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Case Study

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AN ETIOPATHOLOGICAL STUDY OF KLAIBYA WITH SPECIAL REFERENCE TO IMPOTENCE AND ITS THERAPEUTIC STUDY (UPSHAYATMAKA PARIKSHANA) WITH GOKSHURADI CHOORNA - A CASE STUDY

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ABSTRACT

Background: Klaibya, a condition described in Ayurveda, corresponds to erectile dysfunction (ED) and sexual debility. Conventional Therapies have limitations, necessitating exploration of Ayurvedic alternatives. *Gokshuradi Choorna*, a polyherbal formulation with *Vajikarana* (aphrodisiac) properties, was evaluated for its efficacy in *Klaibya* therapy. **Methods:** A single-arm, open-label clinical trial was conducted at the Government Ayurvedic PG College and Hospital, Chaukaghat, Varanasi. Forty male patients diagnosed with *Klaibya* were administered 5 grams of *Gokshuradi Choorna* orally With 50 ml. lukewarm milk twice daily for 30 days. Subjective (sexual desire, erectile dysfunction, premature ejaculation, etc.) and objective (semen volume, sperm count, motility, pH, etc.) parameters were assessed pre- and post-therapy using standardized scoring systems. Statistical analysis was performed using the Wilcoxon signed-rank test. **Results:** Statistically significant improvements were observed in sexual desire (41.37%, $p=0.0005$), erectile function (45.58%, $p<0.0001$), and premature ejaculation (33.76%, $p<0.0001$). Semen volume increased by 76.96% ($p<0.0001$), and sperm count improved by 55.76% ($p<0.0001$). Liquification time (92.85%) and visual appearance (60%) showed marked enhancements. Motility (20.45%) and excessive perspiration (6.06%) were not statistically significant. **Conclusion:** *Gokshuradi Choorna* demonstrated significant efficacy in improving erectile function, sperm quality, and overall sexual health. The findings support its integration into Ayurvedic clinical practice as a therapeutic option for male sexual dysfunction. Further controlled studies with larger sample sizes and biochemical markers are recommended.

KEYWORDS: *Klaibya*, Erectile Dysfunction, *Gokshuradi Choorna*, Ayurveda, Therapeutic Study.

INTRODUCTION

Ashtanga Ayurveda's *Vajikarana* branch addresses fertility, potency, and healthy offspring. Infertility and sexual dysfunction are diagnosed and treated in detail in this field. Ayurvedic literature have elaborately described male sexual dysfunctions as Klaibya. According to *Vajikarana*, the term "*Klaibya*" denotes impotence, or the incapacity of a man to engage in sexual activity, powerlessness, or helplessness.[1] *Acharya Charaka* classified *Klaibya* into four types: *Dhwajabhangaja, Bijopaghataja*, *Sukra Kshayaja*, and *Jaraja*. *Acharya Sushruta*, on the other hand, divided *Klaibya* into six types: *Manasa, Aaharaja, Shukra Kshayaja, Pumsatva-Upghataja*, *Sahaja*, and *Khara Shukranimittaja*, and *Bhavaprakasha* divided into seven types: *Manasa, Pittaja, Shukrakshayaja, Medhrorogaja, Upaghataja, Shukrastambhaja*, and *Sahaja*.[2]

Sexual health is a crucial aspect of overall well-being. *Klaibya*, a condition described in Ayurvedic texts, is characterized by erectile dysfunction and loss of libido. The prevalence of ED is increasing due to stress, lifestyle factors, and metabolic disorders.

According to the best available data, 52% of American m ales between the ages of 40 and 70 suffer from erectile d ysfunction.Additionally, it is believed that at least 150 mi llion men worldwide and between 30 and 50 million men in the US suffer from ED.Due to cultural considerations, reporting bias, the general inability of many doctors to a sk about the sexual health of their male patients, and emb

arrassment difficulties, these figures probably represent a significant underestimating of the true number of men with ED.[3] According to the Massachusetts Male Aging Study's best available data, the incidence rises with age and the overall prevalence is 52%. About 40% of men will report experiencing ED by the age of 40, and 70% will do so by the age of 70. These results were validated by the National Health and Social Life Survey and related research.[4] Conventional treatment options include phosphodiesterase inhibitors, which have limitations such as side effects and contraindications. Ayurveda offers a holistic approach with herbal formulations like *Gokshuradi Choorna*, known for its *Vajikarana* (aphrodisiac) properties. This study aims to evaluate its efficacy scientifically.

AIM AND OBJECTIVE: To assess the therapeutic effect of *Gokshuradi Choorna* on *Klaibya*.

