AYUSHDHARA
ISSN: 2393-9583 (P)/ 2393-9591 (O)
An International Journal of Research in AYUSH and Allied Systems

Research Article

AN OPEN PROSPECTIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF *GOKSHUR CHOORNA* IN OLIGOASTHENOSPERMIA

Shubhada Hake[1]*, Prashant Dalvi[2], Swati Gaikwad[3]

*[1]Assistant Professor, [2]Associate Professor, Department of Prasutitantra Streeroga, R. A. Podar Medical College (Ayu), Worli, Mumbai, Maharashtra.

[3]Associate Professor, Department of Prasutitantra Streeroga, All India Institute of Ayurveda, Goa, India.

Article info

Article History:
Received: 10-08-2026
Accepted: 14-09-2026
Published: 02-11-2026

KEYWORDS:
Oligoasthenospermia, *Ksheena Shukra, Gokshura Choorna*, Tribulus terrestris, *Vajikarana*, Male Infertility, Ayurveda.

ABSTRACT

In Ayurveda, this condition can be correlated with *Ksheena Shukra*, a type of *Shukra Dushti* characterized by diminution in the quantity and quality of *Shukra Dhatu*. *Vajikarana Tantra*, one of the eight specialized branches of Ayurveda, aims to restore reproductive health by promoting the quality and quantity of *Shukra Dhatu*. *Gokshura* (*Tribulus terrestris* Linn.), described as a *Vrishya*, *Shukrala*, *Balya*, and *Rasayana* drug, is traditionally indicated for enhancing fertility, sexual vigor, and reproductive function. **Aim:** To evaluate the effect of *Gokshura Choorna* on seminal parameters in patients with oligoasthenospermia (*Ksheena Shukra*). **Materials and Methods:** An open-label, single-arm clinical study was conducted on 30 male patients aged 20–50 years diagnosed with oligoasthenospermia. *Gokshura Choorna* was administered orally in a dose of 5g twice daily with *Koshna Jala* for 3 months. Assessment was carried out before and after treatment using subjective parameters and objective parameters. **Results:** Treatment produced statistically significant improvement in sperm count (11.78±5.33 to 21.78±11.20million/ml; $p<0.0001$), sperm motility (33.66±11.29% to 39.33 ±16.33%; $p=0.0002$), semen volume, sperm viability, and active sperm percentage. Significant improvement was also observed in all subjective parameters, including *Ksheena Shukra* symptoms, sexual desire, erection, ejaculation, and orgasm ($p<0.05$). Overall, 53.33% of patients showed excellent improvement, 30% showed marked improvement, 13.33% showed moderate improvement, and 3.33% showed mild improvement. **Conclusion:** *Gokshura Choorna* demonstrated significant improvement in seminal parameters and clinical features of *Ksheena Shukra*. Its *Vrishya*, *Shukrala*, *Balya*, and *Rasayana* properties may contribute to enhancement of *Shukra Dhatu* and reproductive function.

INTRODUCTION

Infertility is a major reproductive health concern affecting couples worldwide and has significant medical, psychological, social, and emotional consequences. It is defined as the inability to achieve pregnancy after 12 months of regular unprotected sexual intercourse.[1]

Access this article online

Quick Response Code

https://doi.org/10.47070/ayushdhara.v13i5.2997

Published by Mahadev Publications (Regd.) publication licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

Infertility may result from male factors, female factors, combined factors, or unexplained causes. Male factors contribute to approximately 30–50% of infertility cases, either independently or in association with female reproductive abnormalities.[2]

Male infertility is primarily associated with abnormalities in semen parameters, including reduced sperm concentration, impaired sperm motility, abnormal sperm morphology, and functional defects of spermatozoa. Oligoasthenospermia, characterized by decreased sperm count (oligozoospermia) and reduced sperm motility (asthenozoospermia), is one of the most common causes of male infertility and significantly affects reproductive potential.[3] The increasing incidence of male infertility has been

associated with multiple factors such as unhealthy lifestyle, psychological stress, environmental pollution, occupational exposure, sedentary habits, dietary changes, and metabolic disorders.[4]

Ayurveda emphasizes the importance of healthy reproduction and considers the formation of healthy progeny as an essential aspect of human life. The four *Purusharthas* described in Ayurvedic philosophy include *Dharma, Artha, Kama*, and *Moksha*, among which *Kama* represents desires related to family life and procreation. According to Ayurvedic principles, successful conception depends upon four essential factors: *Ritu* (appropriate reproductive period), *Kshetra* (healthy reproductive organs), *Ambu* (proper nourishment), and *Beeja* (healthy sperm and ovum).[5] Disturbance in any of these factors may result in infertility.

Acharya Charaka has highlighted the importance of reproductive capability and healthy progeny in maintaining continuity of human life. The concept of *Shukra Dhatu* in Ayurveda represents the reproductive tissue responsible for fertility and procreation. Various abnormalities of *Shukra* have been described under the concept of *Shukra Dushti*. Classical texts describe eight types of *Shukra Dosha* based on alterations in quantity, quality, and *Dosha* involvement.[6] *Kshina Shukra*, characterized by diminished quantity and impaired quality of semen, can be correlated with oligoasthenospermia in contemporary medical science.

The process of reproduction depends upon normal formation, maturation, transportation, and ejaculation of *Shukra*. Any impairment in spermatogenesis or semen quality may result in reduced reproductive potential. In Ayurveda, management of such conditions is described under *Vajikarana Tantra*, a specialized branch dealing with improvement of reproductive health, sexual vigor, fertility, and attainment of healthy progeny. *Vajikarana* drugs are described as agents that enhance the quality and quantity of *Shukra* and promote reproductive strength.[7]

Among the various *Vajikarana* drugs mentioned in Ayurvedic literature, *Gokshura* (*Tribulus terrestris* Linn.) is considered an important medicinal plant possessing *Vrishya* (aphrodisiac), *Balya* (strength promoting), and *Shukrala* (spermatogenic) properties.[8] Traditionally, *Gokshura* has been used in powdered form along with milk for improving sexual health and reproductive function.[8] Modern pharmacological studies have reported that *Tribulus terrestris* contains bioactive phytoconstituents such as protodioscin, diosgenin, and dioscin, which may contribute to its effects on reproductive physiology.[9] Experimental studies have suggested its role in supporting spermatogenesis, improving libido, and influencing reproductive hormonal activity.[10,11]

Although various therapeutic approaches are available for male infertility, the management of oligoasthenospermia remains challenging. Therefore, there is a need to explore safe, effective, and holistic therapeutic options. Considering the classical description of *Gokshura* as a *Vajikarana* drug and its reported reproductive benefits, the present study was undertaken to evaluate the effect of *Gokshur Choorna* on seminal parameters in patients with oligoasthenospermia.

AIM

To evaluate the effect of *Gokshur Choorna* on sperm count and sperm motility in patients with oligoasthenospermia.

OBJECTIVES

Primary Objectives

1. To evaluate the effect of *Gokshur Choorna* on sperm count in patients with oligoasthenospermia.
2. To evaluate the effect of *Gokshur Choorna* on sperm motility in patients with oligoasthenospermia.

Secondary Objective

To evaluate the effect of *Gokshur Choorna* on semen volume parameters and associated symptoms of *Ksheen shukra*.

Hypothesis

Alternative Hypothesis (H1)

Gokshur Choorna is effective in increasing sperm count and improving sperm motility in patients with oligoasthenospermia.

Null Hypothesis (H0)

Gokshur Choorna is ineffective in increasing sperm count and improving sperm motility in patients with oligoasthenospermia.

MATERIALS AND METHODS

Study Design and Setting

The present study was designed as an open-label, randomized, single-arm clinical trial conducted to evaluate the therapeutic effect of *Gokshura Churna* in patients diagnosed with oligoasthenospermia. The study was carried out after obtaining approval from the Institutional Ethics Committee of the R A Podar Medical College (AYU), Worli, Mumbai. Written informed consent was obtained from all participants before enrolment.

