

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH

SJIF Impact Factor 8.453

Volume 14, Issue 14, 634-649.

Case Study

ISSN 2277-7105

ROLE OF BASTYANDA BALADI YAPANABASTI IN THE MANAGEMENT OF KSHEENASHUKRA (OLIGOSPERMIA) - A CASE REPORT

Dr. Sanjay M. Kadlimatti*1 and Dr. Savitri Masali²

¹Professor, Dept. of *Kayachikitsa*, BLDEAs AVS Ayurveda Mahavidyalaya Hospital and Research Centre, Vijayapura, Karnataka, India.

²PG Scholar, Dept. of *Kayachikitsa*, BLDEAs AVS Ayurveda Mahavidyalaya Hospital and Research Centre, Vijayapura, Karnataka, India.

Article Received on 23 May 2025,

Revised on 12 June 2025, Accepted on 02 July 2025

DOI: 10.20959/wjpr202514-37523



*Corresponding Author Dr. Sanjay M. Kadlimatti

Professor, Dept. of

Kayachikitsa, BLDEAs

AVS Ayurveda

Mahavidyalaya Hospital and

Research Centre,

Vijayapura, Karnataka,

India.

ABSTRACT

In a country like India, where overpopulation is a pressing issue, infertility remains a serious concern that can lead to marital disharmony. Infertility is a medical condition affecting either the male or female reproductive system, characterized by the inability to conceive despite having regular, unprotected sexual intercourse for 12 months or more. A couple patients from Vijayapura visited the Kayachikitsa OPD of BLDEA's AVS Ayurveda Mahavidyalaya Hospital and Research Centre Vijayapura, on 1/8/2023, with the chief complaint of being unable to conceive his partner despite of having unprotected coitus for five years of married life. Based on examination and semen analysis report, he was diagnosed with Ksheenashukra (Oligospermia). He was treated with Virechana followed by Bastyanda Baladi Yapanabasti, and Matrabasti with Ashwagandha Ghrita. This treatment successfully reversed the pathology from Oligospermia to a normal semen study. The present study concludes that the combined effect of Bastyanda Baladi Yapanabasti and other Vajikarana Yogas has shown excellent results in significantly improving sexual and seminal parameters in cases of Oligospermia.

KEYWORDS: Ksheenashukra, oligospermia, Virechana, bastyanda baladi yapanabasti.

INTRODUCTION

Infertility is a medical condition affecting either the male or female reproductive system, characterized by the inability to conceive despite having regular, unprotected sexual intercourse for 12 months or more. Causes of male subfertility related to congenital, acquired, or idiopathic factors that impair the process of spermatogenesis. Testicular hypotrophy is a potential cause of reduced semen quality resulting in conditions such as Oligospermia (absent or reduced sperm count), asthenozoospermia (decreased sperm motility), and Teratozoospermia (abnormal sperm morphology). Oligospermia refers specifically to the condition in which sperm concentration is below the lower reference limit of 15 million sperm/mL of ejaculate. It may be due to loss of a portion of an ejaculate, partial obstruction of the genital tract, drugs or genetic abnormalities. Around 31% of male are suffering from this condition.

According to *Ayurveda*, *Shukra* is considered as the 7th *Dhatu* amongst the 7 *Dhatus* which constitutes the body^[4] and is considered as the *Sara* (essence) of all the *Dhatus*. It gets its nourishment from the former *Dhatu* (*Majja*, the 6th *Dhatu*).^[5] Its function is *GarbhaPrasadaj*^[6] (to produce progeny), *Dhairya* (courage), *Chyavana* (ejaculation), *Priti* (affection), *DehaBala* (strength of body), *Harsha* (pleasure) and *Beejartha* (purpose of seed).^[7]

Shukravahasrotas is important one among the *srotas*, any physiological disturbance in the *srotas* may cause pathology in *srotas* and induces oligozoospermia like pathology. Oligozoospermia can be co-related with *Kshinashukra* in *Ayurveda*. *Kshinashukra* is a *vyadhi* in which *Shukra Dhatu* is quantitatively and qualitatively vitiates but in oligozoospermia there is quantitative reduction of sperms.^[8]

There are multiple options while searching for treatment of the *ksheenashukra* like *Ahara*, *aushadha*, *rasayana*, vajikarana and *panchakarma* including Basti chikitsa. As *Maharshi Charaka* states that "*Basti Vataharanam Shreshtham*".