METHODOLOGY

STUDY DESIGN

This study was designed as a single-arm, open-label clinical trial conducted at the Government Ayurvedic PG College and Hospital, *Chaukaghat*, *Varanasi*. The research aimed to evaluate the etiopathogenesis of *Klaibya* (male sexual dysfunction) and assess the therapeutic efficacy of *Gokshuradi Choorna* in its management.

PARTICIPANTS

A total of 40 male patients diagnosed with *Klaibya* were recruited from the outpatient (OPD) and inpatient (IPD) departments of *Roga Nidana*, *Kayachikitsa*, and *Panchakarma*. Patients were selected based on the inclusion and exclusion criteria. (Flow Diagram).

INCLUSION CRITERIA

- Male patients aged between 21 and 70 years.
- Patients diagnosed with *Klaibya* based on classical Ayurvedic symptoms and modern medical criteria for sexual dysfunction.
- Patients suffering from infertility due to male sexual dysfunction or impotence.

EXCLUSION CRITERIA

- Patients with sexual dysfunction due to mechanical causes (e.g., anti-sperm antibodies, obstructive conditions, post-surgical status).
- Patients with sexually transmitted diseases (STDs) or chronic systemic illnesses.
- Patients suffering with disease other than *Klaibya like Diabetes, Heart Diseases, Thyroid Disorders, Neurological like Spinal injury, Hormonal Disorders, Depression, Tuberculosis Drugs abuse etc*.

INTERVENTIONS

Patients received *Gokshuradi Choorna* [Table 1] at a dosage of 5 grams twice daily, administered Orally with 50 ml lukewarm milk as an adjuvant, for 30 days. A follow-up was conducted every 7 days to monitor compliance and adverse effects.

POSOLOGY

Table 1: Contents of *Gokshuradi Choorna.*

S. No.	Content	Latin Names	Used Parts	Preparation
1.	*Gokshura*	*Tribulus terrestris*	Fruit	1 Part
2.	*Kshuraka*	*Asterocantha longifolia*	Seed	1 Part
3.	*Shatavari*	*Asparagus racemosus*	Rhizome	1 Part
4.	*Kapikachhu*	*Mucuna prurita*	Seed	1 Part
5.	*Nagabala*	*Grewia hirsuta*	Root	1 Part
6.	*Atibala*	*Abutilon indicum*	Root	1Part

(Chakradutta Vrisyadhikara -67/9)

OUTCOME MEASURES

Assessment was conducted using both subjective [Table 2] and objective criteria [Table 3]:

Table 2: Grading of Subjective Criteria.

S.N.	Parameter	Categorization	Grading
1.	Sexual Desire	Normal desire	0
		Lack of desire	1
		Desire only on demand	2
		No desire at all	3
2.	Breathlessness	No breathlessness	0
		Mild breathlessness which does not disturb the act	1
		Moderate breathlessness sometimes disturbs the act	2
		Severe breathlessness which hampers every act	3

3.	Excessive Perspiration	No perspiration	0
		Mild perspiration	1
		Moderate perspiration	2
		Severe perspiration	3
4.	Premature Ejaculation	Every time can control ejaculation till both get satisfied	0
		To control ejaculation so that he can get satisfaction	1
		Ejaculation before penetration	2
		Ejaculation during foreplay	3
5.	Erectile Dysfunction	Proper stiffness to maintain erection &to continue the sexual intercourse till last	0
		Some loss of stiffness but can maintain the erection and continue the act till last	1
		Some loss of stiffness, able to maintain erection but unable to continue the act till last	2
		Total loss of stiffness and unable to initiate the sexual intercourse	3
6.	Pain during Ejaculation	No pain	0
		Occasionally mild pain	1
		Usually, moderate pain	2
		Severe pain during ejaculation	3

Table 3: Grading for Objective Criteria.

S.N.	Parameter	Categorization	Grading
1.	Volume of Semen (in ml)	>3 ml	0
		2-3 ml	1
		1-2 ml	2
		<1 ml	3
		0 ml	4
2.	Sperm Count (million/ ml)	>40 million/ml	0
		30-39 million/ml	1
		20-29 million/ml	2
		10-19 million/ml	3
		1-9 million/ml	4
3.	pH	7.2-7.8	0
		6.6-7.2	1
		6.0-6.6	2
		>7.8	3
		<6.0	4
4.	Liquification time (in minute)	>20 min	0
		15-20 min	1
		10-15 min	2
		5-10 min	3
		<5 min	4
5.	Motility (within 1 hour of ejaculation)	Rapidly progressive	0
		Progressive	1
		Non-linear	2
		Non-progressive	3
		Immotile	4
6.	Visual Appearance	Whitish – Gray	0
		Yellowish	1
		Reddish	2
		Greenish/Deep yellow	3
		Brownish or other	4

STATISTICAL ANALYSIS

Data were analyzed using Wilcoxon signed-rank test for subjective parameters and for objective parameters. Statistical significance was considered at $p<0.05$, $p<0.01$, and $p<0.001$.