Drug Authentication and Standardization

Before preparation of the trial drug, authentication and standardization of raw material were performed through a recognized and reliable institution. The identity and quality of *Gokshura*

(*Tribulus terrestris* Linn.) fruit were confirmed by botanical authentication.

Preparation of Trial Drug

Authenticated dried fruits of *Gokshura* were collected from a reputed pharmacy. The fruits were cleaned, dried, and powdered using a grinder. The powder was passed through a suitable mesh to obtain a fine *Gokshura Churna*. The prepared drug was stored in an airtight container under suitable conditions until administration.

Intervention

Patients enrolled in the study were administered:

Gokshura Churna

- Dose: 5 g twice daily
- *Anupana: Koshna Jala* (warm water)
- Duration: 3 months
- Time of administration: *Apana Kala*

"The administration of *Gokshura Churna* at a dose of 5gm twice daily (BD) directly complies with the standard adult dosage parameters (3–6gm/day of the fruit powder) mandated by the Ayurvedic Pharmacopoeia of India (API), Part I, Volume I, establishing a clinically validated, safe baseline for targeting urogenital disorders without risk of systemic toxicity."

Study Participants

The sample size was calculated based on the expected difference in sperm count reported in the previous study, using a paired mean comparison with a two-sided significance level (α=0.05) and 80% statistical power, as recommended in standard clinical research methodology. The minimum required sample size was 27 participants.[12] To compensate for an anticipated dropout rate of approximately 10%, the final sample size was increased to 30 participants.[13]

A total of 30 patients fulfilling the inclusion criteria were enrolled in the study.

Inclusion Criteria

- Male patients aged between 20–50 years.
- Patients diagnosed with oligoasthenospermia.
- Patient having sperm count ≤ 20 million/ml
- Patients having sperm motility (Grade A+B) ≤ 50%.
- Patients willing to participate and provide informed consent.

Exclusion Criteria

- Azoospermia and aspermia.
- Congenital reproductive abnormalities.
- Genetic abnormalities such as Klinefelter syndrome.
- Varicocele, accessory sex gland infections, or sexually transmitted diseases.
- Systemic illnesses such as diabetes mellitus, hypertension, HIV infection, and hepatitis B infection, sexually transmitted disorders.
- Genitourinary tract disorders.
- Surgical disorders of the inguinoscrotal region.
- Malignancy of the genitourinary tract.

Assessment Criteria

Patients were assessed before and after completion of treatment using subjective and objective parameters.

Objective Parameters

Semen analysis was performed before and after treatment with assessment of:

- Sperm count
- Sperm motility

Sperm motility was evaluated according to WHO criteria:[14]

- Grade A: Rapid progressive motility
- Grade B: Slow progressive motility
- Grade A+B: Total progressive motility
- Grade C: Non-progressive motility
- Grade D: Immotile sperm

Semen Collection Procedure

Semen samples were collected after 3–5 days of sexual abstinence.

- Collection method: Masturbation
- Collection container: Sterile, wide-mouthed laboratory-provided container.
- Collection site: Private room adjacent to the laboratory.

Laboratory Investigations

Routine investigations were performed before treatment to assess general health status and exclude associated disorders:

- Complete blood count (CBC)
- ESR
- Liver function tests
- Renal function tests
- Blood sugar (fasting and postprandial)
- Lipid profile
- Urine routine and microscopic examination
- HIV
- HBsAg
- VDRL

Subjective Assessment Parameters

Symptoms related to *Ksheena Shukra* were assessed using a graded scoring system before and after treatment.

Parameters assessed included:

1. Symptoms of *Ksheena Shukra*
2. Sexual desire
3. Erectile function
4. Orgasm satisfaction

Severity was graded from 0–3:

- 0: Normal/no symptoms
- 1: Mild
- 2: Moderate
- 3: Severe

Grading of Subjective Parameters

Subjective parameters were assessed using a four-point scale (0–3), with higher scores indicating greater severity.

Table 1: Grading of Severity of Symptoms of *Ksheena Shukra*

Score	Severity	Criteria
0	Normal	No symptoms
1	Mild	Presence of *Sarvadaihika Lakshanas*
2	Moderate	Level 1 *Pratyatmaka Lakshanas*, with or without *Sarvadaihika Lakshanas*
3	Severe	Level 2 *Pratyatmaka Lakshanas*, with or without *Sarvadaihika Lakshanas*, along with Level 1 symptoms

Table 2: Grading of sexual desire, erection and orgasm

Score	Severity	Sexual desire	Erection	Orgasm
0	Normal	Normal desire	Maintained until completion	At completion with satisfaction
1	Mild	Desire after partner involvement	Unable to maintain erection	Before completion
2	Moderate	Desire cannot be sustained	Unable to achieve penetration despite erection	In the middle of the act
3	Severe	Absence of desire	Absence of erection	Absence of orgasm

Scoring: Each parameter was graded from 0 to 3 based on the predefined criteria. Lower scores indicated better function, while higher scores indicated greater severity.

Criteria for Overall Assessment

The clinical outcome was categorized based on percentage improvement:

- Cured: More than 75% improvement
- Marked improvement: 50–75% improvement
- Moderate improvement: 25–50% improvement
- Mild improvement: 0–25% improvement
- Unchanged: No improvement

Statistical Analysis

Data obtained before and after treatment were analysed statistically.

- Quantitative parameters (semen analysis parameters) were analysed using the Paired t-test.
- Subjective parameters were analysed using the Wilcoxon Matched Pairs Signed Rank Test.
- Statistical significance was considered according to the obtained *p* value.

Documentation and Follow-up

Detailed records of all enrolled patients were maintained in a Case Record Form (CRF). Clinical examination, investigations, treatment response, and follow-up observations were documented systematically. Comparative assessment before and after treatment was performed and results were analysed scientifically.

OBSERVATIONS AND RESULTS

Demographic and Clinical Profile of the Patients

A total of 30 patients were included in the present study. The demographic and clinical characteristics of the patients were assessed based on age, religion, socioeconomic status, occupation, dietary habits, addiction, *Prakruti, Agni, Koshtha*, type of infertility, and *Sanhanana*.

Sample size: A total of 30 patients were included in the study, and all 30 patients completed the study. No dropouts were reported.

Age: The maximum number of patients belonged to the age groups of 31–35 years and 36–40 years, with 11 patients (36.67%) in each group. The remaining 8 patients (26.67%) were in the age group of 25–30 years.

Religion: The majority of patients were Hindu, accounting for 28 patients (93.33%), while 2 patients (6.67%) were Muslim. No patients belonged to other religious groups.

Socioeconomic status: Most patients belonged to the middle socioeconomic group (16; 53.33%), followed by the lower socioeconomic group (9; 30.00%) and the higher socioeconomic group (5; 16.67%).

Occupation: The largest occupational group comprised service employees (10; 33.33%), followed

by businesspersons (6; 20.00%), drivers (4; 13.33%), labourers (3; 10.00%), typists (2; 6.67%), and patients engaged in other occupations (5; 16.67%).

Dietary habits: A mixed diet was reported by 26 patients (86.67%), whereas 4 patients (13.33%) followed a vegetarian diet.

Addiction: Multiple addictions were reported by 10 patients (33.33%), followed by alcohol consumption in 7 patients (23.33%), smoking in 4 (13.33%), and tobacco use in 3 (10.00%). One patient (3.33%) was classified under other addictions, while 5 patients (16.67%) reported no addiction.

***Prakruti*:** VP *Prakruti* was observed in 10 patients (33.33%), followed by PK *Prakruti* in 9 (30.00%), VK *Prakruti* in 4 (13.33%), and KV and PV *Prakruti* in 3 patients each (10.00%). KP *Prakruti* was observed in 1 patient (3.33%).

