International Research Journal of Ayurveda & Yoga

Vol. 6 (5),47-54, May,2023 ISSN: 2581-785X:<u>https://irjay.com/</u> DOI: 10.47223/IRJAY.2023.6508



Consequence of *Ayurveda* **Remedies with Diet and Life Style in the Male Infertility:** A Critical Review.

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Article Info

Article history: Received on: 17-04-2023 Accepted on: 21-05-2023 Available online: 31-05-2023

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ABSTRACT:

Background: Infertility is a major medico-social issue now a days. The absence of conception after a year of sexual activity without the use of contraception is known as infertility. Every sixth couple has infertility at some point in their relationship.80 million people worldwide experience pregnancy failure, according to reports from the World Health Organization. About After a year, 15% of couples are still unable to conceive. The prevalence of male infertility is 7%. Idiopathic male infertility occurs when aberrant semen parameters are found because of unknown causes. Oligozoospermia is a condition when a man's sperm count in his semen is below 15 million/ml. In classics, the situations described under *Kheena Shukra* -vitiation of *Shukra Dhatu* by *Vata* and *Pitta Dosha*. **Aims:** To review Ayurvedic aspect of *Ksheena Shukra* and male infertility with details management.

Materials and methods: Relevant Ayurveda and modern literature available information on web sources searched to fulfill the Aim.: **Discussion**: The majority of patients use assisted reproductive technologies or intrauterine insemination to become fertile. Unfortunately, success rates are minimal in situations where the sperm count is extremely low. It's time to investigate reproductive aids derived from herbal, herbo-mineral formulations with regard to healthy lifestyle and diet management.

Conclusion: Current article reviles the details management and scope of Ayurveda in the field of andrology.

Keywords: Ayurveda, *Ksheena Shukra*, Male infertility Oligozoospermia, *Virechaana Karma*

INTRODUCTION

Male life changing day by day in various aspects, especially concern to health, unhealthy diet, faulty lifestyle, stress, many more unknown causes, result in morbidity and mortality. The formation of *Shukra Dhatu* depends on diet, lifestyle, and stressfree mind, general health of an individual. Impairment in the above factor results in Vitiated *Doshas*, impaired *Agni* (digestive fire), Impaired production of *Dhatu (Rasa to Shukra)*. All these factors impair the *Shukra Dhatu* result into male infertility¹. Oligospermia which refers condition of low sperm count (less than 15 million sperm per milliliter) is one of the major causes of male infertility². The decrease



sperm count is one of the major clinical observations of oligozoospermia which further leads other problems such as; erectile dysfunction, premature ejaculation and loss of lust.Oligozoospermia can be the result of many factors, some are permanent and some are reversible. Causes of Oligozoospermia include an obstruction of the normal flow of sperm due to such conditions as testicular trauma and vasectomy, from infection and sexually transmitted diseases. There are a number of causes for male infertility, including congenital disorders (testicular dysgenesis, cryptorchidism, etc.), acquired disorders, genitourinary (obstruction, tumour and testicular torsion, genitourinary tract infections, increase scrotal temperature), endocrine disorders, genetic disorders, immunological factors, systemic diseases, and external factors (medications, toxins, radiation, etc). Other causes are reduced synthesis of testosterone or defective release of FSH and LH from pituitary³.

Ayurveda has a great historical heritage in regards to health and illness. According to Ayurveda, following precise Pathya-Apathya, Dincharyai(Daily regimen), Rutucharya (Seasonal regimen), and Aahar-Vihar(diet and life style) along with taking medication can help maintaining health and prevent off sickness. The traditional book of Ayurveda offers significant insight into a variety of illnesses and how to treat them, including sexual issues. Ayurveda also provided in-depth explanations of infertility, its causes, pathophysiology, and treatments under Vajikarana, one of the eight branches of ayurveda. Klaibya, Napunsaka, and Shanda, which are signs of impotence, and disorders like Shukra Dosha and Shukra Doshjaj *Kiaibya*(Impotency) ,Ksheena Retasa(decreased sperm count), Alparetasa terms can be taken under the umbrella of Shukra Dhatu Dushti4. The quality and quantity of the Shukra alters mainly due to vitiation of both Vata and Pitta dosha which results into Shukradushti specially Ksheena Shukra. Ayurveda give emphasis to the treatment of Shukradushti with Dhatuvriddhkara, Balakara, Shukrajanak and Shukrapravartak, and Shukra Shodhaka those in terms of increasing the spermatozoa count and motility by using Ayurvedic drugs.

