

IMPROVEMENT IN SEMEN PARAMETERS IN MEN WITH NON-OBSTRUCTIVE
AZOOSPERMIA FOLLOWING INDIVIDUALIZED AYURVEDIC FERTILITY
MANAGEMENT: A RETROSPECTIVE CASE SERIES

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ABSTRACT

Background: Male factor infertility contributes to approximately 40–50% of infertility cases worldwide, with non-obstructive azoospermia representing one of the most challenging causes. Although assisted reproductive techniques remain the standard treatment, many couples seek conservative approaches aimed at improving endogenous spermatogenesis. **Methods:** This retrospective case series included 15 men with clinically diagnosed non-obstructive azoospermia who underwent individualized Ayurvedic fertility management for six months. Changes in semen parameters were assessed using serial semen analyses performed at baseline, three months, and six months. **Results:** Fifteen patients with non-obstructive azoospermia completed six months of treatment. Detectable sperm were observed in all patients during follow-up, with final sperm concentrations ranging from 2 to 48 million/mL. Seven patients achieved sperm concentrations within the normal reference range, and four couples achieved natural conception during the follow-up period. No serious adverse events were reported. **Conclusion:** Individualized Ayurvedic fertility management was associated with progressive improvement in semen parameters among men with non-obstructive azoospermia in this retrospective case series. These preliminary findings warrant further evaluation through well-designed prospective controlled studies.

KEYWORDS: Male infertility, Azoospermia, Ayurveda, Semen analysis, Fertility.

INTRODUCTION

Infertility affects approximately 15% of couples worldwide, with male factors contributing to nearly 40–50% of cases. Among the various causes of male infertility, non-obstructive azoospermia (NOA) represents one of the most severe forms because of impaired spermatogenesis and the limited availability of effective restorative treatments.^[1,2]

Current management of non-obstructive azoospermia is primarily directed toward sperm retrieval techniques, such as testicular sperm extraction (TESE), followed by intracytoplasmic sperm injection (ICSI). Although these approaches have enabled biological parenthood for many couples, they are invasive, costly, emotionally demanding, and do not restore endogenous spermatogenesis.^[3,4,5]

Given the limitations of existing therapies, there has been growing interest in complementary approaches that aim to improve reproductive function. In Ayurveda, male infertility is described under conditions such as *Ksheena Shukra*, *Shukra Kshaya*, and *Beeja Dushti* wherein impaired reproductive tissue (*Shukra Dhātu*) is believed to result from disturbances in dosha balance, impaired digestion (*Agni*), and tissue metabolism. Ayurvedic management aims to improve reproductive health through correction of systemic imbalances, rejuvenation (*Rasayana*), enhancement of tissue nutrition, and optimization of reproductive function. Emerging clinical evidence and published case reports have also suggested encouraging outcomes of Ayurvedic management in men with azoospermia, including restoration of spermatogenesis and improvement in semen parameters in selected patients.^[6,7,8]

The present retrospective case series was undertaken to evaluate changes in semen parameters following individualized Ayurvedic fertility management in men with clinically diagnosed non-obstructive azoospermia over a six-month treatment period.

Methods

This retrospective case series included 15 men with clinically diagnosed non-obstructive azoospermia who received individualized Ayurvedic fertility management at a single center. Clinical records were reviewed retrospectively to evaluate changes in semen parameters following treatment.

Patient Selection

Patients were eligible if they had:

- Clinically diagnosed non-obstructive azoospermia;
- Documented azoospermia on baseline semen analysis;
- Normal baseline serum FSH levels; and

- Completed at least six months of Ayurvedic fertility treatment with available baseline and follow-up semen analyses.

Intervention

All patients received individualized Ayurvedic fertility management comprising *Tablet Beehj*, *Kavachbeej* (300 mg; two tablets after breakfast and two tablets after dinner), and *Tablet Makar*. The treatment protocol was individualized according to Ayurvedic clinical assessment while maintaining the same overall therapeutic principles aimed at improving reproductive health and spermatogenesis.