***Agni*:** *Manda Agni* was predominant, observed in 21 patients (70.00%), followed by *Vishama Agni* in 8 (26.67%) and *Tikshna Agni* in 1 (3.33%). No patient was classified as having *Sama Agni*.

Koshtha: *Madhya Koshtha* was observed in 18 patients (60.00%), whereas *Krura* and *Mrudu Koshtha* were observed in 6 patients each (20.00%).

Type of infertility: Primary infertility was observed in 18 patients (60.00%), while secondary infertility was present in 12 patients (40.00%).

Samhanana: *Madhyama Samhanana* was predominant, observed in 21 patients (70.00%), followed by *Avara Samhanana* in 8 (26.67%) and *Pravara Samhanana* in 1 patient (3.33%).

Overall Observation

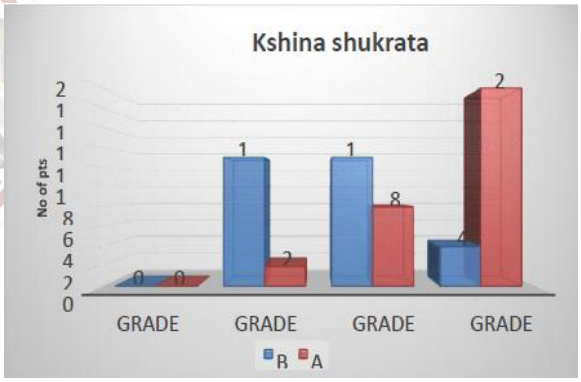
The demographic profile revealed that most patients were aged 31–40 years, belonged to the middle socioeconomic group, followed a mixed diet, and were engaged in service occupations. Among the Ayurvedic constitutional and physiological parameters, *VP Prakruti, Manda Agni, Madhya Koshtha*, and *Madhyama Samhanana* were the most frequently observed characteristics. Primary infertility was more common than secondary infertility in the study population.

Changes in Subjective Parameters Before and After Treatment

The changes in subjective parameters were assessed in 30 patients before treatment (BT) and after treatment (AT). The observations are presented below.

Table 1 & Fig 1: Changes in symptoms of *Ksheena Shukrata*

Grade	BT, n (%)	AT, n (%)
Grade 3	0 (0%)	0 (0%)
Grade 2	13 (43.33%)	2 (6.67%)
Grade 1	13 (43.33%)	8 (26.67%)
Grade 0	4 (13.33%)	20 (66.67%)
Total	30 (100%)	30 (100%)



Grade 0 patients increased from 13.33% to 66.67%, indicating improvement in symptoms of *Ksheena Shukrata* following treatment.

Table 2 & Fig 2: Changes in sexual desire

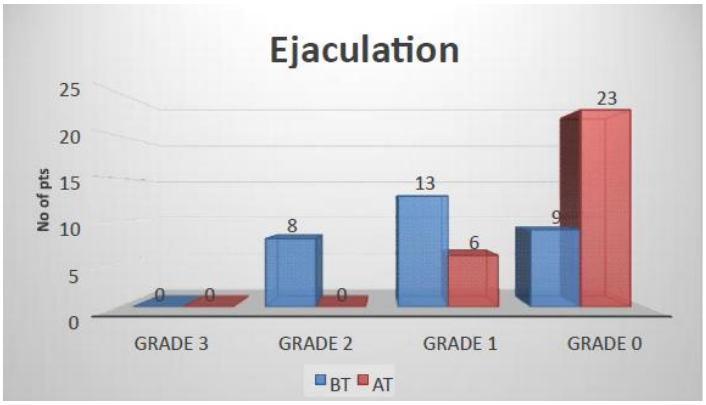
Grade	BT, n (%)	AT, n (%)
Grade 3	0 (0%)	0 (0%)
Grade 2	0 (0%)	0 (0%)
Grade 1	10 (33.33%)	3 (10.00%)
Grade 0	20 (66.67%)	27 (90.00%)
Total	30 (100%)	30 (100%)



Normal sexual desire (Grade 0) increased from 66.67% to 90.00% after treatment.

Table 3 & Fig 3: Changes in ejaculation

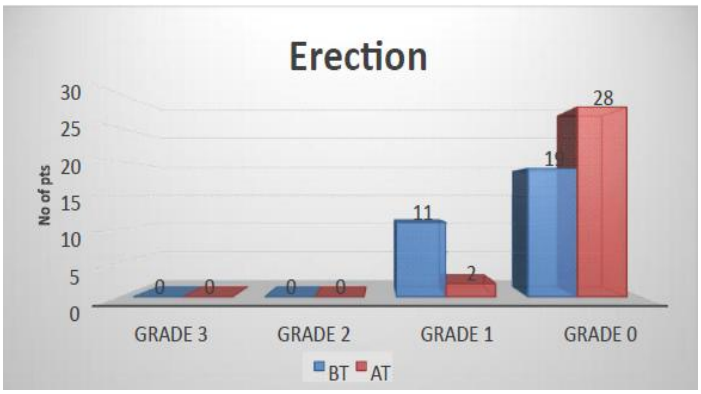
Grade	BT, n (%)	AT, n (%)
Grade 3	0 (0%)	0 (0%)
Grade 2	8 (26.67%)	0 (0%)
Grade 1	13 (43.33%)	6 (20.00%)
Grade 0	9 (30.00%)	23 (76.67%)
Total	30 (100%)	30 (100%)



Grade 0 patients increased from 30.00% to 76.67%, while Grade 2 cases decreased from 26.67% to zero after treatment.

Table 4 & Fig 4: Changes in erection

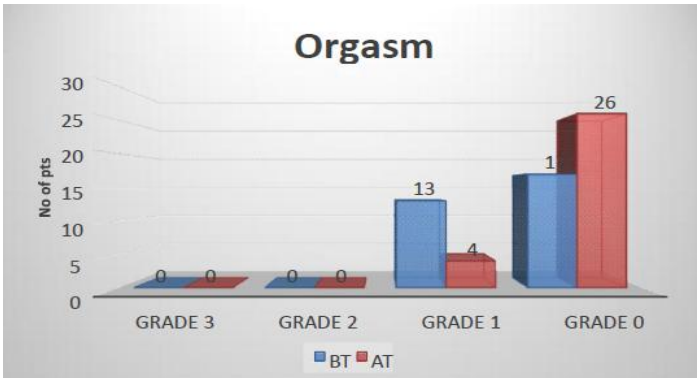
Grade	BT, n (%)	AT, n (%)
Grade 3	0 (0%)	0 (0%)
Grade 2	0 (0%)	0 (0%)
Grade 1	11 (36.67%)	2 (6.67%)
Grade 0	19 (63.33%)	28 (93.33%)
Total	30 (100%)	30 (100%)



Normal erection (Grade 0) increased from 63.33% to 93.33% after treatment.

Table 5 & Fig 5: Changes in orgasm

Grade	BT, n (%)	AT, n (%)
Grade 3	0 (0%)	0 (0%)
Grade 2	0 (0%)	0 (0%)
Grade 1	13 (43.33%)	4 (13.33%)
Grade 0	17 (56.67%)	26 (86.67%)
Total	30 (100%)	30 (100%)



Normal orgasm (Grade 0) increased from 56.67% to 86.67% after treatment.

Overall result

Improvement was observed in all five subjective parameters following treatment, as reflected by the increased proportion of patients achieving Grade 0 and the decreased proportion with higher symptom grades.

Changes in Objective Parameters Before and After Treatment

The objective parameters were assessed in 30 patients before treatment (BT) and after treatment (AT) to evaluate changes following administration of *Gokshura Choorna*. The results are presented as mean values and mean differences.

