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COMPARATIVE ANALYSIS OF VIRECHANA AND CONVENTIONAL TREATMENT IN MALE INFERTILITY

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ABSTRACT
Infertility is usually defined as the inability of a couple to conceive even after one year of unprotected, frequent sexual intercourse. The male is solely responsible in about 20% of cases and is a contributing factor in another 30% to 40% of all infertility cases. As male and female causes often co-exist, it is important that both partners are investigated for infertility and managed together. This activity highlights the etiology and epidemiology of male infertility. It also reviews the evaluation and management of male infertility as well as the role of the interprofessional team in evaluating and treating patients with this condition.

KEYWORDS: Shukra Dosha, Male Infertility, Ayurved.

INTRODUCTION

Infertility is usually defined as the inability of a couple to conceive even after one year of unprotected, frequent sexual intercourse.[1] It affects about 15% of all couples in the United States and at least 180 million worldwide.[2] Male infertility is defined as the inability of a male to make a fertile female pregnant, also for a minimum of at least one year of unprotected intercourse. The male is solely responsible for about 20% and is a contributing factor in another 30% to 40% of all infertility cases.[3] As male and female causes often co-exist, it is important that both partners are investigated for infertility and managed together. Overall, the male factor is substantially contributory in about 50% of all cases of infertility. There are several reasons for male fertility to occur, including both reversible and irreversible conditions. Other factors that could influence each of the partners could be their age, medications, surgical history, exposure to environmental toxins, genetic problems, and systemic diseases. The key purpose for evaluating a male for infertility is to identify his contributing factors, offer treatment for those that are reversible, determine if he is a candidate for assisted reproductive techniques (ART) and offer counseling for irreversible and untreatable conditions.[4] In rare cases, male infertility could be a herald to a more serious condition. This is an additional reason to do a comprehensive evaluation of the male partners of infertile couples; so that any significant, underlying medical conditions can be identified and treated.[5]

Male infertility can also be classified based upon the medical interventions that can potentially assist conception.[6] Untreatable male sterility is seen in 12% - primary seminiferous tubular failure, Sertoli cell-only syndrome, and bilateral orchiectomy. Treatable causes of male infertility are found in 18% - obstructive azoospermia, ejaculatory duct, and prostatic midline cysts, gonadotropin deficiency, sexual function disorders, sperm autoimmunity, varicoceles, and reversible toxin effects. Globally, infertility affects approximately 13% to 15% of all couples, while one in five is unable to achieve pregnancy in the first year. About 50% of young, healthy couples in the US who could not create a pregnancy during their first year of unprotected sexual intercourse will successfully conceive during the subsequent twelve months, even without any specific treatment.[6] With the first child, one in six couples encounter some fertility problems, and with a subsequent child, one in six still has issues.[7] In 20% to 30% of infertility cases, males can be solely responsible, with an overall contribution to infertility in couples of about 50%.[8]

Untreatable male infertility is found in 70% - oligozoospermia, asthenozoospermia, teratozoospermia. Assisted reproductive techniques will be necessary for reproduction.

Infertility affects one in every six couples, according to statistics gathered in the last several years. Male infertility is one of the most common and serious of these conditions, affecting up to 30-40 percent of men. Oligozoospermia, asthenozoospermia, and azoospermia are all contributing factors. One of the most common causes of infertility is oligospermia. An oligozoospermia diagnosis is made if there are fewer than 15 million sperm per million / ml or 40 million per ejaculation, according to the World Health Organization's Semen analysis criteria. The sperm count should be at least 40 million/ml and the sperm motility should be at least 60%. Even with a low sperm count (less than 05 million/ml), studies have shown that a woman may become pregnant if her sperm cells have strong Progressive Motility. It is similar to Ksheena Shukra, where Shukra Dhatu is reduced in both quantity and quality.