In *Ksheena-Shukra*, *Ayurveda* has *YapanaBasti* as a treatment; *YapanaBasti* is mainly indicated for nourishment of components of the body. While thinking about *Shukra-Janan* (increase in sperm count), Here *Samanya Vishesha Siddhant* comes to the rescue. *Siddhant* based on the qualities of substances which either increases or decrease quality and quantity of *Dravya*, *Guna and Karma*. [9]

Thus with this understanding, Testicles of Goat (DravyaSamanya) was used for YapanBasti for Shukrajanan.

CASE REPORT

A 28 year old male patient, farmer by occupation, residing in vijayapura, visited to Kayachikitsa OPD of BLDEA's AVS Ayurveda Mahavidyalaya Hospital & Vijayapur on 1/8/2023, presented with chief complaints of Unable to get a child despite of unprotected coitus since 5 years of married life. On the basis of patient's complaints and semen analysis reports Patient was diagnosed as Oligospermia/ksheenashukra according to Ayurvedic view.

HISTORY OF PRESENT ILLNESS

Patient was apparently normal 5 years back. After getting married he was unable to conceive his partner (even after regular unprotected sexual intercourse). There was no any history of delayed ejaculation, pre-mature ejaculation, erectile dysfunction, they decided to consult a doctor and husband was diagnosed with kshinashukra /oligospermia.

HISTORY OF PAST ILLNESS

- ➤ No/H/o DM2, HTN and Thyroid disorder.
- ➤ No/H/o Trauma and Surgery
- Patient has never suffered from any chronic medical illness, Infections like TB, mumps, orchitis, sexually transmitted infections and genitourinary tract infections.

FAMILY HISTORY

Female partner has no any health issues regarding conceive.

PERSONAL HISTORY

- ➤ Diet Mixed (both veg and non-veg)
- ➤ Appetite Normal
- ➤ Sleep Sound sleep
- ➤ Bowel Clear, 1time/day (Prakruta Varna and Gandha)
- ➤ Micturition Clear, 5-6 times/day
- ➤ Habits No as such

GENERAL EXAMINATION

- Built Moderate
- Nourishment Moderate

- > Pallor Absent
- > Icterus Absent
- Cyanosis Absent
- Clubbing Absent
- > Edema Absent
- ➤ Lymphadenopathy Absent

SYSTEMIC EXAMINATION

CVS : S1 S2 heard normal, No murmurs and No added sounds

RS : Air Entry B/L equal and no added sounds

CNS : Patient is conscious, well oriented to person place and time.

P/A : Soft and non-tender

LOCAL EXAMINATION (REPRODUCTIVE SYSTEM)

- > secondary sexual characters- normal (Pubic hairs, Axillary hairs, Beards and Moustache)
- ➤ Prepuce skin: Normal with both testes are descended
- > Testicles: descended and No tenderness
- > Spermatic cord: No any abnormality
- Penis: No abnormality detected

The local examination did not show any anatomical abnormalities and there were no signs of inflammation, ulceration or rashes on scrotum, penis, or testes.

VITALS

| PR | 76 bpm |
|------|-------------|
| BP - | 130/80 mmhg |
| Temp | 98.4°F |
| RR | 18 cpm |

DASHAVIDHAPARIKSHA

- 1. Prakruti - Vata Pitta
- 2. Vikruti - Hetu
- Consumption of more rukshahara, Shushkaahara, KatuTikta Ahara. a. Ahraja
- b. Viharaja - Excessive exertion, Maruta and Atapasevana.
- c. Manasika Chinta, Krodha
- d. Dosha - Vata Pitta Pradhana

World Journal of Pharmacy and Pharmaceutical Sciences

Kadlimatti et al.