Table 6: Changes in objective parameters before and after treatment

Objective parameter	Mean BT	Mean AT	Mean difference
Semen pH	7.46	7.52	+0.06
Semen volume (mL)	2.51	3.36	+0.85
Liquefaction time (min)	22.67	20.93	−1.74
Sperm count*	11.78	21.78	+10.00
Sperm viability (%)	52.13	57.47	+5.34
Sperm motility (%)	33.67	39.33	+5.66
Active sperm (%)	18.90	28.96	+10.06
Sperm morphology (%)	53.93	51.13	−2.80

Observations

- Semen pH: The mean pH increased from 7.46 to 7.52.
- Semen volume: The mean volume increased from 2.51 mL to 3.36ml.

Figure 6: Changes in pH of semen

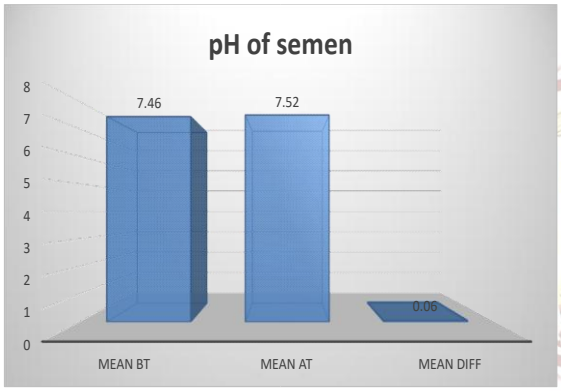
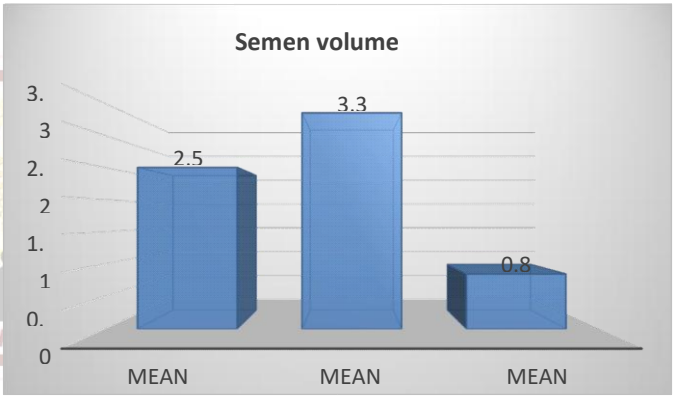


Figure 7: Changes in Volume of semen



- Liquefaction time: The mean liquefaction time decreased from 22.67 to 20.93 minutes.
- Sperm count: The mean sperm count increased from 11.78 to 21.78.

Figure 8: Changes in Liquification time

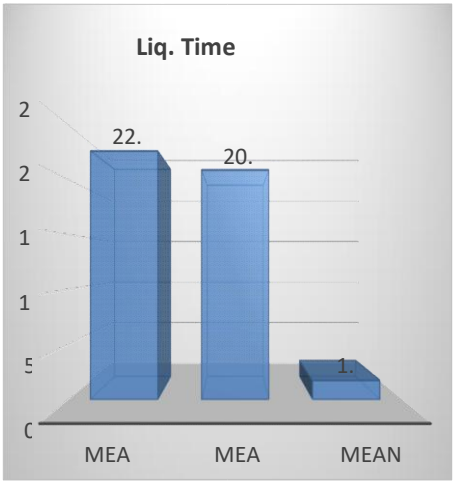
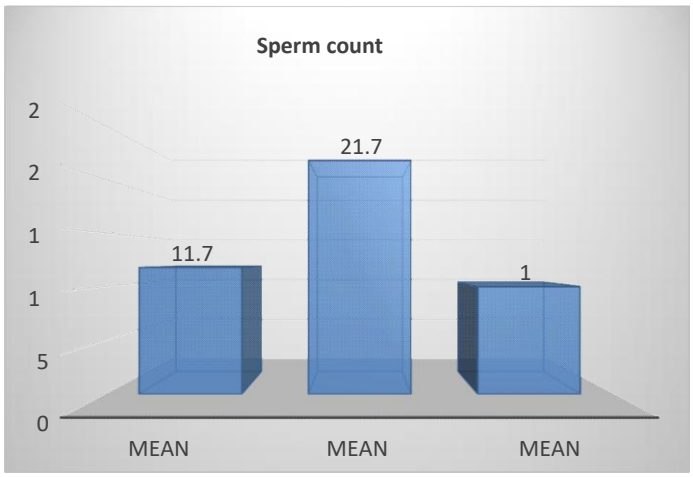


Figure 9: Changes in Sperm count



- Sperm viability: Mean viability increased from 52.13% to 57.47%.
- Sperm motility: Mean motility increased from 33.67% to 39.33%

Figure 10: Changes in Viability

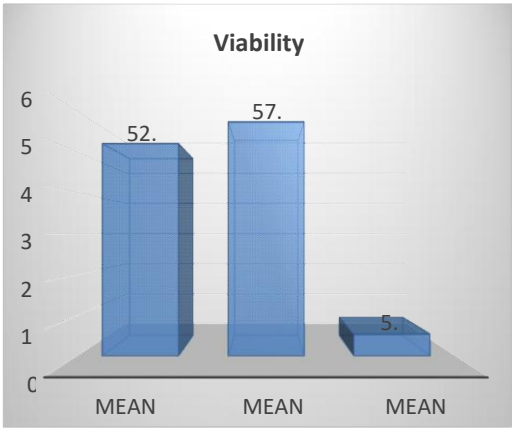
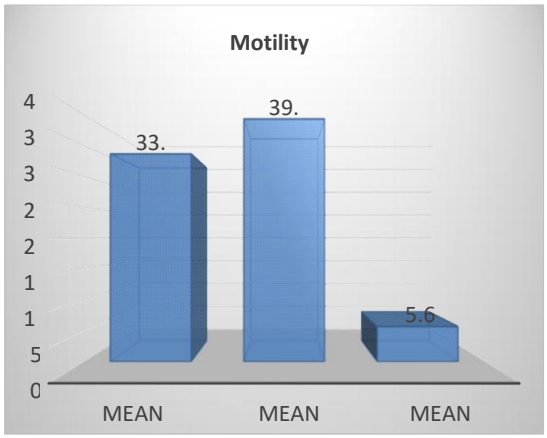
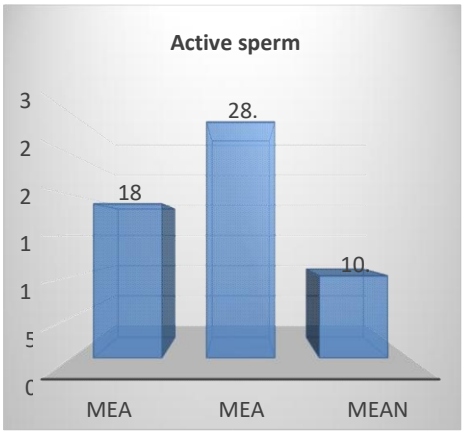


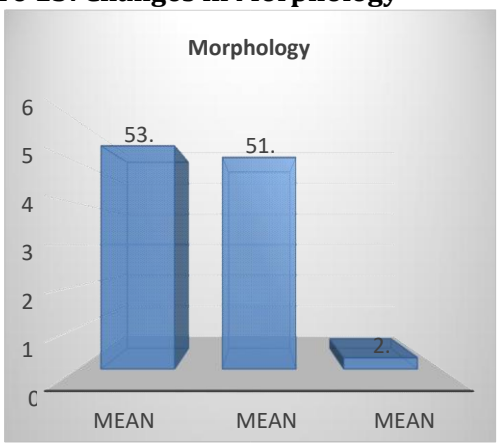
Figure 11: Changes in Motility



- Active sperm: The mean value increased from 18.90% to 28.96%.
- Sperm morphology: The mean value decreased from 53.93% to 51.13%.

