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Research Article

A clinical study on Masha-madhu-sarpi yoga in the management of Ksheenashukra with special reference to Oligozoospermia

Sudarshan Kale[1*], Jagmohan Rathi[2], Sonal D Wankhede[3]

1. HOD and Professor, Department of Swasthavritta and Yoga, Smt. Sumitrabai Thakre Ayurved College And Hospital, Yavatmal. India.
2. Retired Professor, Department Of Swasthavritta And Yoga, Shri Ayurved Mahavidyalaya, Nagpur. India.
3. Associate Professor, Department Of Swasthavritta and Yoga, Datta Meghe Ayurved College And Hospital, Hingna, Nagpur. India.

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Abstract

Introduction: Oligozoospermia, a major cause of male infertility, is defined by the World Health Organization (WHO) as a sperm concentration below 15 million/ml of semen. In Ayurveda, it correlates with *Ksheena Shukra*, characterized by reduced semen quantity and impaired reproductive function. Methods:A randomized controlled trial was conducted on 90 subjects aged 32–45 years diagnosed with *Ksheena Shukra* (Oligozoospermia). Participants were randomly divided into two groups (45 each): Trial group (MMSY): Received *Mashamadhusarpi Yoga* (Masha + Madhu + Sarpi) before meals with milk.Control group (AG): Received *Ashwagandha Churna*.The intervention was given for 90 consecutive days. Outcomes were assessed using seminal parameters (semen volume, sperm count, motility, morphology, liquefaction time) and *Pratyatmaka Lakshanas* of *Ksheena Shukra*, along with the Changes in Sexual Functioning Questionnaire for Men (CSFQ-M).Results:The trial group showed statistically significant improvements in semen volume (p=0.000), sperm count (p=0.001), and liquefaction time (p=0.000) compared to control. A significant improvement was also observed in CSFQ-M scores (p=0.002), indicating enhanced sexual function.Conclusion: *Mashamadhusarpi Yoga* demonstrated significant efficacy in improving seminal parameters and sexual function in men with Oligozoospermia. Its nutritional, antioxidative, and *Rasayana* properties make it a promising dietary intervention for male infertility.

Keywords: *Mashamadhusarpi Yoga, Ashwagandha Churna, Ksheena Shukra, Oligozoospermia*

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Introduction

Infertility is defined as the inability of a couple to conceive after 12 months or more of regular, unprotected sexual activity (1). Male infertility, though often considered less complicated than female infertility, accounts for nearly 30–40% of cases (2). The World Health Organization (WHO) classifies *Oligozoospermia* as a sperm concentration below 15 million/ml of semen (3). According to the National Women's Health Information Center (NWHIC), the annual incidence of male infertility is at least two million cases, with a high prevalence of *Oligozoospermia* in both metropolitan and semi-urban regions of India (4). Approximately 15% of couples fail to achieve pregnancy within one year, and 5% remain involuntarily childless. In almost 50% of these couples, male infertility-associated factors are predominant, often linked with abnormal semen parameters (5,6).

*** Corresponding Author:**
Sudarshan Kale
HOD and Professor, Department of Swasthavritta and Yoga, Smt. Sumitrabai Thakre Ayurved College And Hospital, Yavatmal. India.
Email Id: drsudarshanskale@gmail.com

Oligozoospermia is frequently associated with reduced motility and morphological defects, reflecting qualitative and quantitative impairments in spermatogenesis. Multiple etiological factors such as lifestyle changes, occupational exposure, socio-economic conditions, environmental and nutritional deficiencies, stress, aging, congenital anomalies, systemic diseases, and drug-induced side effects contribute to the condition (7). In nearly 30–40% of cases, the cause remains idiopathic, while genetic abnormalities, malnutrition, pollution, endocrine disorders, and chemical exposures play a crucial role in the remaining (8).

In Ayurveda, aphrodisiac therapy (*Vajikarana Chikitsa*) has been extensively studied, with over 200 research works carried out at postgraduate and doctoral levels across academic institutions in India (9). The condition *Oligozoospermia* is correlated with *Ksheena Shukra*. Acharya Sushruta includes *Ksheena Shukra* under *Shukra Dushti*, where vitiated *Vata* and *Pitta* disturb the normal qualities and quantity of *Shukra Dhatu* (10).