- e. Dushya Rasa, Shukra
- f. Prakruti Chirakari
- g. Desha Jangala
- h. Kala Grishma
- i. Bala Madhyama
- 3. Sara Madhyama
- 4. Samhanana Madhyama
- 5. *Pramana* Height: 5 feet and Weight: 52 kg
- 6. Satmya Madhyama (katu, amla, lavana rasa satmya)
- 7. Satva Madhyama
- 8. Ahara shakti
- a. Abhyavaranashakti Madhyama
- b. Jaranashakti Madhyama
- 9. Vyayamashakti Madhyama
- 10 Vaya Madyama

ASTASTHANAPARIKSHA

- 1. *Nadi* $-V\uparrow\uparrow K\uparrow$
- 2. *Mutra* 5-6 times/day (*Prakrutavarna* and *gandha*)
- 3. *Mala* clear, 1 time/day (*Prakrutavarna* and *gandha*)
- 4. Jivha Nirama
- 5. Shabda Prakruta
- 6. Sparsha Anushna
- 7. Drik Prakruta
- 8. Akruti Madhyama

INVESTIGATIONS

Semen analysis: On 18/8/2022 (Table no-1) before treatment

Count – 7.4 million/ml

Motility – Active Progressive 40%

Slowly Progressive - 30%

Immotile – 30% Impression – Oligo-spermia

Table 1: SEMENA ANALYSIS REPORT (Before treatment), (fig-1.1 and fig 1.2).

| PARAMETERS | REUSLT |
|--|-------------|
| Concentration | 7.4M/ml |
| Total motile | 70% |
| Progressive motility | 40 % |
| Non progressive | 30% |
| Immotility | 30 % |
| Normal forms | 10% |
| Motile sperm concentration | 5.2M/ml |
| Progressive Motile sperm concentration | 3.0M/ml |
| Sperm motility index | 27 |
| TOTALS PER EJACULATE | |
| Sperm# | 18.5Ml/Ejac |
| Motile sperm | 13.0Ml/Ejac |

CLINICAL FINDINGS

The physical examination and examination of external genitalia did not reveal any abnormal findings. Latest report of semen analysis showed 89% non-motile sperm in a total of 3 million/ml counts, though his semen quantity was sufficient.

DIAGNOSIS, ASSESSMENT AND TREATMENT

In the view of symptoms, the present case was diagnosed as Kshinashukra (Oligospermia). The assessment was done by comparing baseline seminal parameters. Total two assessments were carried out, before the treatment (table 1) and after treatment (table 6).

TREATMENT GIVEN

Table 2: 1st sitting – Shodhanachikitsa from (1/8/2023 to 7/8/2023).

| | AshwagandhaGhrita | |
|-------------------------------------|---|--|
| Cu shamana | 1 st day- 30 ml | |
| Snehapana | 1 st day- 30 ml 2 nd day - 60 ml | |
| | 3 rd day-90 ml | |
| SarvangaAbhyanga and Bhashpaswedana | Ashwagandhabalataila | |
| Virechana | Trivrutlehya (50gm) | |
| virechana | 14 vegas seen | |

Table 3: After Shodhana shamanoushadhi's from (8/7/2023 to 22/8/2023).

| Countplus granules | 1 tsf with milk for 1 month | |
|--------------------|-----------------------------|--|
| Tab Neo | 1 BD after food for 1 month | |
| Tab Addyzoa | 1 BD after food for 1 month | |

Table 4: 2nd Sitting *YogaBasti* from (24/8/2023 to 31/8/2023).

Yogabasti- BastandaBaladiYapanabasti was planned

| SarvangaAbhyanga and Bhashpaswedana | AshwagandhabalaTaila |
|-------------------------------------|---------------------------------------|
| | Madhu- 40 ml |
| | Saindhavalavana- 3gm |
| | Sneha- AshwagandhaGhrita (50ml) |
| | Kalkadravya- |
| Niruhabasti | 1) kapikachhuchoorna |
| Nirunavasti | 2) Ashwagandhachoorna |
| | 3) Shatavarichoorna |
| | 4) Muslichoorna |
| | Kwatha- Balamoolakshirakwatha (200ml) |
| | BastyandaRasa (100 ml) |
| AnuvasanaBasti | Ashwagandhaghrita (50 ml) |

Table 5: Shamanoushadhi after Bastikarma from (1/9/2023 to 15/9/2023).

| Count plus granules | 1 tsf with milk | for 15 days |
|---------------------|-----------------------|-------------|
| Tab Neo | 1 BD 1-0-1 after food | for 15 days |
| Tab Spemen | 1 BD 1-0-1 after food | for 15 days |

Table 6: SEMENA ANALYSIS REPORT (After treatment), (fig 2.1 and fig 2.2).

