



Research Article

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EFFECT OF A HERBO-MINERAL FORMULATION IN THE MANAGEMENT OF KLAIBYA (ERECTILE DYSFUNCTION)

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ABSTRACT

Enhanced rate of divorce among most elite couple in metros alarmed a unique social stigma. A man who is full of stresses of life and lost his manhood is accepting his failure and ready to sign paper of divorce in court as an escape route to get rid of his responsibility. Erectile dysfunction (Klaibya) or impotence is emerging as one of the most serious life style and stress related disease. Over exertion, physiological disturbances, lowered level of hormones and strained relationship with partner are the main causes for this disease. The remedial measure of Erectile dysfunction (ED) is still evolving in conventional system of medicine. The search for a perfect aphrodisiac drug specially a herbo-mineral drug that will heighten sexual desire, pleasure and performance has been a continuing cultural quest from ancient era to current times. Therefore, a herbomineral formulation was prepared, which consists of Vanga Bhasma, Ashwagandha (*Withania somnifera*) Churna and Kapikachhu (*Mucuna pruriens*) Churna with three Bhavana of each Dhatura (Datura metel) Patra Swarasa and Bhanga (*Cannabis sativa*) Kwatha to evaluate the clinical effect in 40 male diagnosed patients of Klaibya (Erectile dysfunction). Out of 40 patients Klaibya of 29 completed the full course of trial treatment and 11 patients were dropped out from the study. The result of 29 patients showed statistically significant improvement in some sexual symptoms and seminal parameters.

Keywords: Klaibya, Vanga, Dhatura, Bhang

INTRODUCTION

Sexuality has fascinated the people in all walks of life from ancient times to present. Healthy sexual functioning plays pivotal role in maintaining the harmony and happiness in marital life. It is the most essential thing to fulfill the procreational, recreational and relational aspects of life. It provides a media to express love, strength, happiness and professional excellence, wide spread influence, vastness of kinsmen, fame utility to the world and it is the base for all activities. The absence of which hampers the marital relationship leaving to frustration, sometime ends into divorce and causes inefficiency in performing the routine duties; thus person will suffer from psychological stress which may be considered as a disease condition.

It is estimated that in 1995 there were over 152 million men worldwide who had Erectile Dysfunction and in 2025 the number of men with Erectile Dysfunction will be approximately 322 million, an increase of nearly 170 million men. The greatest increases will be in the developing world, that is, Africa, Asia, and South America.¹

The search for an effective aphrodisiac has been a perennial pursuit of most societies which may be supplemented by Rasaushadhies with its quality, safety and tremendous efficacy. The abuses of common man by so called specialists of subject, manufactures and even radical elements (Tantrik and Mantrik) having claims for

sexual potency and progeny is a growing concern to the society. Even after the implementation of Drug and Magic Remedies (Objectionable Advertisements) Act, 1954 to curb this unethical and impractical claim, no proper attention is noticed from the administration.²

In Ayurvedic practice, Vanga Bhasma finds a place in the treatment of genito- urinary tract diseases. It is emphasized for the treatment of disorders such as Nirapatya (male infertility), Shukrkshaya (semen loss) and Napumsakta (impotency). Besides, it also augment semen production i.e Shukrajanana.³ The Shukrala, Balya, Vrishya and Rasayana effect of Ashwagandha and Kapikachchhu are also well documented in the treatises of Ayurveda.^{4,5,6} There are plenty of Vajikarana yogas (rasa ausadhies) in Ayurveda where Dhatura Swarasa and Bhang Swarasa/Kwatha have been used as Bhavana dravya.^{7,8}

Researches on these ingredients to support the classical literature have also shown excellent results. Based on these references, the trial dug (herbo mineral formulation) was designed containing Vanga bhasma, Ashwagandha Churna and Kapikachchhu Churna with three Bhavana of each Dhatura Swarasa and Bhanga Kwatha, which was coded as VAK Rasa.

AIM AND OBJECTIVES

To evaluate the efficacy of VAK Rasa in the management of Klaibya (Erectile Dysfunction)

MATERIALS AND METHODS

Selection of the patients

For the present study, 40 patients fulfilling the clinical criteria for diagnosis of Klaibya (Erectile dysfunction) were selected from the Kayachikitsa and Rasa Shastra O.P.D, S.S hospital, IMS, BHU, Varanasi irrespective of religion, cast, occupation etc. The study was conducted after getting the approval from Institutional ethical committee bearing the no. Dean/2013-14/EC/364.

