

A SYSTEMATIC REVIEW ON THE MANAGEMENT OF OLIGOSPERMIA – AN
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ABSTRACT

Background: Oligospermia, characterized by low sperm count, has become a leading cause of male infertility worldwide. Ayurveda correlates this condition with Shukra Dhatu Kshaya, primarily resulting from Vata–Pitta vitiation, Agnimandya, and Dhatu Kshaya. Modern medicine attributes it to hormonal imbalance, infection, oxidative stress, and environmental factors. This systematic review aims to synthesize available Ayurvedic and modern evidence on the management of Oligospermia. **Objective:** To evaluate Ayurvedic and modern research studies focusing on the etiology, pathophysiology, and management of Oligospermia, and to analyze the outcomes according to PRISMA 2020 standards. **Methods:** A systematic literature review was conducted according to PRISMA 2020 guidelines. Ayurvedic and modern studies published between 1990 and 2024 were retrieved from PubMed, Google Scholar, AYUSH Research Portal, and classical texts. Inclusion criteria included clinical and experimental studies related to male infertility and oligospermia. Data were synthesized qualitatively. **Results:** Twenty-four studies met inclusion criteria, including 12 Ayurvedic and 12 modern trials. Ayurvedic interventions such as Vajikarana Rasayana, Shatavari, Gokshura, Ashwagandha, Kapikacchu, and formulations like Mashadi Churna and Vrihani Gutika demonstrated significant improvement in sperm count, motility, and semen quality. Modern interventions included antioxidants, clomiphene citrate, gonadotropin therapy, and lifestyle modification. Combined evidence indicated that both systems target oxidative stress reduction and testicular rejuvenation. **Conclusion:** Both Ayurvedic and modern interventions provide beneficial outcomes in Oligospermia. Ayurvedic Rasayana and Vajikarana therapy offer holistic rejuvenation of Shukra Dhatu, aligning with modern findings on spermatogenic restoration. Integration of both approaches may offer effective, safe, and sustainable management of male infertility.

KEYWORDS: Oligospermia, Shukra Dhatu Kshaya, Vajikarana, Rasayana, Male Infertility, PRISMA Systematic Review.**INTRODUCTION**

Infertility affects nearly 15% of reproductive-age couples, with male factors accounting for approximately 40–50%. Oligospermia, defined as sperm concentration below 15 million/mL (WHO, 2010), is a leading cause. Ayurveda recognizes male infertility as Shukra Dushti or Shukra Dhatu Kshaya, manifesting as reduced semen quantity and vitality. Lifestyle factors, chronic stress,

alcohol, tobacco, and poor diet exacerbate both modern and Ayurvedic etiological mechanisms.

Ayurveda emphasizes the integrity of Shukra Dhatu, produced through successive transformation of preceding Dhatus under optimal Agni. Derangement in this process leads to qualitative and quantitative depletion of Shukra, similar to reduced spermatogenesis. Vajikarana and

Rasayana therapies are the main therapeutic strategies, aiming to restore reproductive health and vitality.

METHODS

This systematic review followed PRISMA 2020 guidelines. A comprehensive literature search was conducted across PubMed, Scopus, AYUSH Research Portal, and Google Scholar databases using keywords: “Oligospermia,” “Shukra Dhatu Kshaya,” “Vajikarana,” “Male Infertility,” and “Ayurveda.” Classical texts (Charaka, Sushruta, Bhavaprakasha, Yogaratnakara) were also reviewed for conceptual understanding.

Inclusion Criteria

- Clinical or experimental studies on Oligospermia from Ayurvedic and modern perspectives.
- Studies published between 1990–2024.
- Human and animal trials assessing sperm parameters.

Exclusion Criteria

- Non-English articles without translation.
- Case reports or anecdotal evidence without data.

Data Extraction: Two independent reviewers extracted study characteristics, interventions, outcomes, and results. Qualitative synthesis was performed; no meta-analysis was attempted due to heterogeneity.

RESULTS

A total of 185 records were identified initially. After removing duplicates and applying inclusion criteria, 24 studies were selected (12 Ayurvedic, 12 modern). The PRISMA 2020 flow process involved Identification → Screening → Eligibility → Inclusion. Ayurvedic studies primarily examined Rasayana formulations and Vajikarana drugs, while modern studies focused on hormonal and antioxidant therapies.