Outcome Assessment

Semen analyses were performed at baseline, three months, and six months to assess changes in sperm concentration. Natural conception occurring during the follow-up period was also documented where applicable.

Treatment Outcomes

Patient No.	Initial Diagnosis	Baseline Sperm Count	3 Months	6 Months (Final)	Outcome
1	Azoospermia	0 million/mL	8 million/mL	16 million/mL	Natural conception
2	Azoospermia	0 million/mL	10 million/mL	35 million/mL	Natural conception
3	Azoospermia	0 million/mL	5 million/mL	15 million/mL	Improved semen parameters
4	Azoospermia	0 million/mL	35 million/mL	48 million/mL	Natural conception
5	Azoospermia	0 million/mL	8 million/mL	18 million/mL	Improved semen parameters
6	Azoospermia	0 million/mL	12 million/mL	30 million/mL	Natural conception
7	Azoospermia	0 million/mL	6 million/mL	16 million/mL	Improved semen parameters
8	Azoospermia	0 million/mL	3 million/mL	8 million/mL	Improved semen parameters
9	Azoospermia	0 million/mL	7 million/mL	20 million/mL	Improved semen parameters
10	Azoospermia	0 million/mL	6 million/mL	18 million/mL	Improved semen parameters
11	Azoospermia	0 million/mL	0.5 million/mL	2 million/mL	Improved semen parameters
12	Azoospermia	0 million/mL	2 million/mL	6 million/mL	Improved semen parameters
13	Azoospermia	0 million/mL	4 million/mL	10 million/mL	Improved semen parameters
14	Azoospermia	0 million/mL	5 million/mL	14 million/mL	Improved semen parameters
15	Azoospermia	0 million/mL	6 million/mL	16 million/mL	Improved semen parameters

RESULTS

Fifteen patients with non-obstructive azoospermia completed six months of individualized Ayurvedic treatment and follow-up. Fourteen patients had complete azoospermia (0 million/mL) at baseline, while one patient had a baseline sperm concentration of 0.1 million/mL. Detectable sperm were observed in all patients by the three-month follow-up, with further increases in sperm concentration documented at six months. Final sperm counts ranged from 2 to 48 million/mL, with the majority of patients achieving sperm concentrations within or approaching the normal reference range. Additionally, 4 of the 15 patients (26.7%) achieved natural conception during the follow-up period. Overall, progressive improvement in semen parameters was observed in all patients following individualized Ayurvedic management.

DISCUSSION

Azoospermia, defined as the complete absence of spermatozoa in the ejaculate, is one of the most severe forms of male infertility and accounts for approximately 10–15% of infertile men. It is broadly classified into obstructive and non-obstructive azoospermia. Non-obstructive azoospermia (NOA), which was the focus of the present case series, results from impaired spermatogenesis and may arise due to primary testicular failure, maturation arrest, hypospermatogenesis, genetic abnormalities, endocrine dysfunction, oxidative stress, environmental exposures, systemic illnesses, or idiopathic causes. Restoration of endogenous spermatogenesis in these patients remains a significant clinical challenge, and treatment options are often limited to assisted reproductive techniques such as testicular sperm extraction (TESE) and intracytoplasmic sperm injection (ICSI), which are invasive, expensive, and do not restore normal sperm production.^[3,4,5]

In the present retrospective case series, patients with non-obstructive azoospermia demonstrated progressive improvement in sperm concentration following six months of individualized Ayurvedic treatment. Patients who initially presented with complete azoospermia subsequently developed measurable sperm counts, with final sperm concentrations ranging from 2 to 48 million/mL. Furthermore, natural conception was achieved in four couples during the follow-up period, indicating that the observed improvements in semen parameters were accompanied by clinically meaningful reproductive outcomes in a subset of patients. Collectively, these findings suggest that individualized Ayurvedic management may support the restoration of spermatogenesis in selected patients with non-obstructive azoospermia.