| PARAMETERS | REUSLT |
|--|----------------|
| Concentration | 27.2M/ml |
| Motility | 90% |
| Progressive | 81% |
| Rapidly Progressive | 69% |
| Slow progressive | 12% |
| Non progressive | 9% |
| Immotile | 10 % |
| Normal forms | 19% |
| Motile sperm concentration | 24.4M/ml |
| Progressive motile sperm concentration | 22.0M/ml |
| Rapid Progressive motile sperm concentration | 18.9M/ml |
| Slow progressive motile sperm concentration | 3.3M/ml |
| Functional sperm concentration | 8.3M/ml |
| Velocity | 48mic/sec |
| Sperm motility index | 17218.5Ml/Ejac |

Table 7: OBSERVATION AND RESULT.

| PARAMETERS | Before treatment | After Treatment |
|-----------------|------------------|-----------------|
| Concentration | 7.4M/ml | 27.2M/ml |
| Motility | 70% | 90% |
| Progressive | 40% | 81% |
| Non progressive | 30% | 9% |
| Immotile | 30% | 10 % |
| Normal forms | 10% | 19% |

| Motile sperm concentration | 5.2M/ml | 24.4M/ml |
|--|---------|----------|
| Progressive motile sperm concentration | 3.0M/ml | 22.0M/ml |
| Sperm motility index | 27 | 172 |

DISCUSSION

Infertility not only affects sexual life but also affects the psychological harmony, and social relation of the couple. The incidence of male infertility is about 50% of infertile couples. It may vary from place to place, nation to nation but magnitude of the problems remains the same [10]. Considering the wide spread nature in the society and its depth of causing innumerable problems, Infertility has direct relationship with impairment Shukravahasrotas leads to shukradusti (oligozoospermia). [11]

The Nidana (~causative factors) attributed could be Asatmyabhojana, Vegasandharana, Manasikavikaras (~mental factors), etc., due to which Vata-pitta vitiation occurs which in the *Jatharagni* (~digestive turn vitiates fire) resulting in the production of Amadosha (~product of indigestion). The Amadosha obstructs carrying nutrient fluids) the *Rasavahasrotas* (~channels and thus affects the Dhatuparinama (~tissue transformation), i.e. Rasa dhathu (~primary product of digested food) formation. Therefore, the progressive metamorphosis of Dhatu (~major structural components of the body) is hampered resulting in improper formation of Shukradhatu [12]

Virechana -Vajikarana drugs (~aphrodisiac recipes) should be administered after proper Shodhana either by Vamana or by Virechanakarma. It is clearly stated that without shodhana, Vajikarana treatment is of no use. Shodhana procedures mainly Virechana are described for the management of ShukraDosha. [13] Virechana Karma increases the bioavailability of drugs by opening channels and by improving the nutritional assimilation which may lead to increase serum LH level. [14]

The line of treatment of Kshina Shukra is Brimhana Chikitsa and Vrishya dravya prayoga which are having Shukra Vriddhikara properties. Yapana Basti possesses the best Brihmana and rasayana effect. Basti chikitsa has Aashukari action which can be beneficial for good quality and quantity of sperm and it should definitely help for tackling Beeja-Dushti and also quantitatively increase the count and concentration. [9]

Bastanda Baladi Yapana basti^[14]

Basti Karma is considered as the best treatment in Shukra Dosha by Charka's statement "Prashashtha-ShukradosheshuBasti Karma Visheshatha". The ingredients used in Preparation of Basti are Bala, Ashwagandha, Kapikachu, musli, shatavarichoorna and Ashwagandhadi Ghrita, along with Ksheera. Because these are specially attributed with the property of Vrushya, Shukrala, Brumhana, Rasayana, Dipana and Srotoshodhana which enhance the quality and quantity of Shukra. Most of the ingredients of Basti Dravyas are having Sheeta Virya, Madhura Vipaka, Balya, Snigdha and VatapittaShamaka properties. Therefore YapanaBasti by its own potency is able to expel morbid Doshas and establishes the Dhatusamyata. It is said to possess best Brimhana and Rasayana effect which magnifies the quality of Rasa Dhatu and Dhatwagni.

