-
8	<i>Avidahi</i>	-	-	-	+
9	<i>Madhugandhi</i>	+	+	-	-

10	<i>Picchila</i>	+	-	-	+
11	<i>Tailanibha</i>	-	+	+	-
12	<i>Kshoudranibha</i>	-	+	+	-
13	<i>Ghrutanibha</i>	-	+	+	-
14	<i>Madhura</i>	+	+	+	-

PHYSICAL CHARACTERISTICS OF SHUKRA

CHARACTERISTICS	OBSERVATION	MEANING
Varna (Colour)	<i>Shukla</i>	White in colour
Swaroopa (Appearance)	<i>Sphatika Sannibham, Bahala, Ghana, Guru</i>	<ul style="list-style-type: none"> ➤ Like Crystal ➤ Quartz ➤ Camphor ➤ Thick
Gandha (Odour)	<i>Avistram Madhuram</i>	<ul style="list-style-type: none"> ➤ Not having bad odour ➤ Sweet Smell
Dravata (Fluidity)	<i>Drava, Snigdha, Picchilam</i>	<ul style="list-style-type: none"> ➤ Fluidity ➤ Unctuous ➤ Slimy
Matra (Semen Volume)	<i>Bahu</i>	➤ Abundant in quantity
Functions	<i>Beejartha</i>	➤ Invariably helps in the procreation

Functions of Shukra Dhatu

Shukra Dhatu is present in both male and female. The function of *Shukra Dhatu* mentioned by *Acharya Susruta*; *Dhairya* (Courage), *Chayvanam* (Ejaculation), *Priti* (Affection), *Dehabala* (Body Strength), *Harsh* (exhilaration), *Bijarth* (Procreation)²¹. *Chakrapani* while comments on *Su. Su. 14/14* has explained that there is *Shukra* in *Stree* which is not useful for conception or procreation. Whereas *Aartava* is the reason for fertilization in women. *Acharya Vagbhata* has clarified that even though woman secrete *Shukra* during coitus, it doesn't participate in fertilization²². *Stree*

Shukra in women can be correlated with Secretions of Bartholin, Cervical and Endometrial glands. Hence the *Shukra* in women said to have no role in sexual activity and not the conception. *Artava* is menstrual blood and after fertilization portion of *Artava* moving in upward direction is Estrogen, Progesterone, Oxytocin and human chorionic gonadotropic hormone. *Stree Shonita* is ovum which is essential for conception²³.

Shukra Kshaya

The condition where the amount of *Shukra Dhatu* in the body will be decreased or moderately lower than the optimum quantity. The Characteristic feature

in this condition is that the patient is in the middle age and the conditions are produced by certain etiological factors.

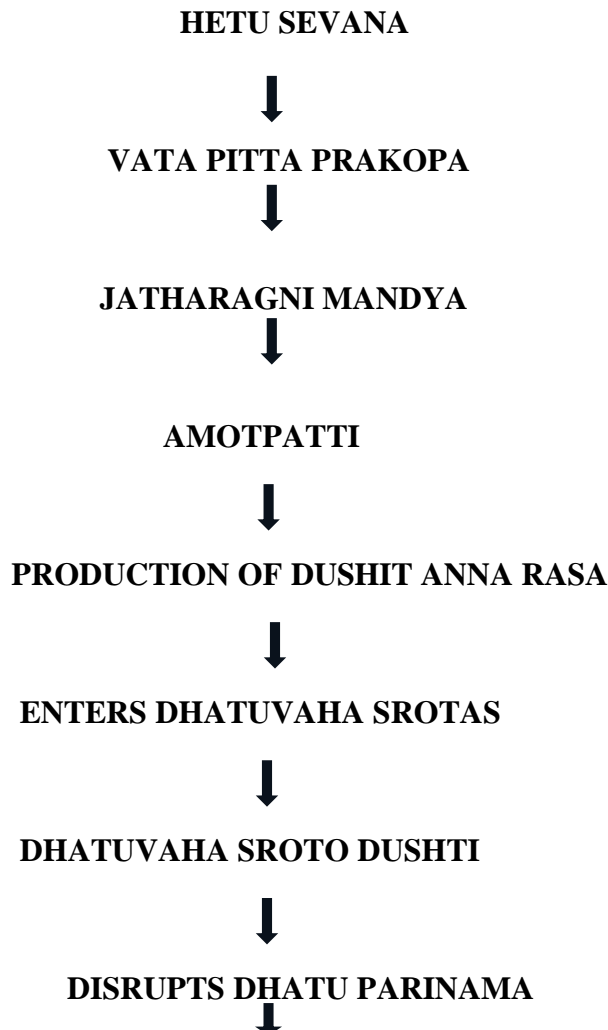
Nidana of Shukra Kshaya

Different etiological factors are described as the causative factors for *Shukra kshaya* in Classics can be concluded as

- *Shukra Dushtikara Ahara's* and *Vihara's* can be considered as the primary cause²⁴.
- *Shukra* is the *Sara* of *Sapta Dhatu's*. So, the factors which make the *Kshaya* of *dhatu's* can be considered in the *Nidana*²⁵.