Types of study

Single blind randomized trial

Inclusion Criteria

- Male married patients suffering from Klaibya (Erectile Dysfunction)
- Age between 21-50 yrs.

Exclusion Criteria

- Age below 21 years & above 50 years
- Unmarried patients
- Patients suffering from STD, Carcinoma, AIDS, congenital abnormalities of genital organs, other disease like Phimosis, Ulceration, Hydrocele, Spinal cord lesions, etc.

Criteria for assessment

The assessment of the patients was done based on subjective as well as objective criteria as mentioned below during the course of trial treatment in two follow-ups. The final assessment was done on the basis of the both parameters and by comparing the laboratorial investigation before and after the treatment.

Subjective Criteria

- Relief in the subjective parameters of erectile dysfunction mainly.
- Relief in the subjective parameters as per international index of erectile function (IIEF) questionnaire.⁹
- Relief in the subjective parameters of associated Sexual dysfunctions and the other symptoms were also considered, to support the main finding and to assess the total effect of the therapy

Objective Criteria

The special scoring system for sexual parameters in male, with some changes was adopted for the statistical analysis of the overall effect of the therapy on different sexual parameters.

Investigations

- Routine hematological investigations: Hemoglobin (Hb), Total leukocyte count (TLC), Differential leukocyte count (DLC), Erythrocyte sedimentation Rate (ESR).
- Biochemical investigations : Fasting Blood Sugar (FBS), PPBS, Lipid Profile, Blood Urea, Serum Creatinine, Serum Cholesterol
- Semen analysis
- Bio markers: Serum Testosterone

The study was cleared by the Institutional Ethics Committee. Written consent was taken from each patient willing to participate before the start of the study. Patients were free to withdraw from the study at any time without giving any reason. A detailed proforma was prepared incorporating Ayurvedic as well as modern points. A total of 40 patients were registered in the present study. Among them 29 patients completed, the course of treatment and 11 patients discontinued the treatment. The investigations were carried out before the treatment to exclude any organic pathology and to assess the general condition of the patient. If any of the abnormalities were found in the investigation reports, those patients were excluded from the study.

Concept of management

The selected patients recruited into clinical trial were given VAK Rasa, in the dose of 3 g twice/day with milk after meal for a period of 9 weeks with 3 follow ups of 3 weeks (21 days) interval.

PREPARATION OF VAK RASA

Vanga Bhasma was prepared by following the reference of Ayurvedic Formulary of India (AFI) part II. The Bhasma was prepared in three steps viz. Shodhana, Jarana and Marana. For Putapaka Electric Muffle Furnace was used and the temperature was fixed at 650 °C for one hour duration which was repeated for seven times to obtain the white colored Vanga Bhasma. Ashwagandha Churna and Kapikachchhu Churna were prepared by following the reference of AFI part I. The dried cleaned root of Ashwagandha and the milk-processed seed of Kapikachchhu were powdered in the pulverizer machine passed through a mesh size of 120 to get the fine homogenous powder.

The mixture of Vanga Bhasma, Ashwagandha Churna and Kapikachchu Churna were triturated with each of Dhatura Swarasa and Bhang Kwatha in the edge runner machine until the mass became completely impregnated. The procedure was repeated three times for each Bhavana Dravya to achieve the final compound which was dried in the sunlight. The dried product was powdered and passed through a clean cotton cloth to obtain the VAK Rasa.

CLINICAL OBSERVATION

Demographical profile: Out of the 40 registered patients, 50% were in the age group of 31-40 years, 32.5% were graduate, Occupation wise 40% were from farmer community, Habitat wise 67.5% were living in rural areas, 70% patients had the history of having mixed diet, 40% maximum patients had regular bowel habit, micturition pattern was regular in 80% patients, 65% had sound sleep, 50% patients had the addiction of betel nut and few patients had the history of smoking and alcohol consumption.

Rogi and Roga pariksha

Prakriti wise distribution: In this study, 57.5% patients were of Vata-Pitta type of Sharirika Prakriti whereas Manasika Prakriti of 45% patients was of Rajasika-Tamasika.