Bastanda prayoga- This is based on the Siddhanta "Sarvadha Sarvabhavanam Samanyam Vruddhikaaranam". [15] Based on this, there is reference in Charaka Samhita like Rakta Raktena, Mamsam Mamsena. In the same way Shukram Shukrena in which testicles and semen of some animals and birds were used as Shukra Vruddhikara Dravya in olden days. (Eg: Nakra Retas acts as Shukra Vruddhikara Dravya if taken orally). [16]

Basta refers to goat, and anda refers to testicle. We have used goat testicles for the therapeutic purposes in the treatment of male infertility. Bastanda yoga is a potent formulation for the treatment of Azoospermia and Progressive Oligospermia. It is classified as Ativrushya due to its properties, which closely resemble those of Shukra Dhatu—including Guru (heavy), Snigdha (unctuous), and Picchila (slimy) qualities.

AshwagandhaGhrita -Ashwagandha (Withaniasomnifera) effectively removes free radicles as assessed by reducing levels of various oxidants and improved level of diverse antioxidants. In addition, the levels of testosterone, LH, FSH, and PRL were increased, which are good measure of quality of semen. [17] Acharya Charaka included Ashwagandha drug in Balya and Brimhana-gana. It is imputed with Balya, Vrishya and Rasayana properties [18] and it amplifies spermatogenesis through an assumed testosterone-like effect. [19]

Count plus Granules- Count plus granules are commonly used to enhance sperm count in men experiencing oligospermia, a condition characterized by low sperm count. They may also improve sperm quality by enhancing motility and morphology, which are crucial factors for fertility. Additionally, by addressing factors that impact sperm count and quality, this formulation supports male fertility. Moreover, some ingredients in the granules may help maintain hormonal balance, including testosterone levels.

Tab neo – ingredients of tab neo- *Vangabhasma*. *Lohabhasma*, *Shilajatu*, *Shuddha Hingu*, *Muktashuktibhasma*, *Yashtimadhu*, *Kupeelu*, *Shatavari*, *Kapikachhu*, *Bhringaraja*, *Phalandu*. *Kapikachchhu* and *Bhringaraj* are nervine pacifiers and adaptogens that calm the nerve impulses and reduce the excitability. *Shatavari* reduces neuromuscular and sexual irritability and *Yastimadhu* helps reduce anxiety.

Tab spemen- It supports sperm production, may be beneficial in treating impotence and seminal debilities, and can help improve testosterone levels in the body. Numerous herbs included in this formulation (*Kapikachhu*, *Kokilaksha* and *gokshura*) have demonstrated positive effects on male reproductive function. It was observed that Tribulus(*Gokshura*) treatment increased the motility of slow and non-progressive spermatozoa, and decreased the proportion of immotile spermatozoa. Tribulus terrestris(Gokshura) contains active phytochemicals. Protodioscin an active phytochemical is a potent natural precursor of the testosterone enhancer. Tribulus leads to the production of the luteinizing hormone (LH). When the LH levels are increased, the natural production of testosterone also increases. [21]

Tab Addyzoa^[22]- Addyzoa tablet (an herbal formula comprising of extracts of Withania somnifera(*Ashwagandha*), Tribulus terrestris(*Gokshura*), Mucuna Pruriens(*Kapikachhu*), chlorophytum arundinaceum(*Musli*), Asparagus racemosus(*apamarga*), Sida cardifolia(*Bala*) as key ingredients) in improving semen parameters. Ingredients in Addyzoa tablet are reported to be effective in promoting Spermatogenesis (sperm production) and motility, particularly in patients with mild and moderate oligopermia. Tablet has ability to restore normal functioning of the germinal epithelium, the tissue in the testicles where sperm production occurs. Addyzoa tablet improves sperm count by restoring balance in Hypothalamus-Pituitary-Gonadal (HPG) axis and regulating the hormone levels of Folliclestimulating-hormone (FSH), Luteinizing Hormone (LH) and the levels of Testosterone (T) to optimize the process of spermatogenesis.

CONCLUSION

This Ayurvedic treatment including a combination of both Shodhana and Shamana therapies which were helpful in improving the seminal parameters to a satisfactory level and in reducing the anxiety levels. Based on the present study, it can be concluded that the

combined effect of Bastandabaladi YapanaBasti and other VajikaranaYogas has shown excellent results in significantly improving sexual and seminal parameters (Table-7) in case of Oligospermia. But study on larger sample size could yield a significant statistical result. However, more extensive studies over a longer period are required to determine whether the ultimate goal of *Vajikarana* that is, successful conception can be consistently achieved in all cases of male infertility through this line of treatment. The present case study highlights the efficacy of Bastanda Baladi Yapana Basti.