Figure 12: Changes in Active sperms, Figure 13: Changes in Morphology





Statistical Analysis

Subjective Parameters

The subjective parameters were assessed before treatment (BT) and after treatment (AT) in 30 patients with oligoasthenospermia. The data were analysed using the Wilcoxon Signed-Rank Test to evaluate the differences between pre-treatment and post-treatment scores. A *P* value less than 0.05 was considered statistically significant.

Symptoms of *Kshina Shukrata*

Table 7: Wilcoxon Signed-Rank Test for *Kshina Shukrata*

Assessment	N	Mean	Median
BT	30	1.300	1
AT	30	0.400	0

Wilcoxon test statistic (W) = 300; $P < 0.0001$.

Observation and result: The mean score for *Kshina Shukrata* decreased from 1.300 before treatment to 0.400 after treatment, while the median score decreased from 1 to 0. The difference was statistically highly significant ($P<0.0001$), indicating a significant reduction in the assessed symptoms of *Kshina Shukrata* following treatment with *Gokshura Choorna*.

Desire

Table 8: Wilcoxon Signed-Rank Test for Desire

Assessment	N	Mean	Median
BT	30	0.333	0
AT	30	0.100	0

Wilcoxon test statistic (W) = 28; $P = 0.0156$.

Observation and result: The mean score for desire decreased from 0.333 before treatment to 0.100 after treatment, whereas the median score remained unchanged at 0. The difference was statistically significant

(*P*=0.0156), indicating a significant change in the assessed desire parameter following treatment with *Gokshura Choorna*.

Ejaculation

Table 9: Wilcoxon Signed-Rank Test for Ejaculation

Assessment	N	Mean	Median
BT	30	0.966	1
AT	30	0.200	0

Wilcoxon test statistic (W) = 136; *P* < 0.0001.

Observation and result: The mean score for ejaculation decreased from 0.966 before treatment to 0.200 after treatment, and the median score decreased from 1 to 0. The difference was statistically highly significant (*P*<0.0001), indicating a significant reduction in the assessed ejaculation symptom score following treatment with *Gokshura Choorna*.

Erection

Table 10: Wilcoxon Signed-Rank Test for Erection

Assessment	N	Mean	Median
BT	30	0.366	0
AT	30	0.066	0

Wilcoxon test statistic (W) = 45; *P* = 0.0039.

Observation and result: The mean score for erection decreased from 0.366 before treatment to 0.066 after treatment, while the median score remained unchanged at 0. The difference was statistically significant (*P*=0.0039), indicating a significant change in the assessed erection parameter following treatment with *Gokshura Choorna*.

Orgasm

Table 11: Wilcoxon Signed-Rank Test for Orgasm

Assessment	N	Mean	Median
BT	30	0.433	0
AT	30	0.133	0

Wilcoxon test statistic (W) = 45; *P* = 0.0039.

Observation and result: The mean score for orgasm decreased from 0.433 before treatment to 0.133 after treatment, while the median score remained unchanged at 0. The difference was statistically significant (*P*=0.0039), indicating a significant change in the assessed orgasm parameter following treatment with *Gokshura Choorna*.

Overall result of subjective parameters

All five subjective parameters showed statistically significant differences between the pre-treatment and post-treatment assessments. *Kshina Shukrata* and ejaculation showed highly significant differences (*P*<0.0001), while desire (*P*=0.0156), erection (*P*=0.0039), and orgasm (*P*=0.0039) showed statistically significant differences. The mean scores decreased for all five parameters following treatment.

Objective Parameters

The objective parameters were assessed before and after treatment in 30 patients with oligoasthenospermia. The data were analysed using the paired Student's *t*-test. The mean and standard deviation (SD) were used to describe the observations, and the paired *t* statistic and corresponding *P* value were used to assess statistical significance. A *P* value less than 0.05 was considered statistically significant.

pH of Semen

Table 12: Paired Student's *t*-Test for Semen pH

Assessment	N	Mean	SD
BT	30	7.463	0.140
AT	30	7.517	0.091

Paired *t* statistic = 1.783; *P* = 0.0843.

Observation and result: The mean semen pH increased from 7.463 before treatment to 7.517 after treatment, representing an increase of 0.054. The difference was statistically insignificant (*P*=0.0843), as the *P* value

exceeded 0.05. Thus, no statistically significant change in semen pH was demonstrated following treatment with *Gokshura Choorna*.

Semen Volume

Table 13: Paired Student's *t*-Test for Semen Volume

Assessment	N	Mean	SD
BT	30	2.513	0.705
AT	30	3.357	0.887

Paired *t* statistic = 6.411; *P* < 0.0001.

Observation and result: The mean semen volume increased from 2.513 before treatment to 3.357 after treatment, representing an increase of 0.844 in the reported measurement units. The difference was statistically highly significant (*P*<0.0001), indicating a significant increase in semen volume following treatment with *Gokshura Choorna*.

Liquefaction Time

Table 14: Paired Student's *t*-Test for Liquefaction Time

Assessment	N	Mean	SD
BT	30	22.66	5.529
AT	30	20.93	7.719

Paired *t* statistic = 1.792; *P* = 0.0836.

Observation and result: The mean liquefaction time decreased from 22.66 before treatment to 20.93 after treatment, representing a reduction of 1.73 in the reported measurement units. However, the difference was statistically insignificant (*P*=0.0836). Therefore, although a reduction in mean liquefaction time was observed, a statistically significant change was not demonstrated.

Sperm Count

Table 15: Paired Student's *t*-Test for Sperm Count

Assessment	N	Mean	SD
BT	30	11.78	5.330
AT	30	21.78	11.20

Paired *t* statistic = 6.645; *P* < 0.0001.

Observation and result: The mean sperm count increased from 11.78 before treatment to 21.78 after treatment, representing an increase of 10.00 in the reported measurement units. The difference was statistically highly significant (*P*<0.0001), indicating a significant increase in sperm count following treatment with *Gokshura Choorna*.

Sperm Viability

Table 16: Paired Student's *t*-Test for Sperm Viability

Assessment	N	Mean	SD
BT	30	52.13	12.27
AT	30	57.46	9.755

Paired *t* statistic = 5.118; *P* < 0.0001.

Observation and result: The mean sperm viability increased from 52.13 before treatment to 57.46 after treatment, representing an increase of 5.33 percentage points if the values are expressed as percentages. The difference was statistically highly significant (*P*<0.0001), indicating a significant increase in sperm viability following treatment with *Gokshura Choorna*.

Sperm Motility

Table 17: Paired Student's *t*-Test for Sperm Motility

Assessment	N	Mean	SD
BT	30	33.66	11.29
AT	30	39.33	16.33

Paired *t* statistic = 4.335; *P*=0.0002.

Observation and result: The mean sperm motility increased from 33.66 before treatment to 39.33 after treatment, representing an increase of 5.67 percentage points if the values are expressed as percentages. The

difference was statistically significant (P=0.0002), indicating a significant increase in sperm motility following treatment with *Gokshura Choorna*.

Active Sperms

Table 18: Paired Student's *t*-Test for Active Sperms

Assessment	N	Mean	SD
BT	30	18.90	11.56
AT	30	28.96	19.49

Paired t statistic = 3.955; P = 0.0005.

Observation and result: The mean value for active sperms increased from 18.90 before treatment to 28.96 after treatment, representing an increase of 10.06 in the reported measurement units. The difference was statistically significant (P=0.0005), indicating a significant change in the active sperm parameter following treatment with *Gokshura Choorna.*

Sperm Morphology

Table 19: Paired Student's *t*-Test for Sperm Morphology

Assessment	N	Mean	SD
BT	30	53.93	10.65
AT	30	51.13	11.40

Paired t statistic = 4.461; P = 0.0001.

Observation and result: The mean morphology value decreased from 53.93 before treatment to 51.13 after treatment, representing a reduction of 2.80. The supplied result indicated a statistically significant difference (P=0.0001). However, the clinical interpretation depends on the definition of the morphology parameter. If the values represent the percentage of normal sperm forms, the decrease would not indicate improvement. The direction of the result should therefore be verified before drawing a conclusion regarding sperm morphology.