ETHICAL CONSIDERATIONS

The study was approved by the Institutional Ethics Committee (IEC), RAC Varanasi on December 30, 2019. The study was registered with CTRI (CTRI/2020/10/028518) on October 21, 2020. Written informed consent was obtained from all participants.

BASELINE CHARACTERISTICS

Table 4 presents the demographic and clinical characteristics of the study population. The majority of participants (52.5%) belonged to the age group of 31–50 years, with all participants being male (100%). A significant portion of the population resided in urban areas (57.5%), and the majority were married (92.5%). In terms of occupation, 45.0% of the participants were engaged in business, while 70.0% had attained a graduate-level education. The socioeconomic status of most participants was categorized as middle class (85.0%). Regarding lifestyle factors, 72.5% followed a mixed diet, and 77.5% reported having sound sleep. Among addictive habits, tea consumption was prevalent among 92.5% of participants. Clinical characteristics revealed that 92.5% experienced nocturnal emissions, while 70.0% reported engaging in masturbation. Premature ejaculation was noted in 85.0% of cases, and erectile dysfunction was observed in 95.0% of participants. Furthermore, 67.5% of individuals experienced performance anxiety, and 65.0% reported post-coital exhaustion.

Table 4: Baseline Characteristics.

Characteristic	Percentage (%)
Age Group (31–50 years)	52.5
Gender (male)	100.0
Habitat (urban)	57.5
Marital status (married)	92.5
Occupation (business)	45.0
Education level (graduate)	70.0
Socioeconomic status (middle)	85.0
Food habit (Mixed)	72.5
Sleep pattern (sound sleep)	77.5
Addictions (tea)	92.5
Nocturnal emission	92.5
Masturbation	70.0
Premature ejaculation	85.0
Erectile dysfunction	95.0
Performance anxiety	67.5
Post-coital exhaustion	65.0

RESULTS

Effect of Therapy on Subjective Parameters

The documented data was analyzed statically using GraphPad Instat Software that are shown in the table 5. On assessment it was noted that in sexual desire therapy provided 41.37% relief, in breathlessness provided 65%, in premature ejaculation provided 33.76% and erectile dysfunction it provided 45.58% relief, on calculating statistically found extremely significant. On other hand effect on therapy on excessive perspiration provided 06.06% relief and was noted non- significant statistically found. Similarly for parameter pain during ejaculation relief noted was 23.80% and statical calculation not possible as SD of one column is zero.

Table 5: Effect of Therapy on Subjective Parameters.

n=40

‘n’	Chief Complaints	Mean Score		Diff	% Relief	S.D.	S. E	W	‘P’	S
		B.T.	A.T.							
29	Sexual desire	1.55	0.65	0.89	41.37	1.263	0.2346	260	0.0005	HS
20	Breathlessness	1.30	0.45	0.85	65.00	0.5871	0.1330	120	<0.0001	HS
33	Excessive perspiration	1.45	1.33	0.12	06.06	0.3314	0.5770	10	0.1250	NS
39	Premature ejaculation	1.56	0.97	0.59	33.76	0.5486	0.0878	253	<0.0001	HS
34	Erectile dysfunction	1.50	0.76	0.73	45.58	0.6183	0.1060	253	<0.0001	HS
21	Pain during Ejaculation	1.00	0.76	0.23	23.80	-	-	-	-	-

*‘n’= number of participants/patients**,** B.T.- Before Treatment, A.T.- After Treatment, Diff- difference between the value of B.T. and A.T., S.D.- Standard Deviation, S.E.- Standard Error, W-sum of all ranks in Wilcoxon matched pair sign rank test, ‘P’ value -Probability of Observations S-significance of obtained p-value. In above table Wilcoxon matched pair sign rank test was applied to assess the effect of therapy in same individuals (BT/AT).

Effect of Therapy on Objective Parameters

On assessing the effect of therapy on objective parameters (Table-6) it was noted that on volume of semen, it provided 76.96% relief and on sperm count it provide 55.76% relief, on calculating statistically both parameters found extremely significant. In Motility it provided 20.45%, while statistically found non-significant (0.0625). For liquification time it provides 92.85% relief and for visual appearance it provides 60% relief, however statistical calculation for both parameters not possible as one column's SD is zero. pH remains unchanged on completion on therapy.