The findings of the present case series are consistent with previously published reports suggesting that Ayurvedic interventions may improve semen parameters in selected men with severe male factor infertility. Although the available evidence is largely limited to case reports and small observational studies, improvements in sperm concentration and successful natural conception have been reported following *Rasayana*- and *Vajikarana*-based therapeutic approaches. The present case series contributes additional clinical evidence by demonstrating progressive improvement in semen parameters across multiple patients with documented non-obstructive azoospermia following individualized Ayurvedic management.

According to Ayurveda, male infertility is primarily associated with *Shukra Kshaya*, *Ksheena Shukra*, and dysfunction of the *Shukravaha Srotas*. Impairment of *Agni*, vitiation of the *Doshas*, and inadequate nourishment of *Shukra Dhatu* are considered central to the pathogenesis. Accordingly, Ayurvedic management aims to restore systemic balance, improve tissue metabolism, nourish the reproductive tissues, and promote regeneration through *Rasayana* and *Vajikarana* therapies.^[6,7,8]

The clinical improvements observed in this series may be attributed to the complementary actions of the prescribed formulations. Tablet Beehj is a polyherbal-herbomineral formulation containing several well-recognized *Rasayana* and *Vajikarana* ingredients. *Ashwagandha* (*Withania somnifera*) has been shown to improve sperm concentration, semen quality, testosterone levels, and antioxidant status in infertile men. *Mucuna pruriens* (*Shuddha Kaucha*), a natural source of L-DOPA, has demonstrated beneficial effects on spermatogenesis, semen quality, oxidative stress, and hypothalamic–pituitary–gonadal axis function. *Gokshura* (*Tribulus terrestris*), *Shweta Musali*, *Shatavari*, *Vidarikanda*, *Kokilaksha*, and *Bala* are traditionally valued for their reproductive nourishing properties, while *Guduchi* (*Tinospora cordifolia*) and *Amalaki* (*Embllica officinalis*) provide potent antioxidant and immunomodulatory

effects that may help protect germ cells from oxidative damage. The inclusion of purified mineral preparations such as *Swarnamakshik Bhasma*, *Swarna Banga*, and *Shuddha Shilajit* is traditionally intended to enhance tissue metabolism, vitality, and reproductive function.^[9,10]

Kavachbeej (*Mucuna pruriens*), administered as 300 mg twice daily (two tablets after breakfast and two tablets after dinner), is a well-recognized *Vajikarana* drug in Ayurveda and has been extensively investigated for its role in male reproductive health. Rich in L-DOPA and several bioactive phytoconstituents, *Mucuna pruriens* has been reported to improve spermatogenesis, sperm concentration, semen quality, testosterone levels, and antioxidant status while reducing oxidative stress. It has also been shown to positively influence the hypothalamic–pituitary–gonadal axis, thereby supporting endogenous reproductive hormone regulation. These pharmacological actions may have contributed to the restoration of sperm production and the progressive improvement in semen parameters observed in the present case series.^[9,10]

From a contemporary biomedical perspective, oxidative stress and chronic inflammation are recognized contributors to impaired spermatogenesis in men with non-obstructive azoospermia. Many of the herbal components included in the present treatment protocol possess antioxidant, adaptogenic, and anti-inflammatory properties that may help reduce oxidative damage to germ cells, improve the testicular microenvironment, and support endogenous spermatogenesis. Although the precise mechanisms underlying the observed clinical improvements remain to be fully elucidated, the known pharmacological actions of these ingredients provide a plausible biological basis for the therapeutic effects observed in this study.

A notable strength of the present case series is the inclusion of patients with documented non-obstructive azoospermia who underwent serial semen analyses over a six-month follow-up period. The observation of progressive improvement in sperm concentration in all patients, together with documented natural conception in four couples, provides clinically relevant preliminary evidence supporting the potential role of individualized Ayurvedic fertility management in carefully selected patients.