Symptoms wise distribution: Out of the 40 patients enrolled for the study, 3 patients had reduced sexual desire,

36 patients reported weak to moderate rigidity while attempting an intercourse, 35 patients had erection which was very slight with some being unable to penetrate also and 5 patients reported occasional failure during sexual act, 09 patients reported ejaculation with own satisfaction, 30 patients had the complaints that they were able to enjoy only about 25-75% of the sexual acts they indulge in, 32 patients had performance anxiety either before or during the sexual act, 28 patients had post coital exhaustion, 11 patients had less than 60 sec of coital duration and 16 patients reported that they lasted less than 90 sec, 36 patients reported having intercourse once or twice/week.

EFFECT OF THE TRIAL DRUG (VAK RASA)

Statistical analysis

The information gathered on the basis of observation made about various parameters were subjected to statistical analysis. Wilcoxon Signed Rank Test was applied to carry out the significant levels of the sexual parameters while Students paired't' test was applied to carry out the statistical significance of the seminal, biochemical and hematological parameters. The results were interpreted at $p < 0.05$, $p < 0.01$ and $p < 0.001$ significance levels. The obtained results were interpreted as –

- Insignificant - $P > 0.05$
- Significant - $P < 0.05$
- Highly significant - $P < 0.001$

Effect of VAK Rasa on sexual parameters

Table 1: Effect of VAK Rasa on Sexual desire of 29 patients of Klaibya (ED)

Sexual Desire	BT		F1		F2		AT		Within the group comparison (Wilcoxon signed rank test) BTv/sAT
	No.	%	No.	%	No.	%	No.	%	
Grade-0	0	0	0	0	0	0	0	0	z=1.732 p=0.083
Grade-1	0	0	0	0	0	0	0	0	
Grade-2	0	0	0	0	0	0	0	0	
Grade-3	3	5	3	5	3	5	2	3.3	
Grade-4	17	28.3	17	28.3	17	28.3	16	26.7	
Grade-5	9	15	9	15	9	15	11	18.3	

BT- Before treatment, F1-First follow up, F2- Second follow up, AT- After treatment
Effect of VAK Rasa on sexual desire shows no statistically significant improvement after treatment with $p > 0.05$.

Table 2: Effect of VAK Rasa on Penile rigidity of 29 patients of Klaibya (Erectile Dysfunction)

Penile rigidity	BT		F1		F2		AT		Within the group comparison (Wilcoxon signed rank test) BTv/sAT
	No.	%	No.	%	No.	%	No.	%	
Grade-0	0	0	0	0	0	0	0	0	z=2.714 p=0.007
Grade-1	12	20	12	20	9	15	6	10	
Grade-2	13	21.7	13	21.7	16	26.7	16	26.7	
Grade-3	4	6.7	4	6.7	4	6.7	7	11.7	

Effect of VAK Rasa on Penile rigidity shows statistically significant result ($p < 0.05$) with 18.02 % improvement.

Table 3: Effect of VAK Rasa on Penile erection of 29 patients of Klaibya (Erectile Dysfunction)

Penile erection	BT		F1		F2		AT		Within the group comparison (Wilcoxon signed rank test) BTv/sAT
	No.	%	No.	%	No.	%	No.	%	
Grade-0	0	0	0	0	0	0	0	0	z=2.00 p=0.046
Grade-1	0	0	0	0	0	0	0	0	
Grade-2	4	6.7	4	6.7	3	5	2	3.3	
Grade-3	20	33.3	20	33.3	20	33.3	20	33.3	
Grade-4	5	8.3	5	8.3	6	10	7	11.7	

Effect of VAK Rasa on Penile erection shows statistically significant result ($p < 0.05$) with 4.6 % improvement.

Table 4: Effect of VAK Rasa on Ejaculation of 29 patients of Klaibya (Erectile Dysfunction)

Ejaculation	BT		F1		F2		AT		Within the group comparison (Wilcoxon signed rank test) BTv/sAT
	No.	%	No.	%	No.	%	No.	%	
Grade-0	0	0	0	0	0	0	0	0	z=2.428 p=0.015
Grade-1	5	8.3	3	5	1	1.7	0	0	
Grade-2	2	3.3	3	5	5	8.3	2	3.3	
Grade-3	17	28.3	18	30	17	28.3	21	35	
Grade-4	5	8.3	5	8.3	6	10	6	10	

Effect of VAK Rasa on Ejaculation shows statistically significant result (p<0.05) with 13.81 % improvement.