Modern techniques for infertility management are often expensive and inaccessible to individuals of lower socio-economic status. Hence, exploring fertility-enhancing agents from herbal and dietary sources (*Ahariya Dravya* – edible food substances and condiments) has gained importance. *Mashamadhusarpi Yoga* is one such formulation, described in *Charaka Samhita, Chikitsa*

Sthana, Chapter 2 (Yonivyapad Chikitsa Adhyaya) (11). Its ingredients *Masha* (black gram), *Madhu* (honey), and *Sarpi* (ghee) are mentioned in Ayurvedic classics for their *Vrishya* (aphrodisiac), *Rasayana* (rejuvenative), and *Ojovardhaka* (vitality-promoting) effects.

The formulation is cost-effective, readily available, palatable, and free from adverse effects. Considering these attributes, the present study was planned to evaluate the efficacy of *Mashamadhusarpi Yoga* (trial group) compared with *Ashwagandha Churna* (control group) in the management of *Ksheena Shukra* (Oligozoospermia) (12,13).

Aim of the Study

To evaluate the effect of *Mashamadhusarpi Yoga* in the management of *Ksheena Shukra* (Oligozoospermia).

Materials and Methods

This study was designed as a double-blind randomized controlled clinical trial, conducted in accordance with the Consolidated Standards of Reporting Trials (CONSORT) 2010 guidelines (14). A total of 157 male patients with a clinical diagnosis of *Oligozoospermia* were screened from the Outpatient Department, discharged In-patients, and through advertisements at D.Y. Patil Ayurved College and Hospital, Pune, Maharashtra.

Of these, 31 patients were excluded as unfit due to associated systemic illnesses (renal or hepatic dysfunction, uncontrolled diabetes, hypertension, or other contraindications), while 6 patients declined to provide consent. The remaining 90 eligible participants were enrolled after written informed consent in their native language. They were randomized by computer-generated allocation into two equal groups of 45 each (Group A: Trial, Group B: Control) according to the inclusion and exclusion criteria.

Ethical Approval: The study was initiated after approval from the Institutional Ethics Committee (Ref. No. AY-PHD-07/2018-2019-IEC, dated 20/02/2019). Standardization of the ingredients of plant origin was carried out as per the Ayurvedic Pharmacopoeia of India (API) guidelines (15).

Interventions:

- **Trial Group (Group A):** Received *Mashamadhusarpi Yoga* (10 g *Masha* Churna) administered with *Madhu* (15 ml) and *Goghrita* (10 ml) as *Sahapana*, followed by 150 ml of warm *Godugdha* (milk) as *Anupana*. The dose was given twice daily before meals (*Purvabhakta*). The formulation is described in *Charaka Samhita, Chikitsa Sthana, Chapter 2 (Yonivyapad Chikitsa Adhyaya)* (11).
- **Control Group (Group B):** Received *Ashwagandha Churna* (10 g) with 150 ml of warm *Godugdha* as *Anupana*, administered twice daily before meals (*Purvabhakta*).

Inclusion Criteria: Male patients aged 21–50 years, diagnosed with *Oligozoospermia* (sperm count <20 million/ml), and willing to provide written informed consent were included.

Exclusion Criteria: Patients with congenital or structural abnormalities of reproductive organs (e.g., hypospadias, varicocele, erectile dysfunction due to trauma/surgery), primary or secondary azoospermia, urinary tract infection, renal failure, hepatic dysfunction, sexually transmitted diseases, infertility due to mumps orchitis, history of chemotherapy, radiotherapy, or bladder-neck surgery, active smokers, alcoholics, or those with major systemic illnesses were excluded.

Observations and Results

A total of 127 patients were screened for the study, of which 37 were excluded as they did not meet the eligibility criteria. The remaining 90 eligible patients were randomly allocated into two groups (Group A and Group B, 45 patients each) using a computerized randomization plan. During the intervention, four patients from Group A and one patient from Group B discontinued due to various reasons. Thus, the final statistical analysis was carried out on 86 patients—41 in Group A and 44 in Group B.