Epidemiology

As per the WHO estimates 60–80 million couples (8-12%). Approximately 20% of cases of infertility are entirely due to a male factor, with an additional 30% to 40% of cases involving both male and female factors. Therefore, a male factor is present in one half of infertile couples⁵.Male infertility refers to the inability of a male to achieve a pregnancy in a fertile female. Some of the known responsible factor for male infertility are poor semen quality, endocrine inter relationship, testicular function and genetical factors etc⁶. According to a study conducted in South India over a period of 13 years, it was found that the decline in sperm count was 30.31%⁷. Among these, oligozoospermia contributes as one of the major factor of infertility. The reported prevalence of oligozoospermia in cases of primary infertility in a study was 33.17%⁸. As per WHO oligozoospermia is condition where sperm count is below 15 million/ml⁹.

AIM AND OBJECTIVE

To review male infertility from Ayurvedic and modern science point of view as well as mane the same.

MATERIALS AND METHODS

To fulfil the aims and objectives relevant Ayurveda and modern literature available information on internet were searched. The results on search are described here after.

DISCUSION

Disease Review

The term *Ksheena Shukra* comprises of two words *Ksheena and Shukra. The term Ksheena* is derived from "Kshi + Kla". This has got the meanings like Sukshma, *Abala, Durbala, Kshama* and *Tanu*. The word *Shukra* is derived from the Sanskrit root "*Suc-Klede*" meaning purity.

Nidana of Ksheena shukra

According to Ayurveda classics, It has been maintined that the *Vata* and *Pitta* are the two doshas involved in the causation of *Ksheena Shukra*. *Vata* and *Pitta Prakopaka Hetus, Samanya Dhatu kshaya karana and Shukra Kshaya Karana* are explained in various classics which are responsible for *Ksheena Shukra*. *Nidana* of *Ksheena Shukra* are¹⁰- (Table No-1)

Factor Contribute to Male Infertility¹¹:

Mainly there are five factors contribute to male infertility. Those are 1. Disorders of spermatogenesis 45% 2.Obstruction of efferent Ducts 30% 3.Disorders of sperm motility 10% 4. Sexual dysfunction5% 5. Unexplained 10%

Disease review:

Oligospermia which refers condition of low sperm count less than 15 million sperm per millilitre¹². This condition occurs due to etiological factors which hamper Spermatogenesis and also blockage in path, which conveys sperms from testis to outside.

As per modern science cause of Oligozoospermia are Obstruction of the normal flow of sperm, Infection and sexually transmitted diseases, Hormonal disorders and diseases of the testicles, Stress, smoking and alcohol consumption, Malnutrition and obesity, Adverse effects of some medications, Irregular sexual intercourse, Lack of physical activity and conduction of disturbed life style pattern, Consumption of low protein and high fat diet, bitter, astringent and spicy foods, etc¹³.

Samprapti of Ksheena Shukra: According to Ayurveda by consuming improper diet and life style there is vitiation of *Tridosha* especially *Vata* and *Ptta* which leads to *Agnimandya* mainly *Jatharagnimandya* and *Dhatwagnimandya*. Due to *Jatharagnimandya* there is formation of *Ama* which lodges in *Medhra* and *Vrishana* and leads to *Ksheena Shukra*. Likewise *Dhatwagnimandya* leads to improper formation of *Rasadi Dhatu* causing sequential depletion from *Rasa Dhatu* to *Shukra Dhatu* which eventually leads to *Ksheena Shukra*.(Flow chart-1)

Diagnosis Of Ksheena Shukra (Oligozoospermia) :

Diagnosis of (oligozoospermia) can be done by Semen analysis, Serum LH, FSH, Testosterone,

Testicular biopsy. According to severity Oligozoospermia can be divided into three types Mild: concentrations 10 million—20 million sperm/ml, Moderate: concentrations 5 million — 10 million sperm/ml and severe: concentrations less than 5 million sperm/ml.

Chikitsa Of Ksheena Shukra

The detailed Management of *Ksheena Shukra* has been coated descriptively in Ayurveda classics which can be discussed under three headings.

- 1.Nidana Parivarjana
- 2.Samshamana chikitsha
- 3. Samsodhana chikitsha

Nidana Parivajana

To root out the *Roga* one has to avoid the etiological factors. The etiological factors which have been mentioned under *Nidaana*, are to be strictly avoided by the patient of *Ksheena Shukra*.

Shamsamana chikitsa

According to classics the main treatment for *Ksheena Shukra* is *Upachaya*.So *Upachaya* of *Shukra Dhatu* mainly achieved by diet and lifestyle modification, herbal or herbo-mineral preparations of Ayurveda texts as well as implementation of Yoga and Pranayam in routine practice. Table no -2: Dietary regime and life style modification

for the Oligozoospermia:

Herbal and herbo-mineral formulation:

As *Upachaya* is the primary line of treatment in *Ksheena Shukra* so the physician should select the combination of drugs which enhance *Shukra Dhatu* by using the *Vrishya* and *Vajikar Dravyas* which possess *Madhura Rasa, Snighdha, Guru Guna* with function of *Jivaniya and Brimhana* properties.