- The factors which lead to *Shukravaha Sroto Dushti* plays an important role in producing *Shukra Kshaya*²⁶.
- The *doshas* involved in *Kshina-Shukra* are *Vata* and *Pitta* so the causes for vitiation of *Vata* and *Pitta doshas* can be taken into account²⁷.
- The diseases such as *Sthauilya*, *Prameha* etc causing or predispose to *Kshina Shukra*. Thus these types of *Nidanarthkrara Vyadhi's* are also including in the etiology.
- The consumption of *Dravya's* having *Rasa's* like *Kshara*, *Lavana* etc. can lead to *Kshina-Shukra*.

Samprapti of Shukra Kshaya



POOR NOURISHMENT OF SHUKRA DHATU

SHUKRA KSHAYA

Purvarupa of Shukra Kshaya

➤ No Specific *Purvarupa*'s has been mentioned for *Shukra Kshaya* in *Ayurveda* classics.

Rupa's of Shukra Kshaya

Detailed description of Signs and Symptoms of *Shukra Kshaya* are available in various *Ayurvedic* classics. Some of which are as follows:

***Sarvadaihika Lakshana's*^{28,29,30}**

Daurbalya (General debility)

Bhrama (Dizziness)

Pandu

Sadana

Shrama (Easy fatigability)

Medhra Vrishana vedana

Medhravrishna dhumayana

Mukhashosha (Dryness of mouth)

Timir darshana

Shosha (Loss of weight)

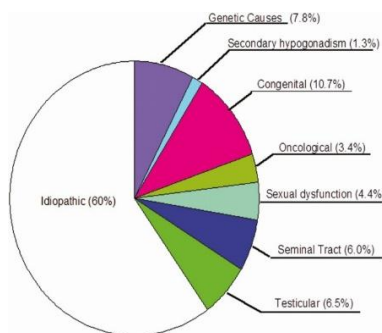
Klaibya (Erectile dysfunction)

Maithune Ashakti

Alpa retas

Shukra avisarga

Causes Of Oligospermia³⁴



DISCUSSION

According to *Acharya Charaka*, a childless person is likened to a solitary tree with a single branch, devoid of shade, fruit, and emitting a foul odor. In *Ayurveda*, *Shukra*

Chirat praseka (Delayed ejaculation)

Alpa – rakta yukta shurka pravriti

Majjamishra

***Manasika Lakshana's*³¹**

-TRIDVESH

Oligospermia – An Overview

Infertility, defined as the inability to achieve a pregnancy after 12 months of regular, unprotected intercourse, affects up to 15% of couples worldwide. Oligospermia is a sole contributor in about 20% of infertile couples, or acting in conjunction with a female infertility factor in 30% of infertile couples³². Oligospermia refers specifically to the condition in which sperm concentration below the lower reference limit of 15 million sperm/mL of ejaculate. Oligospermia can be further classified as mild (between 10 and 15 million sperm/mL), moderate oligozoospermia (between 5 and 10 million sperm/mL), and severe oligozoospermia (less than 5 million sperm/mL)³³.

dhatu is one of the seven essential body tissues, predominantly characterized by *Saumya guna* and *Shadrasa*. The primary function of *Shukra* is *Garbhotpadana*. It is produced from the *Sneha* of *Majja* through

the action of *Shukra Dhatwagni*. Ayurvedic texts describe eight types of *Shukra Dushti*. When *Vata* and *Pitta dosha's* are imbalanced, the quality and quantity of *Shukra* are altered, leading to *Ksheena Shukra*. *Vata's Shoshana* property hinders the *Uttarottara Dhatu Parinama*, causing depletion of *Shukra dhatu*. *Pitta* vitiation leads to *Amottpatti*, causing improper *Dhatu* formation and resulting in *Shukra Kshaya*. Oligospermia can be correlated with *Ksheena Shukra Dushti*. *Shukra* is *Saumya guna* and *Jala Mahabhuta Pradhana Dhatu*; *Shukra Kshaya* was said to be due to increased *Pitta dosha* and motility dysfunction was said to be due to vitiated *Vata dosha*.

CONCLUSION

In conclusion, Ayurvedic texts, particularly those by Acharya Sushruta, describe conditions resembling Oligospermia, such as *Kshinaretasa* and *Alparetasa*. Additional terms like *Shukarakshaya* and *Kshinashukra* also point towards Oligospermia. Furthermore, Oligospermia shares striking similarities with *Kshina Shukra Vyadhi*. Notably, *Shukra Kshaya* is characterized by a quantitative and qualitative decline in *Shukra Dhatu*. *Daurbalya* (General debility), *Medhra Vrishana Vedana*, *Medhravrishna dhumayana*, *Shosha* (Loss of weight), *Klaihya* (Erectile dysfunction), *Maithune Ashakti*, *Alpa Retas*, *Shukra Avisarga*, *Chirat Praseka* (Delayed ejaculation), *Alpa – Rakta yukta Shurka Pravriti* are some of the sign and symptoms seen in *Shukra Kshaya*. *Shukra Kshaya* can be correlated with Oligospermia or any one of the other conditions explained in modern aspect, all of them are associated with defects either quantitatively or qualitatively

which is the typical character of *Shukra Kshaya*.

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