Ayurveda provides a glimmer of hope since it has a unique way of looking at Ksheena Shukra. Shukra is the seventh Dhatu in Ayurveda. Maija Dhatu is the raw material for it. the Oja, which provides the body with nourishment, is made up of the Sapta Dhatu as well as the Sara, which is accountable for the Oja. Shukra should possess such a potency so as to conceive a lady, Shukra being the ultimate Dhatu meant mainly for reproduction, also attribute qualities as Dhairya, Chyavana, Preeti, Dehabala, Harsha etc. to males Ashta Shukra Dusthi and Ksheena Shukra (Oligozoospermia), which are linked to Dourbalya and Mukhashosha and include the key Klaibya, Shukra Kshaya, and Maithuna Ashakti, may result from a variety of abnormalities, including deformities. Ksheena Shukra is a Doshabala Pravrutta, Kruccha Sadhyaroga of Shukravaha Srotodusti, where Dushita Vata and Pitta are connected. We may conclude that Oligo-asthenozoospermia belongs under the umbrella of Sukraduşţi, which includes a variety of different.

In the subject of Andrology, the study of herbal fertility agents is a key focus. It would be a huge help to the world's population, which is suffering greatly due to infertility, if the Vajikarana branch of Ayurveda could make a contribution to finding a solution to this issue. In addition to its aphrodisiac qualities, Vajikarna has a significant motto. "Apatya Santankaraha. it provides progeny to infertile couple, sexual potency to the impotent at the same time therapy assures the excellency of progeny. Avapeedaka Sneha is mainly indicated in Abhigata Vikaras, it alleviates Pitta and Vata & thus gives strength to pelvis and thighs. It is Balya and acts as Vrushya. According to Vagbhata, Avapeedaka Snehapana is administration of Sneha in large doses both before taking of food and after digestion of food, Sneha Virechana Karma is regarded as Shodhana's preferred method of managing Ksheena Shukra. Virechana Karma is one of Pitta's most important therapy methods. The reduction of Vata is another important benefit. Before providing Rasayana and Vajikarana, this is one of the recommended Shodhana Karma Acharya Kashyapa has glorified the importance of Virechana Karma in the management of Ksheena Shukra. Because it purifies. the Beeja (sperm) thus, making it effective in achieving Fertilization. It also improves sexual vigor (Vrishata) and helps in achieving good progeny (Apatya). Ksheena Shukra has been the subject of several investigations; however, an effective and safe formulation is still required to address this issue. For the present clinical study herbal formulation Aswattha Churna was selected. According to Acharya Sushruta Aswattha Churana is Vajikara Dravya.

Faulty eating habits (vishamashana) lead to improper formation of "Rasa" and subsequently irregular dhatu synthesis. Irregular and unhealthy dietary and life style routines play significantly with reproductive functions and cause infertility. On the other hand, complex carbohydrates such as whole grains and fresh fruit, improve fertility. These life style and diet irregularities may affect the metabolism and cause poor nutritional status and oligozoospermia.

Lower socio economic status leading to un-affordability of quality nutrition is vara provocative. Malnutrition is found associated with hypogonadism lending to a decrease of Leydig cell function which in turn causes reduced stimulation of LH, ultimately resulting in decreased testosterone secretion causing oligozoospermia.

DISCUSSION

Sperm abnormalities are a critical factor in male infertility. These abnormalities include.
Abnormalities related to sperm count.
Azoospermia: Absence of sperm in seminal plasma.
Low sperm count (oligozoospermia: <15 million sperms/mL).
Abnormalities related to sperm motility.

The efficient passage of spermatozoa through the cervical mucus depends on rapid progressive motility,[9,10] that is, spermatozoa with a forward progression of at least 25 μm/s. A normal semen analysis must contain at least 50% grade A and B, progressively motile spermatozoa. Persistent poor motility is a predictor of failure in fertilization.[11]

Abnormal sperm structure and shape (teratozoospermia)
For morphology of sperms, smears can be scored using the WHO classification, or by Kruger's strict criteria classification.[12] Morphology should be used along with other parameters, and not as an isolated parameter when determining clinical implications.[13] Environmental factors also result in disturbed reproductive functions. Testis is susceptible to heat, which causes disrupted

spermatogenesis after exposure. It was found that majority of men who were exposed to high temperature at their workplace-welders, dyers, blast furnace workers and those employed in cement and steel factories-were more prone to infertility. This is due to excess. environmental temperature causing a negative effect on sperm production. liven 1 elevation in testicular temperature is found to cause 14% depression of spermatogenesis Most of the workers who are working in hot temperature zone are more prone to testicular hyperthermic changes. Further, a decrease in sperm output in testicular hyperthermia has also been reported Addiction of smoking tobacco and excessive use of tobacco hamper the normal digestive pattern, resulting in malnourished state, ultimately resulting in oligozoospermia. A study of infertility evaluation of Indian men who were addicted to tobacco chewing has associated its use with decrease in sperm quality. The study showed that nicotine causes degenerative changes in the seminiferous tubules, which was revealed by altered general tubular architecture, decreased thickness of the spermatogenic cell masses, Sertoli cell vacuolation, and thickened basal lamina Cigarette smoke has also effects on spermatogenesis which may be due to toxic substances in the cigarette of the histologic reactions due to hypoxemia induced by smoke.