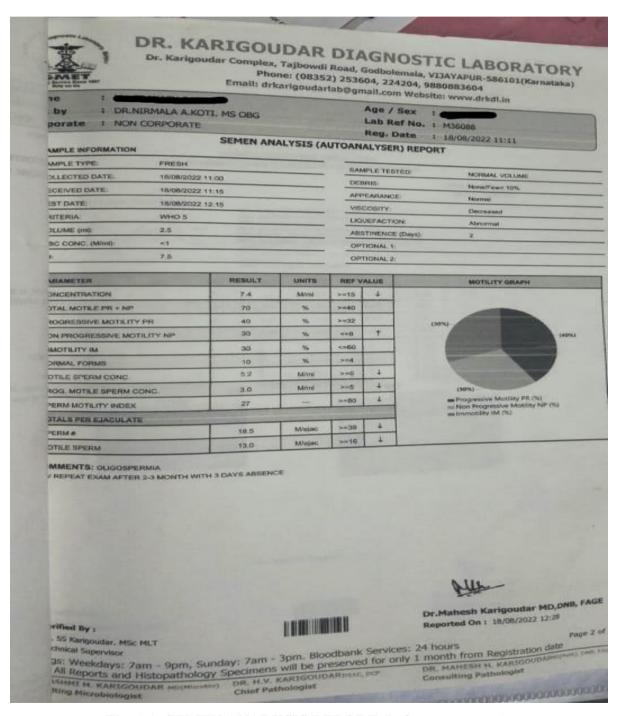


Fig. 1.1: SEMEN ANALYSIS REPORT (before treatment).

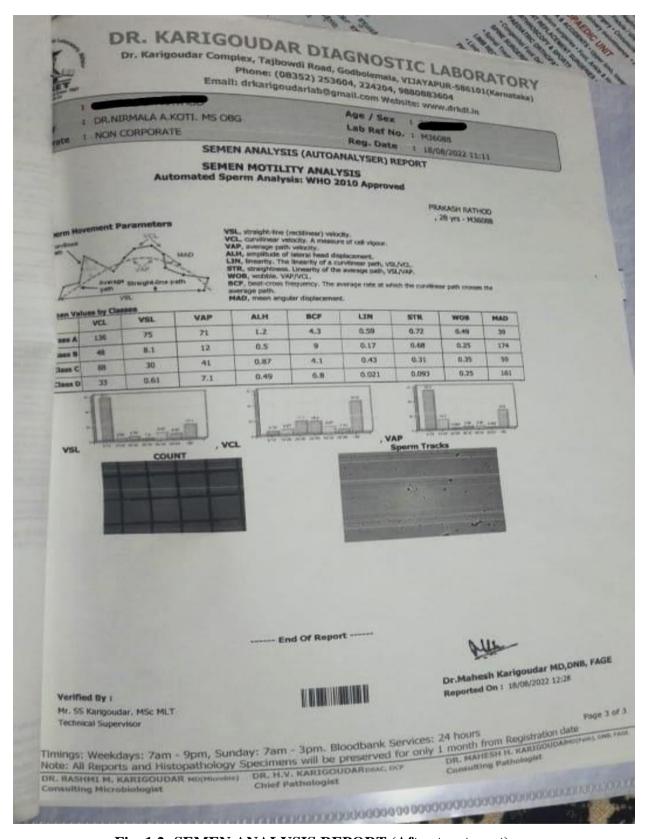


Fig. 1.2: SEMEN ANALYSIS REPORT (After treatment).