Table No- 3-Classification of Vajikara Dravya¹⁴

Table 4: Single herbs traditionally used for *Vrishya* and *Vajikaran* purposes:-

Shukra sodhana gana (drugs which help in purification of sperm) and *Shukra janana gana* (drugs which help in formation of sperm) has sperm enhancing quality

Herbo mineral preparation traditionally used for *Ksheena Shukra*:-

Vati/Rasa-Chandraprabhavati22,Vanarigutika23,Pushpadhanwaras24,Brihamani gutika25,gutika25,

Vrishya gutika²⁶

Churna-Shatavaryadi churna²⁷, swayamguptadi churna²⁸, **Ghrita**-Phala ghrita²⁹, Kalyanak ghrita³⁰, Shatavari ghritam³¹, Godhumadya ghritam³²

Avleha-Ashwagandhadilehyam³³Gudakusmandam³⁴, Amritaprasham³⁵,

Arista-Ashwagandha rista³⁶, Draksha rista³⁶, Dashamoola rista³⁷

Shodhana Chikitsha

"Ksheene Shukrakari Kriya" is the main line of treatment in Ksheena Shukra. Before the administration of the drugs, which are having Vrishva Karma, Srotosudhi is important to prepare the body in order to get maximum benefit. Avurveda includes Vamana Karma and Virechana Karma in these procedures. With the Shodhana procedure, Shukra also increased in qualitative as well as quantitatively³⁸. In Ksheen Shukra, the main vitiated Dosha are Vata and Pitta. Virechana is a crucial modality and eminent bio-cleansing process for vitiated Pitta Dosha. It also removes the Srotoras Avrodha(obstruction of channels) and cause Uttarotaara Dhatu formation. The entire process supports in removing the free radicals (oxidants) present in the microcirculatory passage of Shukra Vaha Srotasa, which obstruct the function of Shukra and by doing so, increases the activity of Shukra (motility) along with Shukra Vaha Srotas³⁹.

Basti therapy is specifically designated to treat Vata vikaras⁴⁰. Basti by expelling out Vata, Shleshma, Pitta, Anila, and Mutra creates firmness to the body and enriches Shukra. Acharya Charaka also specifically mentioned Basti

Karma for *Shukra Doshas*⁴¹. Therefore, drugs that are administered in *Basti* form are said to enhance the quality and quantity of *Shukra*. The line of treatment of *Ksheena Shukra* should be based on *Brimhana Chikitsa* and *Vrishya* drugs having *Shukra Vriddhikara* properties. According to classics *Basti* therapy that are used for *vrishya* and *vajikaran* purpose are *Tritiya baladi yapana Basti*⁴², *Chatuhprasritik Basti*⁴³.

CONCLUSION

It is need of hour to search the alternate source of oligozzospermia for the cost effect and to solve this type of medico social issues. Ayurveda have much emphasis on this ailment and given the effective treatment for the Infertility in the Vajikarna Chapter. This article will helpful to future research related to field of Andrology.

Acknowledgment- Nil Conflicts Of Interest- Nil Source of finance & support – Nil

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How to cite this article: Nayak S, Varsakiya J "Consequence of Ayurveda Remedies with Diet and Life Style in the Male Infertility: A Critical Review" IRJAY. [online]2023;6(5);47-54.

Available from: https://irjay.com.