Overall result of objective parameters

Statistically significant differences were reported for semen volume, sperm count, sperm viability, sperm motility, active sperms, and sperm morphology. Semen pH and liquefaction time showed statistically insignificant differences. Although the morphology result was statistically significant, its direction requires verification because the mean value decreased after treatment.

Effect of Therapy

According to Percentage Relief in Patients

The percentage relief for each patient was calculated from the recorded before-treatment and after-treatment scores.

Table 20: Patient-wise Relief Score and Percentage Relief in the Trial Group

Patient No.	BT	AT	Relief	Percentage relief (%)
1	3	1	2	66.67
2	2	0	2	100.00
3	3	0	3	100.00
4	4	0	4	100.00
5	3	2	1	33.33
6	3	0	3	100.00
7	3	1	2	66.67
8	3	1	2	66.67
9	5	1	4	80.00
10	5	2	3	60.00
11	4	1	3	75.00
12	2	0	2	100.00
13	3	1	2	66.67
14	5	2	3	60.00
15	3	0	3	100.00

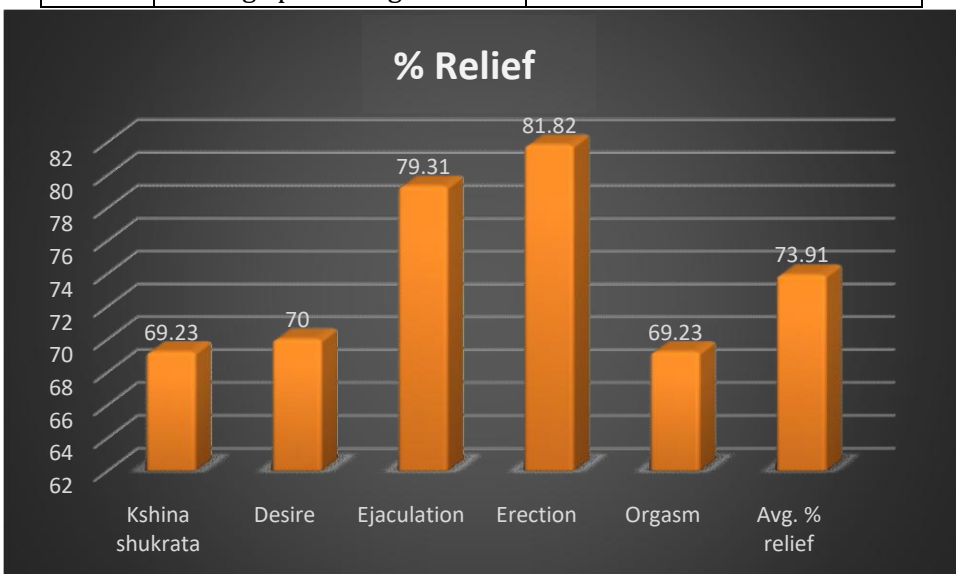
16	6	1	5	83.33
17	3	0	3	100.00
18	2	0	2	100.00
19	1	0	1	100.00
20	3	1	2	66.67
21	0	0	0	0.00
22	6	4	2	33.33
23	3	0	3	100.00
24	3	0	3	100.00
25	7	1	6	85.71
26	2	1	1	50.00
27	3	2	1	33.33
28	3	1	2	66.67
29	3	0	3	100.00
30	6	4	2	33.33

Observation and result: The patient-wise assessment showed varying degrees of relief. Patients with a post-treatment score of zero and a non-zero baseline score achieved 100% relief according to the recorded scoring system. Other patients showed partial relief. Patient 21 had a score of zero both before and after treatment; therefore, the percentage relief calculated for this patient is not interpretable using the usual percentage-reduction formula because the baseline score was zero.

According to Percentage Relief in Subjective Parameters

Table 21 & Fig 14: Percentage Relief in Subjective Parameters

S.No.	Subjective parameter	Percentage relief (%)
1	*Kshina Shukrata*	69.23
2	Desire	70.00
3	Ejaculation	79.31
4	Erection	81.82
5	Orgasm	69.23
6	Average percentage relief	73.91

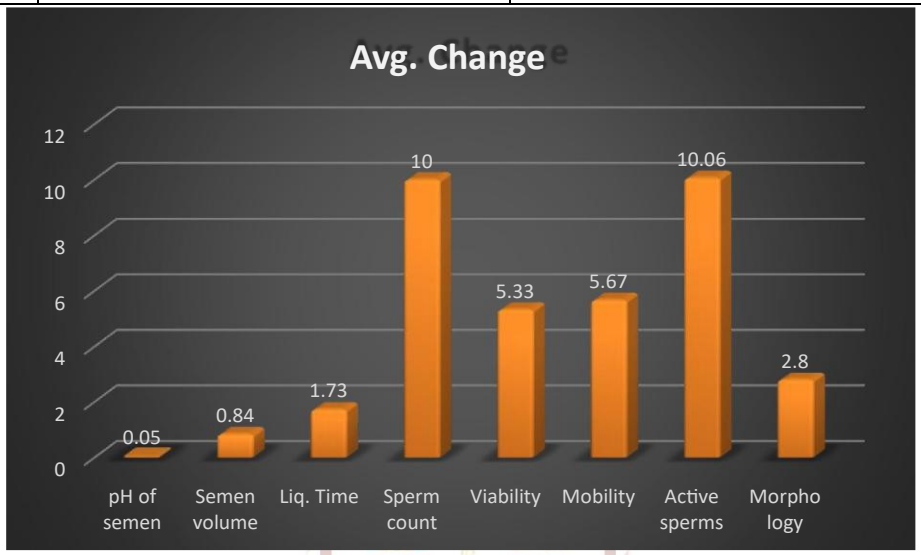


Observation and result: According to the supplied calculations, the highest percentage relief was observed in erection (81.82%), followed by ejaculation (79.31%), desire (70.00%), *Kshina Shukrata* (69.23%), and orgasm (69.23%). The reported average percentage relief was 73.91%.

According to Average Change in Objective Parameters

Table 22 & Fig 15: Average Change in Objective Parameters

S.No.	Objective parameter	Average change
1	Semen pH	0.05
2	Semen volume	0.84
3	Liquefaction time	1.73
4	Sperm count	10.00
5	Viability	5.33
6	Motility	5.67
7	Active sperms	10.06
8	Morphology	2.80



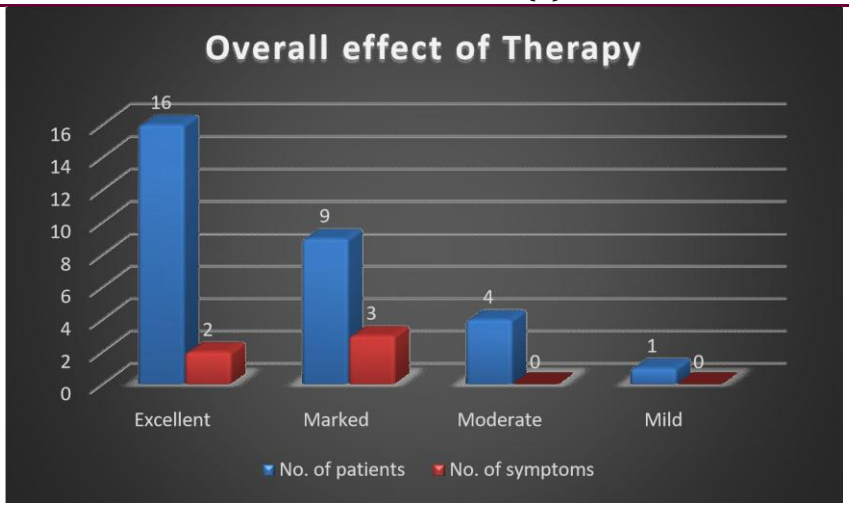
Observation and result: The largest positive numerical change was observed in the active sperm parameter (10.06), followed by sperm count (10.00), motility (5.67), viability (5.33), and semen volume (0.84). Semen pH showed a small increase of approximately 0.05, while liquefaction time decreased by 1.73. Morphology decreased by 2.80 in the reported mean values. The clinical significance of each change depends on the measurement units and the direction in which improvement is defined.