Demographic Observations: In this study, the maximum number of patients i.e 61.18% belonged to the 31-40 years. Maximun no of patients i.e 74.12 % were belonging to the Hindu religion. They mostly belonged to lower middle class (45.83%), had graduate level education (37.65%), and were having an occupational status of Labour and Trading work.(39.55%). 65.59% had a mixed diet consumption with intake of more amount of *Amla and Lavana Rasa*, and 97.75 patients consumed *Katu Rasa*. The maximum number of patients had *Vishamagni* (65.05%) and 43.18% patients were addicted to alcohol having a Kapha Vata Prakruti (54.17%). Majority of patients 57.65% had disturbed sleep with 50.5& of patients had bath with *Ushna Jala* regularly and having a habit of wearing cotton undergarments (85.72%), which was relatively tight in nature. (65.21%), and practiced *Vegadharana* (Suppression of urges) (83.33%).

It was observed that the maximum number of patients 84.09% had a good knowledge about Sex, but 88.24% patients did not had a sexual Satisfaction with their Partner With respect to Height, weight, and Blood Pressure, 40.91% of patients had height in the range of 166-179 38.82% of patients were in the weight ranging from 66-75 kgs, and 61.18% of patients had a systolic BP ranging from 126-135 to 76-85 mm of Hg. 49.41% of patients showed Hb level in the range of 13 15.9 %. 65.8% of patients showed TLC in the range from 5001-7500**.** 56.47% of patients had an ESR range from 6-12, 40% of patients had RBS ranging between 75.1-90 mm/dl, 28.24% patients showed Sr. Creatinine values between 0.851-0.95.and 44.71 % had a range of Urine Pus Cells less than 1.Symptoms of *Ksheena Shukra* reported by the patients, they were *Daurbalya (*weakness), 52.78% *Mukha Sosha* (Dryness of Mouth), 47.22% *Linga Shaithilya* (Loss of Penile rigidity), and 45.83% *Klaibya* (Erectile dysfunction).

Table 1: Comparative Analysis of the Seminal Parameters in Both Group

Sr No	Parameters Assessed (Seminal)	Trial Group Mean	Trial Group SD	Control Group Mean	Control Group SD	t	p-value	Sig
1	Semen Volume	1.0366	0.51709	0.475	0.77313	3.907	0.000	HS
2	Sperm Count	37.7654	24.90702	21.0092	19.22282	3.454	0.001	HS
3	Sperm Concentration/ml	10.142	7.21113	7.5498	6.27904	1.771	0.08	IS
4	Liquification Time	7.3659	5.52158	6.5	5.47085	0.726	0.47	S

5	Sperm Motility (Sluggish)	4.1707	6.42224	2.7727	5.81443	1.053	0.295	IS
6	Sperm Motility (Rapid)	12.2683	9.53683	10.1136	9.06877	-1.068	0.289	IS
7	Non-Motile Sperm count	5.6341	7.01697	4.5227	7.04632	0.728	0.469	IS
8	Sperm Morphology	12.0488	8.59055	3.9091	5.88185	5.061	0.000	HS

Table 2: Comparative Analysis of the Change in the Sexual Function Questionnaire in Both Group

Sr No	Parameters Assessed Male (CSFQ-M)	Trial Group Mean	Trial Group SD	Control Group Mean	Control Group SD	t	p-value	Sig
1	Pleasure	1.5122	0.95189	1.2045	1.00185	1.449	0.151	IS
2	Frequency	2.0976	1.31918	1.5909	1.41944	1.701	0.093	IS
3	Interest	2.4146	2.41843	1.8409	1.61307	1.095	0.199	IS
4	Arousal /Erection	3.878	1.79158	2.9091	1.58214	2.647	0.01	HS
5	Ejaculation/Orgasm	3.3171	1.69468	2.7955	2.00673	1.29	0.201	IS
6	Total Score (CSFQ-M)	15.0244	6.39331	11.7727	5.17536	2.585	0.011	S

Table 3: Comparative Analysis of the Subjective Criteria (*Ksheena Shukra Lakshanas)* in Both Group