Table 5: Effect of VAK Rasa on Orgasm of 29 patients of Klaibya (Erectile Dysfunction)

Orgasm	BT		F1		F2		AT		Within the group comparison (Wilcoxon Signed rank test) BTv/sAT
	No.	%	No.	%	No.	%	No.	%	
Grade-0	1	1.7	1	1.7	0	0	0	0	z=3.071 p=0.002
Grade-1	7	11.7	7	11.7	5	8.3	3	5	
Grade-2	9	15	9	15	11	18.3	6	10	
Grade-3	7	11.7	7	11.7	8	13.3	15	2.5	
Grade-4	5	8.3	5	8.3	5	8.3	5	8.3	

Effect of VAK Rasa on Penile rigidity shows statistically highly significant result (p<0.005) with 21.14 % improvement.

Table 6: Effect of VAK Rasa on Performance anxiety of 29 patients of Klaibya (Erectile Dysfunction)

Performance anxiety	BT		F1		F2		AT		Within the group comparison (Wilcoxon signed rank test) BTv/sAT
	No.	%	No.	%	No.	%	No.	%	
Grade-0	5	8.3	5	8.3	6	10	6	10	z=7.07 p=0.48
Grade-1	16	26.7	14	23.3	11	18.3	13	21.7	
Grade-2	4	6.7	7	11.7	10	16.7	9	15	
Grade-3	4	6.7	3	5	2	3.3	1	1.7	

Effect of VAK Rasa on Performance anxiety shows no statistically significant result (p<0.1) with no improvement.

Table 7: Effect of VAK Rasa on Post act exhaustion of 29 patients of Klaibya (Erectile Dysfunction)

Post act exhaustion	BT		F1		F2		AT		Within the group comparison (Wilcoxon Signed rank test) BTv/sAT
	No.	%	No.	%	No.	%	No.	%	
Grade-0	8	13.3	8	13.3	8	13.3	8	13.3	z=1.890 p=0.06
Grade-1	10	16.7	10	16.7	8	13.3	9	15	
Grade-2	2	3.3	2	3.3	4	6.7	6	10	
Grade-3	3	5	3	5	4	6.7	1	1.7	
Grade-4	3	5	3	5	4	6.7	4	6.7	
Grade-5	3	5	3	5	1	1.7	1	1.7	

Effect of VAK Rasa on Post act exhaustion shows no statistically significant result (p>0.05) with no improvement.

Table 8: Effect of VAK Rasa on Duration of coitus (in sec) of 29 patients of Klaibya (Erectile Dysfunction)

Duration of coitus (in sec)	BT		F1		F2		AT		Within the group comparison (Wilcoxon signed rank test) BTv/sAT
	No.	%	No.	%	No.	%	No.	%	
Grade-0	6	10	6	10	6	10	6	10	z=2.460 p=0.014
Grade-1	13	21.7	9	15	7	11.7	6	10	
Grade-2	6	10	10	16.7	12	20	11	18.3	
Grade-3	4	6.7	4	6.7	4	6.7	6	10	

Effect of VAK Rasa on Duration of coitus shows statistically significant result (p<0.05) with 24.4% improvement.

Table 9: Effect of VAK Rasa on Frequency of coitus (per week) of 29 patients of Klaibya (Erectile Dysfunction)

Frequency of coitus (per week)	BT		F1		F2		AT		Within the group comparison (Wilcoxon signed rank test) BTv/sAT
	No.	%	No.	%	No.	%	No.	%	
Grade-0	0	0	0	0	0	0	0	0	z=0.577 p=0.564
Grade-1	26	43.3	27	45	25	41.7	27	45	
Grade-2	3	5	2	3.3	4	6.7	2	3.3	
Grade-3	0	0	0	0	0	0	0	0	
Grade-4	0	0	0	0	0	0	0	0	

Effect of VAK Rasa on Frequency of coitus shows no statistically significant result (p>0.1) with no improvement.