Overall Effect of Therapy

According to Percentage Relief

Table 23 & Fig 16: Overall Effect of Therapy According to Percentage Relief

S.No.	Percentage relief	Grade of improvement	Number of patients	Number of symptoms
1	76–100%	Excellent	16	2
2	50–75%	Marked	9	3
3	25–49%	Moderate	4	0
4	0–24%	Mild	1	0
	Total		**30**	**5**



Overall Effect of Therapy according % Relief

Observation and result: According to the supplied classification, 16 patients (53.33%) were categorised as having excellent improvement, 9 patients (30.00%) as having marked improvement, 4 patients (13.33%) as having moderate improvement, and 1 patient (3.33%) as having mild improvement. Thus, the largest proportion of patients belonged to the excellent-improvement category. The reported categories accounted for all 30 patients.

According to Statistical Analysis

Subjective Parameters

Table 23: Overall Statistical Analysis of Subjective Parameters

S.No.	Subjective parameter	Statistical test	Result
1	*Kshina Shukrata*	Wilcoxon Signed-Rank Test	Significant
2	Desire	Wilcoxon Signed-Rank Test	Significant
3	Ejaculation	Wilcoxon Signed-Rank Test	Significant
4	Erection	Wilcoxon Signed-Rank Test	Significant
5	Orgasm	Wilcoxon Signed-Rank Test	Significant

Observation and result: All five subjective parameters showed statistically significant pre-treatment and post-treatment differences according to the supplied Wilcoxon Signed-Rank Test results. The reported *P* values were below 0.05 for each parameter.

Objective Parameters

Table 24: Overall Statistical Analysis of Objective Parameters

S.No.	Objective parameter	Statistical test	Result
1	Semen pH	Paired Student's *t*-test	Insignificant
2	Semen volume	Paired Student's *t*-test	Significant
3	Liquefaction time	Paired Student's *t*-test	Insignificant
4	Sperm count	Paired Student's *t*-test	Significant
5	Viability	Paired Student's *t*-test	Significant
6	Motility	Paired Student's *t*-test	Significant
7	Active sperms	Paired Student's *t*-test	Significant
8	Morphology	Paired Student's *t*-test	Significant;

Observation and result: Statistically significant differences were reported for semen volume, sperm count, viability, motility, active sperms, and morphology. Semen pH and liquefaction time showed statistically insignificant differences at the 5% significance level.

Summary of the overall effect of therapy

The pre-treatment and post-treatment analysis demonstrated statistically significant changes in all five subjective parameters. Among the objective parameters, statistically significant differences were reported for semen volume, sperm count, viability, motility, active sperms, and morphology, whereas semen pH and liquefaction time did not show statistically significant differences. According to the supplied percentage-relief classification, 16 patients had excellent improvement, 9 had marked

improvement, 4 had moderate improvement, and 1 had mild improvement.

Overall, the findings indicated changes in several subjective and objective parameters following treatment with *Gokshura Choorna*.

Abbreviations: BT: Before treatment; AT: After treatment; N: Number of patients; SD: Standard deviation; W: Wilcoxon test statistic; *t*: Paired Student's *t*-test statistic.

DISCUSSION

The present clinical study was undertaken to evaluate the effect of *Gokshura Choorna* in patients of oligoasthenospermia, considering its Ayurvedic correlation with *Ksheena Shukra*. The discussion focuses on interpretation of demographic findings, clinical response, changes in semen parameters, and probable mode of action of the trial drug.

Conceptual Discussion

According to Ayurveda, *Ksheena Shukra* is described as a condition involving quantitative and qualitative depletion of *Shukra Dhatu*. Classical texts describe involvement of aggravated *Vata* and *Pitta Dosha* in the manifestation of *Shukra Dushti*. The clinical features of *Ksheena Shukra*,[15-17] such as decreased sexual strength, reduced ejaculation quality, and diminished reproductive capacity, can be correlated with the clinical features of oligoasthenospermia, characterized by reduced sperm count and decreased sperm motility.

The *Nidana* responsible for *Vata-Pitta* aggravation, such as improper dietary habits, excessive physical or psychological stress, irregular lifestyle, and unhealthy habits, may contribute to impairment of Shukra formation. In modern understanding, factors such as nutritional deficiencies, oxidative stress, hormonal imbalance, genetic factors, and lifestyle-related factors are associated with impaired spermatogenesis.[18-21]

Demographic Findings

The majority of patients belonged to the age group of 31–40 years. This may be attributed to delayed consultation for infertility, as couples often seek medical advice after prolonged periods of unsuccessful conception.

Predominance of *Vata-Pitta Prakruti* among participants suggests the possible involvement of these *Doshas* in the pathogenesis of *Ksheena Shukra*. A higher prevalence of *Madhyama Agni, Madhyama Koshtha*, and *Madhyama Satwa* indicates the influence of digestive, metabolic, and psychological factors in reproductive health.

A considerable proportion of patients had addiction habits, particularly alcohol and smoking. These factors may influence reproductive function by affecting *Dhatu* metabolism and contributing to oxidative stress.

Effect on Subjective Parameters

Significant improvement was observed in all subjective parameters, including *Ksheena Shukrata* symptoms, desire, ejaculation, erection, and orgasm. The improvement may be attributed to the *Vrishya*, *Balya*, and *Brimhana* properties of *Gokshura*, which may support *Shukra Dhatu* nourishment and improve reproductive function.

Effect on Objective Parameters

Significant improvement was observed in semen volume, sperm count, sperm viability, sperm motility, and active sperm percentage after treatment. These findings suggest a beneficial role of *Gokshura Choorna* in improving quantitative and functional aspects of semen.

Semen pH and liquefaction time showed changes after treatment; however, these differences were statistically insignificant. Therefore, no definite therapeutic effect on these parameters can be concluded from the present study.

Morphology showed a statistically significant difference; however, interpretation regarding improvement requires confirmation of the morphology assessment criteria and direction of scoring.

Probable Mode of Action of *Gokshura Choorna*

Gokshura (Tribulus terrestris Linn.) possesses *Madhura Rasa, Guru* and *Snigdha Guna, Sheeta Virya*, and *Madhura Vipaka*. These properties are described as nourishing and supportive for *Shukra Dhatu*.[22]

The *Madhura Rasa* and *Madhura Vipaka* may contribute to *Shukra Vriddhi*, while *Snigdha Guna* may help in pacifying aggravated *Vata Dosha. Sheeta Virya* may help in controlling *Pitta Dosha*. Through *Dosha Shamana* and *Dhatu* nourishment, *Gokshura* may support proper functioning of *Shukravaha Srotas*.[23-25]

Modern pharmacological studies suggest that constituents of *Gokshura*, including steroidal saponins, may influence androgen activity, reproductive function, and spermatogenesis. These properties may contribute to the observed improvement in semen parameters.

Overall Therapeutic Response

The overall clinical assessment showed excellent improvement in 16 patients (53.33%), marked improvement in 9 patients (30%), moderate improvement in 4 patients (13.33%), and mild improvement in 1 patient (3.33%).

The variation in therapeutic response may be attributed to individual differences in *Prakruti, Dosha* predominance, disease chronicity, lifestyle factors, dietary habits, and adherence to treatment.

Limitations

The study was conducted on a limited sample size, which restricts generalization of findings. The study was also limited to semen parameters and clinical assessment. Further studies incorporating hormonal analysis, oxidative stress markers, and larger multicentric trials are recommended.