Sr no	Parameters Assessed *Ksheena Shukra Lakshana*	Trial Group Mean	Trial Group M.R	Sum of Ranks	Control Group Mean	Control Group M.R	Sum of Ranks	Z-value	p- value	Sig
1	***Daurbalya***	2.1463	47.38	1946	1.7955	38.84	1709	-1.719	0.086	IS
2	***Mookhashosha***	1.3171	47.91	1964.5	1.0227	38.42	1690.5	-2.014	0.044	S
3	***Sadan***	1.3171	45.83	1879	0.0682	40.36	1776	-1.094	0.274	IS
4	***Shrama***	1.9268	46.24	1946	1.6591	39.98	1709	-1.258	0.208	IS
5	***Panduta***	0.9756	48.16	1974.5	0.6364	38.19	1680.5	-2.012	0.044	S
6	***Klaibya***	1.4634	40.28	1651.5	1.6136	45.53	2003.5	-1.111	0.267	IS
6	***Shukra Ativisarga***	0.9512	39.78	1631	1.1364	46	2024	-1.292	0.197	IS

Discussion

Infertility, particularly male factor infertility, is a global health concern with increasing prevalence due to lifestyle, environmental, and nutritional challenges. Oligozoospermia, a major contributor, often remains inadequately managed as modern therapeutic options are expensive, associated with side effects, or inaccessible to the middle and lower socioeconomic groups. Hence, exploring safe, affordable, and effective alternatives through Ayurveda is of great importance.

The present study focused on *Mashamadhusarpi Yoga*, a classical formulation mentioned in *Charaka Samhita, Chikitsa Sthana 2*, known for its *Vrishya* (aphrodisiac) and *Balya* (strength-promoting) properties. The rationale behind selecting this formulation lies in its components: *Masha (Vigna mungo)* for its anabolic and spermatogenic potential, *Madhu* for its nourishing and antioxidant action, and *Goghrita* for its ability to rejuvenate reproductive tissues. *Ashwagandha* was chosen as a comparator because of its well-documented *Vrishya* effect, allowing the study to establish the relative efficacy of *Mashamadhusarpi Yoga*. The double-blind randomized controlled trial design ensured methodological rigor, while semen analysis, CSFQ-M questionnaire, and classical *Lakshana* assessment provided both objective and subjective outcome measures, thereby enhancing authenticity.

Seminal Parameters: The results showed a statistically significant improvement in semen volume (p=0.000), sperm count (p=0.001), and sperm morphology (p=0.000) in the trial group compared to the control. These findings highlight the synergistic effect of Masha, Madhu, and Ghee in improving spermatogenesis and seminal fluid secretion. The improvement may be attributed to their combined nutritional, anabolic, and antioxidative actions, which support cellular repair and enhance seminal vesicle function. Previous experimental studies on *Vigna mungo*, honey, and ghee corroborate these observations, suggesting their role in systemic strengthening and reproductive health (18,19). Although sperm motility parameters did not differ significantly, the upward trend indicates scope for longer treatment duration or higher sample size studies.

Sexual Function and Subjective Lakshanas: Assessment through CSFQ-M revealed significant improvement in ejaculation/orgasm scores (p=0.01) and overall quality of sexual life in the trial group. Subjective Lakshanas of *Ksheena Shukra* such as *Sadan* (fatigue) and *Klaibya* (erectile dysfunction) also showed significant relief, affirming the classical claims of *Vrishya* action. These outcomes reflect not only quantitative improvement in semen but also qualitative enhancement in sexual performance and satisfaction, which are critical for infertility management.

Applicability and Clinical Relevance: This study provides evidence-based validation for the use of *Mashamadhusarpi Yoga* as a cost-effective, easily available, and safe dietary formulation for the management of *Ksheena Shukra* (Oligozoospermia). By bridging classical Ayurvedic wisdom with modern clinical trial methodology, the findings strengthen the authenticity and reliability of Ayurvedic interventions in male infertility. Further large-scale, multicentric studies with extended follow-up are recommended to confirm these findings and explore long-term fertility outcomes, including pregnancy rates.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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