DOI link- https://doi.org/10.47223/IRJAY.2023.6508

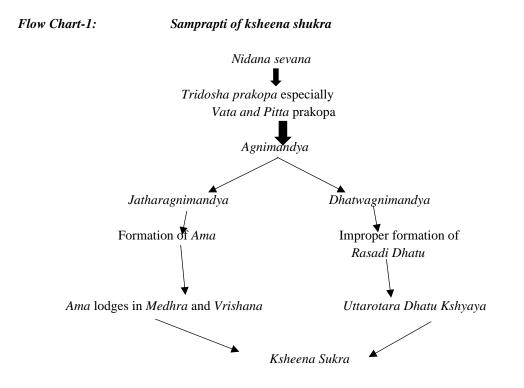


Table no -1: Aetiological factor of Ksheena Shukra

| Dietary factors | Factor related to | Mental Factor | Drugs | Other | Miscellaneous |
|---------------------|---------------------------|----------------------|----------------|--------------|---------------|
| | lifestyle | | | | |
| Asatmya Ahara | Ati Vyayama (Excessive | Chinta(worry),S | Kulattha(Doli | Shukra | Jaravisha, |
| (Intake | physical exercise), | hoka(grief),Kro | chos biflorus) | dhatugata | Dooshi |
| ofunwholesome | Ati Vyavaya(Excessive | dha(anger),Bha | Maricha(Pipe | Jvara | Visha, |
| food), | sexual indulgence), | ya(fear) | r nigrum) | Sukrameha(| Marmabhighata |
| Ruksh, Tikta, | Ati Ushnasevana(Excess | Irshya(jelous) | Kshara(Alaka | spermaturia) | |
| Kashaya, | intake of hot substance), | Udvega | lies) | Lingarsha | |
| Atilavana, Amla, | Stree Dosha | | Dhatura(Datu | Rajayakshm | |
| Ushna sevanata | Karshanata | | ra | a(tuberculos | |
| (Intake of food | | | stramonium) | is) | |
| which are | | | | Sthaulya | |
| exceedingly | | | | (Obesity) | |
| ununctuous, bitter, | | | | | |
| astringent, saline, | | | | | |
| sour and hot) | | | | | |

| Particulars | Pathya(wholesome) | Apathya(unwholesome) |
|---------------------------|--|--|
| Diet | There is unique diet mentioned in Ayuvrveda texts for the Oligozoospermia includes Vasa (Muscle Fat), Majja (Bone marrow), Ghrita (Ghee), Vilepi (Gruel), Kshira (Milk) and its products Rakta shali (Red variety of Rice) Godhuma (Wheat), Masha(Vigna mungo), Kadali (Banana), Atasi(Linum usitatissimum), Patola Patra(Trichosanthes diocia),Kushmanda Majja (Benincasa hispida),Alabu Phala(Cucurhita lagrenaria) , Kharjura(Phoenix sylvestre), Varahi,Mansa (swine meat), Mahisha Mamsa(Buffal meat)Kukkutamamsa(Chicken),NarikelaKsheer a(Coconut Milk), Mandaka(Supernated part of bifftermilk), Karpoora Nalika, Rasala, Sharkara,Uudakam, Yava Saktavaha, JirnaMadya (Old wine), Mahisha Dadhi (Curd prepared from Buffalo milk),Mähitha Takra (ChurnedButtermilk), Navaneeta (Butter), GavyaGhrita (Cow ghee), MahishaGhrita (buffalo ghee), Eranda Taila(Castor oil), Madhu(Honey), Purana Guda (Oldj aggery) | Katu, Tikta, Lavana (Pungent, Bitter, Salt) Rasa Atisevana, Nishpava (Lablab purpureus), Chanaka (Cicer arietinum), Kulattha (Dolichos biflorus), Ksharg Pippali (Piper longum) atisevana. |
| Life style modicatoion | Abhyanga, Anjana, Udvartana, Swedana, AbharanaDharana, Chandrama Yukta Ratri, Navaymvana Stree, Snana, Pada Prakshalana | Adhika Vyavaya, Adhikashoka, Adhika Chinta, Bhaya, Vega Dharana |

Table no – 2: Dietary regime and life style modification for the Oligozoospermia:

Table No- 3-Classification of Vajikara Dravya¹⁴

| Classification | Examples |
|--|--|
| Shukra Janaka (which initiates and enhances the Shukrajanana Kriya by nourishinent of Dhatu in sequential pattern from Rasa to Shukra Dhatu) | Ashvagandha(Withania sominifera),Musali(Curculigo orchioides),Sa rkara(Sugar) and Shatavari(Asparagus racemosus) |
| Shukra Pravartaka (which causes proper ejaculation of semen) | Sankalpa, Ucchata(Abrus precatorious), Brihati(Solanum indicum) |
| Shukra Janaka-Pravartaka (Used for genesis and also offers ejaculatory effect) | Ghrita,Kshira,Mamsa,Bhallataka Phalamajja(Semicarpus anacardium) |

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| Herbs | Latin name | Effect |
|---------------------------|----------------------|--|
| Kapikachhu ¹⁵ | Mucuna prurita | increases sperm concentration and motility |
| Gokshura ¹⁶ | Tribulus terrestris | raises testosterone levels |
| Ashwagandha ¹⁷ | Withania sominifera | enhances spermatogenesis due to properties like Shukrala, Balya , Rasayana |
| Amalaki ¹⁸ | Embelia ribes | rich source of vitamin-c which enhances fertility by reducing oxidative stress |
| Vidari ¹⁹ | Ipomoea digitata | has properties like <i>Jeevaniya,Brihaniya</i> , <i>Vrishya,Pita-Vatahara</i> .As <i>Ksheena shukra</i> is <i>vata</i> <i>pitta</i> origin it alleviates <i>vata- pitta</i> and increases sperm count |
| Shatavari ²⁰ | Asparagus racemosus | improves sperm count due to Vrishya, Rasayana properties |
| Mushali ²¹ | Curculigo orchioides | improves sperm count due to properties like Madhura(sweet) rasa, Guru(heaviness) snigdha guna(unctuousness) and Vrishya, Rasayana |

Table 4: Single herbs traditionally used for Vrishya and Vajikaran purposes:-