Table 6: Effect of Therapy on Objective Parameters.

n=40

'n'	Chief Complaints	Mean Score		Diff	% Change	S.D.	S. E	W	'P'	S
		B.T.	A.T.							
34	Volume of Semen	1.50	0.44	1.05	76.96	0.4222	0.07241	528	<0.0001	HS
26	Sperm Count	1.38	0.65	0.73	55.76	0.45423	0.08871	190	<0.0001	HS
08	pH	1.00	1.00	0.00	-	-	-	-	-	-
14	Liquification time	1.14	0.14	1.00	92.85	-	-	-	-	-
22	Motility	1.13	0.81	0.31	20.45	0.6463	0.1378	15	0.0625	NS
10	Visual Appearance	1.00	0.40	0.60	60.00	-	-	-	-	-

DISCUSSION

The study evaluates the therapeutic efficacy of *Gokshuradi Choorna* in the management of *Klaibya* (male sexual dysfunction), focusing on subjective and objective parameters. The findings highlight its potential as a viable alternative to conventional treatments, with statistically significant improvements in erectile function, sperm parameters, and overall sexual performance. Ayurveda classifies *Klaibya* as a disorder rooted in *Vata*, *Pitta*, and *Kapha* imbalances, with a strong psychosomatic component.[5] The classical texts, including *Charaka Samhita* and *Sushruta Samhita*, emphasize the role of *Vajikarana Dravyas* (aphrodisiacs) in restoring sexual potency and semen quality. *Gokshuradi Choorna*, a well-documented polyherbal formulation, contains herbs with *Rasayana* (rejuvenative) and *Vajikarana* properties.[6] These ingredients—*Gokshura* (*Tribulus terrestris*), *Shatavari* (*Asparagus racemosus*), *Kapikachhu* (*Mucuna prurita*), and *Atibala* (*Abutilon indicum*)—are known to enhance *Shukra Dhatu* (reproductive tissue), regulate hormonal functions, and improve *Ojas* (vital essence). From a *Dosha* perspective, *Gokshura* and *Kapikachhu* predominantly balance *Vata* and *Pitta*, addressing psychogenic erectile dysfunction and stress-related sexual debility. *Shatavari*, a potent *Rasayana*, supports reproductive health by nourishing the *Shukra Dhatu*, while *Atibala* aids in tissue regeneration and *Ojas* enhancement. Erectile dysfunction (ED) is increasingly linked to metabolic syndrome, oxidative stress, and endothelial dysfunction.[7] Conventional treatments like phosphodiesterase-5 (PDE-5) inhibitors (*e.g.*, sildenafil) work by enhancing nitric oxide (NO)-mediated vasodilation in penile tissue. However, these drugs have contraindications, including cardiovascular risks and long-term dependence.[8]

The phytoconstituents of *Gokshuradi Choorna* offer a holistic alternative. *Tribulus terrestris* has been shown to enhance androgen receptor expression, improve testosterone levels, and augment penile blood flow.[9] *Mucuna prurita* contains *L-DOPA*, which elevates dopamine levels and modulates the hypothalamic-pituitary-gonadal (HPG) axis, leading to improved libido and erectile response.[10] *Asparagus racemosus*, rich in saponins, has adaptogenic properties that reduce stress-related sexual dysfunction and enhance spermatogenesis.[11]

The study observed an improvement of 45.58% in erectile function and 33.76% in premature ejaculation, with statistically significant *p*-values ($p < 0.0001$). Semen parameters, including volume and sperm count, improved by 76.96% and 55.76%, respectively. These findings align with prior research indicating that *Vajikarana Rasayana* therapy positively modulates spermatogenic markers and semen viscosity.[12]

Interestingly, parameters such as motility (20.45% improvement) and excessive perspiration (6.06% relief) were not statistically significant. This suggests that while *Gokshuradi Choorna* enhances sperm count and volume, its impact on sperm motility might require longer treatment durations or additional interventions like *Nasya* (nasal administration) and *Panchakarma* (detoxification therapies).[13]

Limitations and Future Scope

While the results are promising, the study's limitations include a relatively small sample size (n = 40) and a short follow-up period (30 days). Future studies should incorporate a double-blind, placebo-controlled design with biochemical markers (*e.g.*, testosterone, cortisol) to validate the hormonal mechanisms underlying *Gokshuradi Choorna*'s efficacy. Additionally, *Ayurvedic Nidana Panchaka* (five-fold diagnostic methods) should be integrated to assess psychosomatic aspects, especially the influence of *Manasika Bhavas* (mental factors) like stress and anxiety on *Klaibya*.

CONCLUSION

This study reinforces *Gokshuradi Choorna*'s role as a potent *Vajikarana Rasayana* with multi-dimensional benefits, bridging traditional Ayurvedic wisdom with

modern scientific validation. *Gokshuradi Choorna* is a promising Ayurvedic intervention for *Klaibya*, with significant improvements in erectile function and semen parameters. This study supports its integration into clinical practice for male sexual dysfunction management. Its ability to enhance erectile function, semen quality, and psychogenic factors makes it a compelling alternative to synthetic medications. With further clinical trials and mechanistic studies, it has the potential to become a cornerstone therapy in the integrative management of Impotence.

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