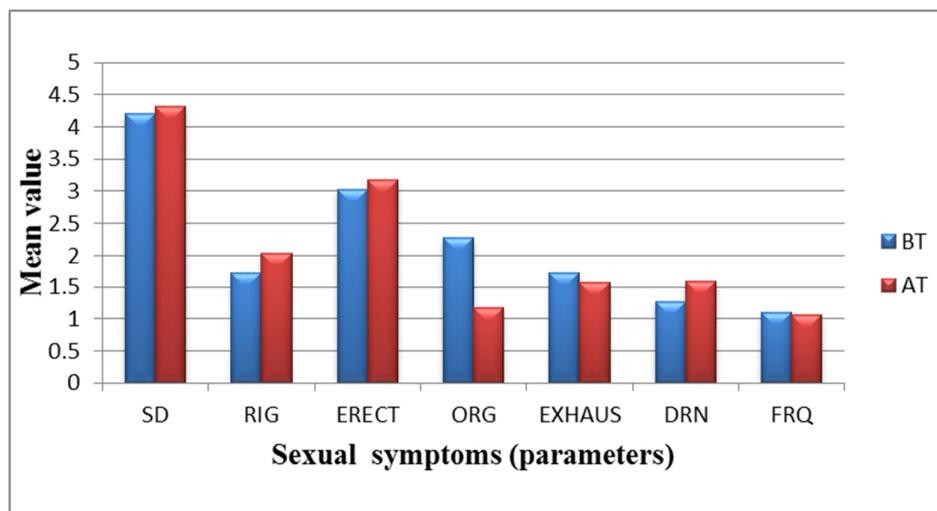


Figure 1: Effect of VAK Rasa on sexual symptoms of 29 patients of Klaibya (Erectile Dysfunction)

SD- Sexual Desire, RIG- Penile Rigidity, ERECT- erection, ORG- Orgasm, EXHAUS-Post act exhaustion, DRN- Duration of coitus, FRQ-Frequency of coitus; BT- Before treatment, AT- After treatment

Data pertaining to Table 1-10 and Figure.1 shows improvement in all the sexual parameters percentage wise although improvement was statistically not significant in all parameters

Effect of VAK Rasa on seminal parameters

Table 10: Effect of VAK Rasa on the seminal parameters of 29 patients of Klaibya (Erectile Dysfunction)

Parameters	Mean±SD			%	't'	'p'
	BT	AT	DIFF.			
Volume	2.33±0.35	2.41±0.33	0.08±0.26	3.41	1.65	>0.1
Liquefaction time	24.56±5.21	24.89±4.76	0.345±1.32	1.41	1.41	>0.1
pH	7.10±0.13	7.11±0.13	0.003	0.04	0.37	>0.1
Immotile	43.58±4.56	43.14±4.38	0.45±2.05	1.03	1.18	>0.1
Progressive	40.0±5.07	41.24±5.08	1.24±2.96	3.18	2.26	<0.05
Non Progressive	16.41±3.94	15.62±3.59	0.793±1.78	4.83	2.39	<0.05
Total sperm count	22.34±15.27	24.49±14.20	2.15±0.87	9.62	2.48	<0.05

With VAK Rasa there was an increase in seminal volume by 3.41 % (p>0.1); liquefaction time of semen increased to 1.41% (p>0.1); Immotile sperms were reduced to 1.03% (p>0.1); progressive motility of sperms was increased by 3.18 % (p<0.05). Improvement was also seen on progressive motility of sperms by 4.83% (p<0.05) and total count of the sperm was increased by 9.62 % (p<0.05). No significant effect (p>0.1) was seen in pH of semen.