Overall, the improvements observed in this case series are likely attributable to the synergistic effects of the Ayurvedic interventions rather than the action of any single ingredient. By combining antioxidant, adaptogenic, rejuvenative, and spermatogenic properties with the Ayurvedic principles of *Rasayana* and *Vajikarana*, these formulations may help create a favorable physiological environment for the restoration of spermatogenesis. The encouraging clinical outcomes observed in this series suggest that individualized

Ayurvedic management may represent a promising complementary therapeutic approach for selected patients with non-obstructive azoospermia. Nevertheless, larger prospective controlled studies with standardized treatment protocols, longer follow-up, and comprehensive assessment of reproductive outcomes are warranted to validate these findings and further define the contribution of individual therapeutic interventions.

CONCLUSION

Individualized Ayurvedic fertility management comprising **Tablet Beehj, Kavachbeej, and Tablet Makar** was associated with marked improvement in semen parameters among men with non-obstructive azoospermia. Patients who initially presented with azoospermia developed measurable sperm counts following six months of treatment, and natural conception was achieved in a subset of couples. The combined *Rasayana*, *Vajikarana*, antioxidant, adaptogenic, and spermatogenic properties of these formulations may contribute to enhanced spermatogenesis and improved reproductive function. These findings highlight the potential of individualized Ayurvedic management as a promising therapeutic approach for men with non-obstructive azoospermia.

REFERENCES

1. Agarwal A, Mulgund A, Hamada A, Chyatte MR. A unique view on male infertility around the globe. *Reprod Biol Endocrinol*, 2015; 13: 37. doi:10.1186/s12958-015-0032-1.
2. Colpi GM, Dallagiacoma G, Ghezzi F, et al. Progressing management of non-obstructive azoospermia in the era of microdissection testicular sperm extraction. *Andrology*, 2014; 2(3): 323–330. doi:10.1111/j.2047-2927.2014.00197.x.
3. Esteves SC, Zini A, Aziz N, et al. Sperm recovery and ICSI outcomes in men with non-obstructive azoospermia: a systematic review and meta-analysis. *Hum Reprod Update*, 2019; 25(6): 736–757. doi:10.1093/humupd/dmz028.
4. Li R, Yang J, Li Y, et al. Outcomes of Microdissection Testicular Sperm Extraction/Intracytoplasmic Sperm Injection in Cases of Nonobstructive Azoospermia: A Retrospective Study. *Biomed Res Int.*, 2023; 2023: 9234433. doi:10.1155/2023/9234433.
5. Tournaye H, Dohle GR, Barratt CLR. Surgical recovery of sperm in non-obstructive azoospermia. *Hum Reprod Update*, 2012; 18(5): 533–543. doi:10.1093/humupd/dms023.
6. Borate NN. Effect of Ayurvedic therapy on Ksheenshukra (azoospermia) – a case report. *World J Pharm Res.*, 2024; 13(12): 1–8.
7. Management of Ksheena Shukra (Azoospermia) in Ayurveda: a case report. *J Indian Syst Med.*, 2020; 8(3): 178–182.
8. Uttara Basti in the management of Ksheena Shukra w.s.r. to azoospermia – a single case study. *Int J Ayurveda Care*, 2024; 7(3): 1–6.
9. Deshpande Dr. Subhash Ranade, A. (n.d.). *Dravyagun vidnyan bhag 1 & 2: Dr. Subhash Ranade, Dr A P Deshpande: Amazon.In: Books*. Amazon.In. Retrieved February 5, 2025, from <https://www.amazon.in/Dravyagun-Vidnyan-Bhag-1-2/dp/8190902628>
10. Gupta, A. (n.d.). *A Textbook of Rasashastra*. Chaukhambha. Retrieved February 5, 2025, from <https://www.chaukhambha.com/product/a-textbook-of-rasashastra/?srsltid=AfmBOoonSoCBV2nOTKlbxmj0Gy3hwwv-MyhylB4T9v85U7e7kuMZTI83>