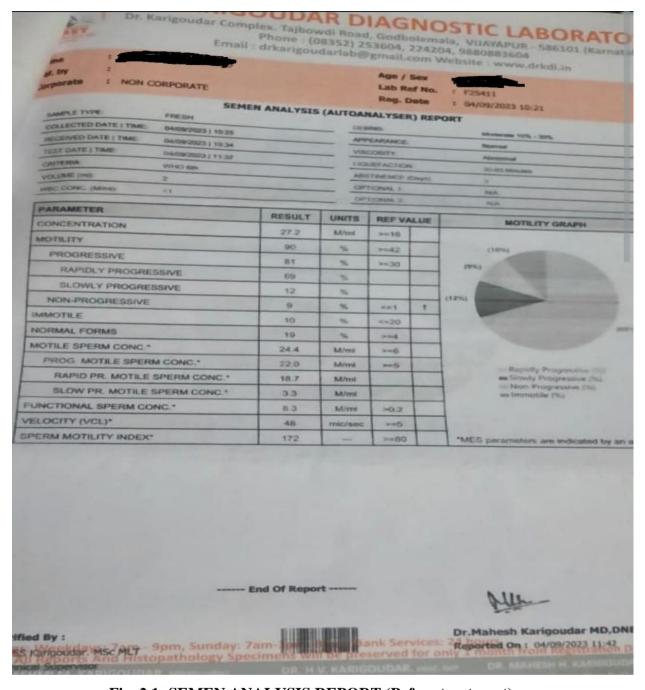


Fig. 2.1: SEMEN ANALYSIS REPORT (Before treatment).

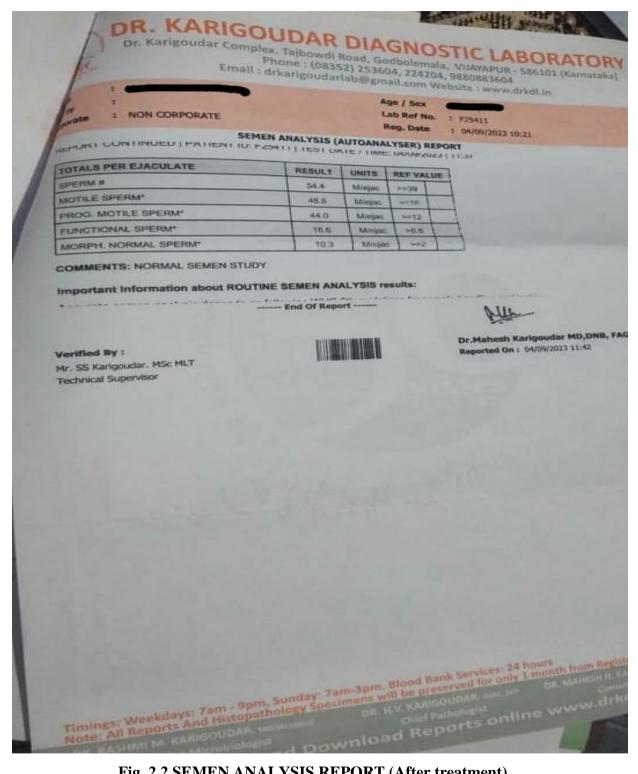


Fig. 2.2 SEMEN ANALYSIS REPORT (After treatment)