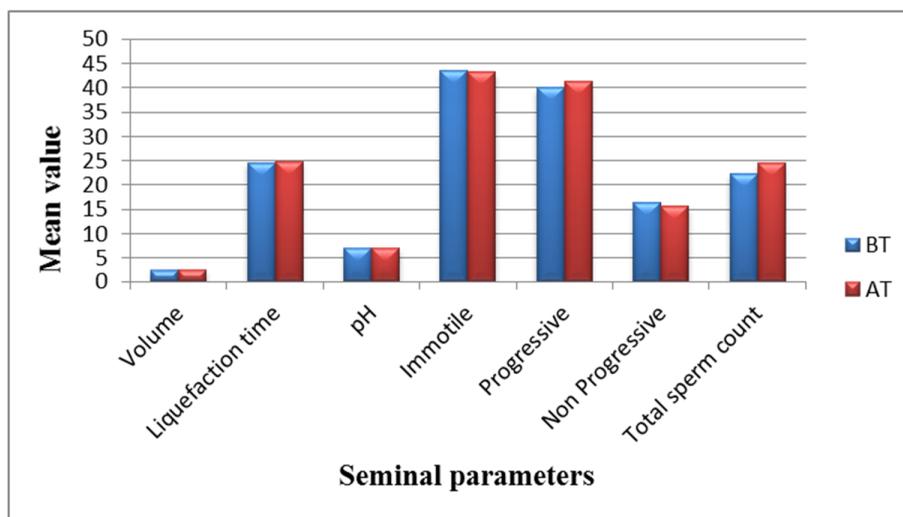


Figure 2: Effect of VAK Rasa on seminal parameters of 29 patients of Klaibya (Erectile Dysfunction)

Data pertaining to Table 10 and Figure 2 shows improvement in all the seminal parameters percentage wise although improvement was statistically not significant in all parameters.

DISCUSSION

The demographical profile of present study reveals that Klaibya (Erectile Dysfunction) is prevailing in the age group of 31-40 years. Sexual dysfunction is otherwise more commonly observed in persons above 50 years of age. Less number of uneducated patients doesn't mean that illiterates do not suffer from sexual dysfunctions but it probably indicates that they seldom approach for any kind of medical assistance. This indicates there is lack of awareness regarding sexuality and related problems or probable shyness to discuss their problems. Occupation wise, maximum numbers of patients were from farmer community and labor class. Ativyayama is one of the causes of Dhatukshaya in general and Shukrakshaya in specific that may lead to the vitiation of Vata dosha, which is the main initiating factors involved in the pathogenesis of Klaibya and further they are having worries about the maintenance of the family, which direct towards the involvement of Manasa Bhava, particularly depression in labor class. Due to the stress and busy way of life associated with anxiety and conflicts with the partner and the society may be the cause. The study shows that maximum numbers of patients were from poor class. Although the disease is prevalent in all types of classes, most of the people around Varanasi region are dependent on cultivation and labor work, so their economic condition is not so good. The urban way of living is known to cause stress, strain and anxiety, which are well known factors that deteriorate the health in general and disturb the sexual health in specific. But the Institute is situated in the border of two states. So, most of the patients are coming from rural areas. Mixed diet is the main reason for increase of Raja and Tama Manasika Dosha causing infliction of mind. The observations regarding bowel habits showed 32.5% patients had constipation & 27.5% having irregular bowel (Muhurbaddha Muhudrava Mala Pravritti). Vitiation of Apana Vata has pivot role in the pathogenesis of Klaibya.

Although maximum patients had sound sleep few percentage of patients were complaining of less and disturbed sleep also. The long time disturbed and less sleep disturbs the hypothalamic regulations and hence the sexual feelings and capacity.¹⁰ Disturbed and less sleep aggravates the Vata and makes the person lethargic, both hampers the sexual arousal.

The tobacco chewing and smoking both are known to cause the narrowing of the micro arteries and arterioles which is the main cause for vascular erectile dysfunction. Simply by giving up smoking, a man's ability to achieve an erection can improve.^{11,12} Alcohol consumption lowers the plasma testosterone synthesis though the alcohol in little quantity increase the libido but the long term and excessive use may induced impotence by several mechanism like peripheral neuropathy, testicular dysfunction, an effect on the hypothalamo-pituitary axis as well as impaired hepatic functions, resulting in increased serum estrogen levels. Even moderate dose may impair erectile function.

The surveillance regarding the Prakriti shows that Vata & Pitta Prakriti are more prone for anxiety, fears etc. kind of psychiatric disturbances. According to Ayurveda, Vataja & Pittaja Prakriti individuals are prone for Alpashukrata¹³ and the same is observed in the present study.

Out of the 40 patients, total 11 patients were dropped from the study. Out of them, 8 patients did not come for follow up due to familial and occupational constrains and 3 patients had to stop medicine due to some untoward reactions. Those three patients were complaining of dryness of mouth and vertigo. Rest 29 patients had completed the full course of treatment as was advised to them. Out of the nine sexual parameters, VAK Rasa provided statistically significant relief in the symptoms of penile rigidity, penile erection, orgasm, ejaculation and duration of coitus whereas no statistically significant relief was seen in sexual desire, performance anxiety, post act exhaustion and frequency of coitus. VAK Rasa showed statistically significant improvement in total sperm count,

progressive motility and non progressive motility of sperms but improvement of other seminal parameters were statistically non significant (As shown in Table 1-10 and Figure 1). The improvement in the symptoms and the seminal parameters were due to the synergistic effect of the ingredients of the VAK Rasa. A rational approach has been made to draw the probable mode of action of the trial drug which is mentioned as under.