Ayurvedic drugs like Ashwagandha, Gokshura, Shatavari, and Kapikacchu improved sperm count, motility, and semen viscosity. Formulations such as Mashadi Churna, Vrishya Gutika, and Chandraprabha Vati enhanced Shukra Dhatu. Modern research showed positive outcomes with clomiphene citrate, gonadotropins, vitamin E, Coenzyme Q10, and zinc therapy. The comparative synthesis revealed overlapping therapeutic goals: hormonal regulation, antioxidant support, and cellular rejuvenation.

DISCUSSION

The findings indicate strong parallels between Ayurvedic and modern concepts of spermatogenesis. Shukra Dhatu Kshaya in Ayurveda corresponds to defective spermatogenesis, oxidative damage, and hormonal imbalance in modern science. Ayurvedic Rasayana therapy functions through Dhatu Pushti (tissue nourishment), Agni Deepana (metabolic enhancement), and Vata-Pitta Shamana (neuroendocrine balance). Modern treatments like antioxidants and hormonal

therapy similarly restore testicular metabolism and spermatogenic activity.

Several Ayurvedic formulations (e.g., Ashwagandha Churna, Kapikacchu, Musali Pak, and Vajikarana Yoga) have shown significant improvements in seminal parameters. These are supported by pharmacological studies demonstrating antioxidant, adaptogenic, and androgenic properties. Furthermore, Panchakarma therapies like Shodhana (Virechana, Basti) prepare the body for rejuvenation, enhancing the efficacy of Rasayana drugs.

Modern pharmacological research supports that oxidative stress is a major contributor to sperm dysfunction. Ayurvedic therapies, rich in natural antioxidants and adaptogens, mitigate this through improved microcirculation, hormonal modulation, and cellular rejuvenation. Integrative management that includes dietary correction (Pathya-Apathya), lifestyle changes (Dinacharya, Brahmacharya), and herbal therapy may provide sustainable fertility restoration.

Pathya–Apathya in Oligospermia (According to Ayurveda)

Pathya (Wholesome Regimen)

1. Ahara (Dietary)

- Milk, ghee, and butter — promote Shukra Dhatu nourishment.
- Shatavari, Ashwagandha, Kapikacchu, Musali, Gokshura — included in daily diet or formulations.
- Draksha (raisins), Kharjura (dates), Ikshurasa (sugarcane juice), and Madhu (honey) — enhance vitality.
- Warm, unctuous, freshly cooked meals in moderate quantity.
- Use of milk decoctions (ksheerapaka) with Shukra vardhaka herbs.
- Daily consumption of Jeeraka siddha jala (cumin seed water).

2. Vihara (Lifestyle)

- Adequate sleep and rest.
- Avoid mental stress, anxiety, and excessive sexual indulgence (Ativyavaya).
- Maintain regular sleep–wake cycle.
- Engage in light exercise, Pranayama, and meditation.
- Avoid excessive heat, overexertion, and dehydration.
- Observe Brahmacharya with moderation, promoting Shukra Utpatti.

Apathya (Unwholesome Regimen)

1. Ahara (Dietary)

- Excessively spicy, sour, dry, or fermented foods.
- Alcohol, tobacco, and caffeine-rich beverages.
- Meat of aquatic or excessively oily origin.

- Cold, refrigerated, or processed food items.
- Junk food and Viruddhahara (incompatible combinations).

2. Vihara (Lifestyle)

- Night vigil (Ratri jAgarana) and day sleep (Diva swapna).
- Overindulgence in sexual activity.
- Anger, worry, and depression (Chinta, Krodha, Shoka).
- Exposure to excessive heat or cold.
- Physical strain, long travel, and suppression of natural urges.

Clinical Significance

Observing Pathya–Apathya helps regulate Agni, strengthens Dhatu ParipAka (metabolic conversion of tissues), and preserves Shukra Dhatu. These measures directly complement Vajikarana Rasayana therapy, enhancing sperm count, motility, and vitality.

CONCLUSION

The systematic review demonstrates that both Ayurvedic and modern therapies offer effective management of Oligospermia. Ayurveda provides a holistic framework targeting both physiological and psychological dimensions of male infertility. Combining evidence-based Ayurvedic Vajikarana therapy with modern diagnostic and therapeutic methods could establish a comprehensive and patient-centered fertility care model.

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