To procreate is natural instinct and if couple is not able to reproduce it gets socially and psychologically disturbed Psychological factors such as stress and worry which were reported in the present clinical trial have been listed as the causes of poor digestion (ajirna) leading to poor nutrition and oligozoospermia. Experimental studies show that there is hypothalamic testicular suppression due to stress which results in deranged spermatogenesis leading to oligozoospermia.

Causative factors primarily affect the hypothalamic pituitary-gonadal (HPG) axis, which results in hormonal imbalance and testicular damage causing reproductive failure and infertility. Hence, it is important to maintain hormones its normal state. FSH and LH exert their effect by binding to plasma membrane receptors of the target.

Probable mode of action of Virechana.
Vajikarana drugs (fertility enhancers) should be administered after purifying the body, ie, proper shodhana either by vamana or by virechana. Statistically highly significant increase in sperm count was found after the completion of virechana (66.07%) and hence, it is clear from the study that virechana enhances the level of shukra definitely. Previous study on oligozoospermia concluded that virechana should be performed before administration of vajikarana drugs and better and early changes in total sperm count can be achieved by virechana. In this study, significant result in sperm count and reduction in abnormal form of sperm along with significant effect on Serum LH hormone level was found Further, virechana possibly increases the bio-availability of drugs by opening channels production and also stimulates its effect. Roots of plant are considered to be appetizer and aphrodisiac. It is also considered as Rasayana, having effects like improved immunity, vitality, resistance against disease and stress and strenghth balyaj Studies show that the testosterone and estrogen are present in cow's milk. Cow milk and ghee are found promoter of the sexual stamina and semen quantity Study showed that association of dairy foods intake and semen quality parameters in a cohort of men. attending a fertility clinic and found that low-fat dairy food intake was associated with higher sperm concentration and motility Study on Ashwagandha experimental research has been carried out to address possible therapeutic modalities for the treatment of oligospermia showed that treatment with a high-concentration, full- spectrum root extract of Ashwagandha resulted in significantly improved semen parameters in concert with improved and regulated sexual hormone levels in oligospermic males. The analyses of the data indicated significantly increased sperm concentration and overall motility, which are regarded as the most important criteria for normal fertilizing ability of the spermatozoa. Study outcome showed significant improvement to increase the semen volume in the Ashwagandha treated infertile males. The extract might be acting through the stimulation of endogenous estrogens synthesis which contributes to male fertility. Increases in LH, FSH, and testosterone levels also indicate an effect on gonadotropin release hormone GnRH. GnRH agonist effect may be the mechanism involved in the androgenic and estrogenic activities evidenced in male rats.

Modern science approach
So far, no pharmacological treatments for stimulating spermatogenesis in primary testicular failure have been approved. The main therapeutic option for infertile men is assisted reproductive technologies (ARTs) followed by surgery.

Assisted Reproductive Technologies (ARTs)
In the USA, ~1% of successful births were attributed to ARTs in 2001. ARTs encompass ovarian stimulation, sperm retrieval, in-vitro gamete assessment, intrauterine insemination (IUI), intracytoplasmic sperm injection (ICSI), gamete and/or embryo cryopreservation, and IVFAlthough ART is the main procedure for effective subfertility treatment, its availability, accessibility, and affordability differ between countries, Surgical approaches, including robotic surgery, are increasingly used to treat particular types of male infertility not affordable and Reconstruction of the testes and scrotum for male infertility treatment may fall under simple hydrocelectomy; however, this could be complex in some cases.

CONCLUSION
In Modern science no pharmacological treatments given, some treatment modalities are costly, not available in rural areas, surgical complications are always there so

therefore evident that the treatment approach based on Ayurvedic principles can produce encouraging results in the management of Shukra Dosha (male infertility) not only in improvement in sexual functional parameters but also in increasing the quality and quantity of semen.

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