CONCLUSION

The present study suggests that *Gokshura Choorna* has beneficial effects in the management of oligoasthenospermia. Significant improvement was observed in subjective symptoms and important semen parameters including sperm count, semen volume, viability, motility, and active sperm percentage.

The findings indicate that *Gokshura Choorna* may act through its *Vrishya, Balya, Brimhana*, and *Dosha-shamana* properties, supporting improvement in *Shukra Dhatu* quality and reproductive function.

Further studies with larger sample size, longer follow-up, and advanced reproductive investigations are required to establish its efficacy more comprehensively.

Acknowledgement

The authors acknowledge the support of the Institutional Ethics Committee, Department of Prasutitantra Streeroga, R.A. Podar Medical College (Ayurveda), Mumbai, laboratory personnel and all study participants who contributed to the completion of the study.

Ethical Approval

The study was approved by the Institutional Ethics Committee of R. A. Podar Medical College (Ayurveda), Worli, Mumbai.

IEC approval number: Ref No.RAP/IEC/6983/Date-24/9/2021

IEC approval date: 24/9/2021

Informed Consent

Written informed consent was obtained from all participants before enrolment in the study.

REFERENCES

1. Dalhan and Gaydasacharya Sushruta, Sushrut samhita, Sharirsthan, Shukrashonit Shudhhashair Adhyaya, 2/33, edited by Vd Yadavji 167| Page Trikamji and Narayan Ram Acharya 'Kavyatirtha', Chaukhamba Surbharati prakashan publication sansakaran 2015 page no 344.
2. Agnivesha, Charaka, Dridhabala, Charakasamhita, with the Ayurvedadipika Commentary by Sri Cakrapanidatta, Chikitsasthan, Adhyaya 2 /1/6, edited by Vd. Vaidya Yadavji Trikamaji Acharya, prologued by Prof. R.H. Singh published by Chaukhambha Surbharati Prakashan, Varanasi, volume-, p.391.
3. D. C. Dutta's –Text book of Gynaecology, 6th Edition, edited by Hiralal Konar New Central Book Agency (P) Ltd, Culcutta. 2013 Page 217
4. www.hometestingblog.testcontry.com/?tag=fertility andwww.demographymatters.blogspot.com/2009_08_01archMive.html
5. Howkins & Bourne, Shaw's Textbook of Gynaecology, 12th Edition, B. I. Churchil Livingstone, New Delhi, Page No. 157.
6. Malpani Infertility Clinic www.drmalpani.com/ oligospermia.html.
7. Dalhan and Gaydasacharya Sushruta, Sushrut samhita, Sharirsthan, Shukrashonit Shudhhashair Adhyaya, 2/1-6, edited by Vd Yadavji Trikamji and Narayan Ram Acharya 'Kavyatirtha', Chaukhamba Surbharati prakashan publication sansakaran 2015 page no 344.
8. Bhavprakash nighantu (Indian Materia Medica) Edited by Krishnachandra Chunekar Sanshodhit parivardhit sanskaran 2010, Chaukhamba prakashan, Gudichyadi Varga Shlok 44, 45, 46, pg no 279, 280, 282.
9. Pandya K, Solanki B, Maniar K, Gurav N, Bhatt S. Natural herbal supplements- A study on their nutritional value and their phytochemical constituents. International Journal of Pharmaceutical Sciences and Research. 2011; 2: 1480–94.
10. Anonymus. A monograph of identity, safety and clinical usage. Mumbai: CHEMEXCIL; 1992. Selected medicinal plants of India. Amonograph Published by scientists at Bhavan's Swami Prakashananda Ayurvedic Research Centre; p. 325. 168
11. Gauthaman K, Adaikan PG, Prasad RN. Aphrodisiac properties of Tribulus Terrestris extract (Protodioscin) in normal and castratedrats. Life Sci. 2002; 71: 1385–96.
12. Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB. Designing Clinical Research. 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2013.
13. Machin D, Campbell MJ, Tan SB, Tan SH. Sample Size Tables for Clinical Studies. 3rd ed. Oxford: Wiley-Blackwell; 2009.
14. World Health Organization. WHO laboratory manual for the examination and processing of human semen. 6th ed. Geneva: World Health Organization; 2021.
15. Agnivesha. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Edited by Yadavji Trikamji Acharya. Varanasi: Chaukhambha Surbharati Prakashan; 2020. Chikitsa Sthana 2/4-8 (Vajikarana Adhyaya), p. 392-395.
16. Sushruta. Sushruta Samhita with Nibandha Sangraha commentary of Dalhana. Edited by Yadavji

Trikamji Acharya. Varanasi: Chaukhambha Surbharati Prakashan; 2019. Chikitsa Sthana 26 (Vajikarana Chikitsa), p. 497-505.
17. Vagbhata. Ashtanga Hridaya with Sarvanga sundara commentary of Arunadatta. Edited by Harisastri Paradakara Vaidya. Varanasi: Chaukhambha Surbharati Prakashan; 2020. Uttara Sthana 40 (Vajikarana Adhyaya), p. 886-893.
18. Agarwal A, Baskaran S, Parekh N, Cho CL, Henkel R, Vij S, et al. Male infertility. Lancet. 2021; 397 (10271): 319-333. doi:10.1016/S0140-6736(20) 32667-2.
19. Krausz C, Riera-Escamilla A. Genetics of male infertility. Nat Rev Urol. 2018; 15(6): 369-384. doi:10.1038/s41585-018-0003-2.
20. Sharma R, Biedenharn KR, Fedor JM, Agarwal A. Lifestyle factors and reproductive health: taking control of your fertility. Reprod Biol Endocrinol. 2013; 11: 66. doi:10.1186/1477-7827-11-66.
21. Agarwal A, Virk G, Ong C, du Plessis SS. Effect of oxidative stress on male reproduction. World J Mens Health. 2014; 32(1): 1-17. doi:10.5534/ wjmh.2014. 32.1.1.
22. Sharma PV. Dravyaguna Vijnana. Vol II. Varanasi: Chaukhambha Bharati Academy; 2005. p. 632-635. (Gokshura: properties, actions, indications and therapeutic uses).
23. Gauthaman K, Adaikan PG, Prasad RN. Aphrodisiac properties of Tribulus terrestris extract (protodioscin) in normal and castrated rats. Life Sci. 2002; 71(12): 1385-1396. doi:10.1016/S0024-3205(02) 01858-1.
24. Neychev VK, Mitev VI. The aphrodisiac herb Tribulus terrestris does not influence androgen production in young men. J Ethnopharmacol. 2005; 101(1-3): 319-323. doi: 10.1016/j.jep. 2005.05.017.
25. Chhatre S, Nesari T, Somani G, Kanchan D, Sathaye S. Phytopharmacological overview of Tribulus terrestris. Pharmacogn Rev. 2014; 8(15): 45-51. doi:10.4103/0973-7847.125530.

Cite this article as:
Shubhada Hake, Prashant Dalvi, Swati Gaikwad. An Open Prospective Clinical Study to Evaluate the Effect of Gokshur Choorna in Oligoasthenospermia. AYUSHDHARA, 2026;13(5):1-17.
https://doi.org/10.47070/ayushdhara.v13i5.2997
Source of support: Nil, Conflict of interest: None Declared

***Address for correspondence**
Dr. Shubhada Hake
Assistant Professor,
Department of Prasutitantra Streeroga,
R.A. Podar Medical College (Ayu),
Worli, Mumbai, Maharashtra.
Email: shubhadahake@gmail.com

Disclaimer: AYUSHDHARA is solely owned by Mahadev Publications - A non-profit publications, dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. AYUSHDHARA cannot accept any responsibility or liability for the articles content which are published. The views expressed in articles by our contributing authors are not necessarily those of AYUSHDHARA editor or editorial board members.