Erectile dysfunction or ED (Klaibya) is a multifactorial disorder. Hence, the Vajikarana Yoga VAK Rasa was formulated with different ingredients (Vanga Bhasma, Ashwagandha Churna and Kapikachchhu Churna) and processed with Swarasa of Dhatura Patra and Bhanga Kwatha to break down the diathesis of ED at various levels. Dhatu Kshaya is considered as one of the main pathogenic event in the process of ED. The designed formulation VAK Rasa is predominant in Madhura Tikta Rasa, Madhura Vipaka and Ushna Virya. The Madhura Rasa and Madhura Vipaka improve the quality of Rasa (nutrient plasma) and Ushna Virya and Tikta Rasa increases the Dhatvagni vyapara (tissue metabolism) that helps in digesting the Ama (auto reactive species) at different levels. Further the Rasayana property of Vanga, Ashwagandha and Kapikachchhu improves the nourishment of Sapta Dhatu by improving the microcirculation and tissue perfusion and by direct improvement of nutrient plasma (Rasa) by virtue of enriched nutrient quality.

Besides these Vanga Bhasma possesses the Shukrajanan property,¹⁴ Vrishya effect¹⁵ (Testicular regenerative potential) and significant role in ejaculation, orgasms, sperm count, motility, viscosity and desire.¹⁶

Ashwagandha produces gamma-aminobutyric acid (GABA)-like activity, which inhibits the number of nerve cells that fire in the brain and helps to induce sleep, uplift mood, and reduce anxiety.¹⁷ It contains an alkaloid 'withanin', which mimic the steroidal hormone testosterone.¹⁸ Ashwagandha also inhibited lipid peroxidation and improved sperm count and motility, antioxidant levels, serum testosterone and luteinizing hormone (LH) and reduced levels of follicular stimulating hormone (FSH) and prolactin,¹⁹ helps in proliferation of spermatogenic cells, improves semen quality by reducing oxidative stress and cell death, as well as improving essential metal ion concentrations.²⁰ It also repairs the disturbed concentrations of lactate, alanine, citrate, GPC, histidine and phenylalanine in seminal plasma and recovers the quality of semen of post-treated compared to pre-treated infertile men.²¹

Mucuna pruriens (Kapikachchhu) seeds are rich source of L-DOPA and its metabolites which stimulate the hypothalamus and forebrain to secrete gonadotropin releasing hormone (GnRH)²² which in turn, upregulates the anterior pituitary gland to secrete FSH and LH causing increased synthesis of testosterone by leydig cells of the testis.^{23,24} *Mucuna pruriens* therapy rectifies the perturbed alanine, citrate, GPC, histidine and phenylalanine content in seminal plasma and improves the semen quality²⁵ and significantly ameliorated psychological stress by elevating serum cortisol and seminal plasma lipid peroxide level and decreasing seminal plasma glutathione (GSH), ascorbic acid contents and reduced superoxide dismutase (SOD) and catalase activity.²⁶

The Ushna Virya and Katu Vipaka of Dhatura and Bhanga help in pacifying Vata and Kapha Dosha. Shukra Stambhak²⁷ (Grahi) properties of Dhatura and Bhanga would enhance the duration of sexual act. Vyavayi, Vikasi and Madakari Guna of both these herbs potentiate the action of the other ingredients (i.e. Vanga Bhasma, Ashwagandha Churna and Kapikachchhu Churna) by improving the microcirculation at uro-genital level and imparting CNS effect. Those three patients who were complaining of dryness of mouth and vertigo were of Vata-Pitta type of Sharirika Prakriti, it is due to Ushna virya, and Madakari Guna of Dhatura and Bhanga, which might be responsible for the untoward effect.

CONCLUSION

The selected formulation counteracts the aggravated Vata in Erectile Dysfunction, clears the Shukravaha Srota Dushti and improves the sexual arousal and thus can be used as a good remedy in treating the disease. But Care should be taken while using because Dhatura and Bhang which were used as Bhavana dravya possess CNS depressant effect at higher dose.

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