REFERENCE

- 1. Rathi I, Mavi A, Shannawaz M, Saeed S, Yadav A, Hasan S. Effectiveness of Ayurveda Intervention in the Management of Infertility: A Systematic Review. Cureus. 2024 Apr 6; 16(4): e57730. doi: 10.7759/cureus.57730. PMID: 38711705; PMCID: PMC11073818
- 2. Cooper TG, Noonan E, von Eckardstein S, Auger J, Baker HW, Behre HM, et al. World Health Organization reference values for human semen characteristics. Hum Reprod Update 2010; 16: 231–45.
- 3. Kandeel, FR, Koussa, VKT and Swerdloff, RS: Male sexual function and its disorders: Physiology, clinical investigation and treatment, Endocrine review, 2001; 22: 342-388.
- 4. Acharya Vagbhata. Sutra Sthana 1/13. In: Tripathi, B (ed.) AshtangaHridya. Delhi: Chaukhamba Sanskrit Pratisthan, 2009; 11.
- 5. Acharya Agnivesha. Chikitsasthana 15/16 -17. In: Shashtri, K, Chaturvedi, G (eds.) Charak Samhita Part-2. Varanasi: ChaukhambhaVishvabharati, 2011; 456.
- 6. Acharya Agnivesha. Chikitsasthana 15/16-17. In: Shashtri, K, Chaturvedi, G (eds.) Charak Samhita Part-2. Varanasi: Chaukhambha Vishvabharati, 2011; 456.
- 7. Acharya Sushruta. Sutra Sthana, 15/5(1). In: Srikanthamurthy, K. R. (ed.) Shushruta Samhita vol1. Varanasi: ChaukhambhaOrientalia, 2012; 98-99.
- 8. Saini G, Sarvi SC. Efficacy of KapikacchuChurnaInKshinashukra WSR to Oligozoospermia. VOL- VII ISSUE- IV 2020; ISSN 2349-638x.
- 9. TirthMihir Shah, KalpanaDhomse. Study the Vrushya effect of BastandKsheerBasti in Ksheena Shukra with special reference to Male Infertility. J Ayurveda Integr Med Sci [Internet]. 2025Jan.8 [cited 2025 Jan. 24]; 9(10): 290 -293. Available from: https://jaims.in/jaims/article/view/3706
- 10. Jadhao SR, Yadav CR, Dadhich OP. Efficacy of Kapikacchuchurna in Kshinashukra WSR to oligozoospermia. IJAM. 2013; 4: 209-15.
- 11. Asmabi, M. A.; Rajasree, R1. Ayurvedic management of male infertility due to severe oligospermia associated with hypotrophy of testes and hyperviscosity: A case report. Journal of Ayurveda Case Reports, Oct–Dec 2023; 6(4): 159-163, | DOI: 10.4103/jacr.jacr_79_22
- 12. Aacharya YT Charaka Samhita of Agnivesha, ChikitsaSthana. Ch. 2., Ver. 10. 2008Reprint edition Varanasi ChaukhambaSurbharati Prakashan: 698.
- 13. Varsakiya JN, Goyal M, Thakar A, Donga S, Kathad D. Efficacy of Virechana (therapeutic purgation) followed by Go-Ghrita (cow ghee) in the management of Ksheena

- Shukra (oligozoospermia): A clinical study. AYU (An International Quarterly Journal of Research in Ayurveda). 2019 Jan 1; 40(1): 27-33.
- 14. Z) Ayli S, Prashanth AS, Chavan SG. Success story of Vajikarana-A Case Study. Journal of Ayurveda and Integrated Medical Sciences. 2018 Apr 30; 3(02): 115-25.
- 15. Charaka Samhita with commentary of Chakrapanidatta, Translated By Prof.K.R.Srikantha Murthy, Chaukhambha Orientalia, Varanasi, Reprint Edition 2013, Volume-I, Sutrasthana, 1St chapter, Sloka No.44, Page No.21.
- 16. Charaka Samhita with commentary of Chakrapanidatta, Translated By Prof.K.R.Srikantha Murthy, Chaukhambha Orientalia, Varanasi, Reprint Edition 2013, Volume I, Sutrasthana, 25th chapter, Sloka No.40, Page No.371
- 17. Ahmad MK, Mahdi AA, Shukla KK, Islam N, Rajender S, Madhukar D, et al Withaniasomnifera improves semen quality by regulating reproductive hormone levels and oxidative stress in seminal plasma of infertile males FertilSteril. 2010; 94: 989–96.
- 18. Nishteswar K, Hemadri K DravyagunaVijnana. 2013 New Delhi, India Chaukhambha Samskrit Pratishthana:121.
- 19. Lavekar GS Database on Medicinal Plants Used In Ayurveda & Siddha. 2008;III New Delhi, India Central Council for Research in Ayurveda:88.
- 20. Tribulus terrestris L. Extract improves spermatozoa motility and increases the efficiency of acrosome reaction in subjects diagnosed with oligoasthenoteratozoospermiaL. Setiawan Airlangga University, Surabaya, Indonesia (1996).
- 21. Gauthaman K, Adaikan PG, Prasad RN. Aphrodisiac properties of Tribulus Terrestris extract (Protodioscin) in normal and castrated rats Life Sci., 2002; 71: 1385–96.
- 22. Dnyaneshwar Mote, Vipul Jaiswal, Nagsen Punekar. Clinical Assessment of Efficacy and Safety of Addyzoa Tablet in Male Infertile Patients with Oligospermia and Asthenospermia. J Ayurveda Integr Med Sci [Internet]. 2024 Aug. 27 [cited 2025 May 16]; 9(6): 11 -9. Available from: https://www.jaims.in/jaims/article/view/3477.