

## **A Clinical Evaluation of Kushtha (Saussurealappa.–C.B.Clarke.) on Shukradushti w.s.r. to Seminal Parameters and Sexual Health Parameters**

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### **Abstract**

Kushtha is a well-known plant since Vedic era. It is botanically known as *Saussurea lappa*–C.B.Clarke. belonging to the family Asteraceae. In present study roots of *Saussurea lappa* were procured from Dehradun and Gokshura fruit from periphery of Jamnagar and authenticated in Pharmacognosy laboratory of I.P.G.T. and R.A. Clinical study was designed as randomized, prospective, single blind, controlled, parallel and exploratory. In present study 28 patients were randomly divided in two groups. Group A was treated with Kushtha Churna, 1 gm /twice with lukewarm water and Group B (Control) was treated with Gokshura Churna, 2 gm /twice with lukewarm water for 60 days each. Total 25 patients completed the treatment; 13 in Group A and 12 in Group B. The assessment was done on the basis of changes in classical sign and symptoms of *Shukradushti*, seminal parameters and sexual health (parameters) observed before and after treatment. The obtained results were analyzed statistically. Encouraging results were found in *Shukradushti*, semen parameters and sexual health parameters.

### **Keywords**

*Kushtha, Saussurealappa, Shukradushti, Semen parameters, Sexual health parameters, Ayurveda*



**Greentree Group**

Received 10/07/15 Accepted 07/08/15 Published 10/09/15

## INTRODUCTION

The past decade has reported numerous literature implying a significant deterioration of semen quality in the form of reduced sperm concentration impair motility and increased abnormal forms of spermatozoa. In the present world, the infertility is emerging as one of the serious problems. In India itself very high rate of infertility has been reported by various persons.

*Shukradushti* is one of clinical condition which hampers quantity and quality of *Shukra* (Semen and Spermatozoa). The classical references have reported *Kushtha* in various places as a drug of choice when *Shukra* is involved as disease entity. *Acharya Charaka* has described this plant *Kushtha* under *Shukrashodhana Gana* in *Charaka Samhita*. Considering above references *Kushtha* which is botanically identified as *Saussurealappa*–**C.B.Clarke**, by latest research scholars, is taken for research in this study to evaluate its efficacy on *Shukradushti*. In this present study a comparative clinical trial of *Kustha Churna* and *Gokshura Churna* has been carried out to evaluate the efficacy in *Shukradushati*.

## AIMS AND OBJECTIVES

- To study the efficacy of *Kushtha* (*Saussurealappa* – C.B.Clarke) on *Shukradushti*.
- To study the effect of *Kushtha* (*Saussurealappa* – C.B.Clarke) on semen parameters as well as sexual health parameters.
- To compare efficacy of *Kushtha*(trial drug) and *Gokshura*(control drug) on *Shukradushati* , semen parameters and sexual health parameters.

## MATERIALS AND METHODS

### Selection of patients:

- ▶ For the present study, male patients of the age group 20-50 years, complaining regarding reproductive system, had been examined and selected from the O.P.D. and I.P.D. Section of Dravyaguna Department of I.P.G.T. and R.A., Jamnagar.

### Diagnostic criteria:

- ▶ All the patients were diagnosed and assessed thoroughly on the basis of *Ayurvedic* classical signs and symptoms of *Shukradushti*. A detailed history was also taken.
- ▶ On the basis of seminal and sexual parameters.

- ▶ The routine hematological, urine was also carried out to exclude any other pathology.

#### **Exclusion criteria:**

- ▶ Patients having Heart Disease.
- ▶ Tuberculosis.
- ▶ Sexually Transmitted Diseases.
- ▶ Any anatomical defect in the penile region.
- ▶ Taking treatment for major Psychiatric problems etc.

#### **Grouping:**

The diagnosed patients were randomly divided and studied under the following two groups.

#### **Group - A**

In this group, patients were treated with 1 gm. *Kushtha Churna* twice daily for a period of sixty days (60) with lukewarm water.

#### **Group – B**

In this group, patients were treated with 2 gm. *Gokshura Churna* twice daily for a period of sixty days (60) with lukewarm water.

#### **Criteria for assessment:**

The assessment was done on the basis of changes in classical sign and symptoms of *Shukradushti*, seminal parameters and sexual health (parameters) observed before and after treatment. The obtained results were analyzed statistically.

#### **Statistical Test:**

Timely noted observations were subjected to statistical analysis for level of significance by paired 't' test and for final assessment.

#### **Study design:**

It is randomized, prospective, single blind, controlled, parallel study. It deals with results obtained from the clinical trial on the disease *Shukradushti*. Total 28 patients who were fulfilling the diagnostic criteria were selected among them 25 patients have completed the course of treatment, 13 in group A and 12 in group B.

#### **Ethical clearance:**

Institutional ethical committee of I.P.G.T. and R.A., Gujarat Ayurved University, Jamnagar approved the design of study (Approval Number). Written consent was taken from each patient willing to participate before the start of the trial. Patients were free to withdraw their name from the study at any time without giving any reason.

#### **Observations:**

In present study maximum number of patients i.e., 53.57% were from age group of 20-30 yrs, 89.29% (Hindu religion), 46.43% were from businessmen class, 21.42% had history of mumps in childhood, 10.71% patient had family history of DM and infertility. Addiction to tobacco was exhibited in maximum

67.86% of patients, addiction of smoking and alcohol were reported in 67.86% and 10.71%, respectively. Itching in scrotal region and sebaceous cyst were found in 32.14% and 28.57%, respectively.

In the present study, maximum patients (85.71%) were reported for *TanuShukradushti* whereas 57.14% had *PhenilaShukradushti* followed by *VivarnaShukradushti* (17.86%) and *PicchilaShukradushti* (10.71%). In the present study, maximum patients (53.57%) were reported with *VatajaShukradushti* where as 28.57% had *Vata-Pitta Shukradushti* followed by *KaphaShukradushti* (14.29%) and *Vata-KaphaShukradushti* (3.57%).

In the present study, maximum patients (64.29%) were reported as Asthenozoospermic where as 57.14% had Oligozoospermia followed by Oligo-Asthenozoospermia (17.86%) and Azoospermia (7.14%).

## EFFECT OF THERAPY

### Effect of therapy on *Shukradushti*:

After therapy in both groups, *PhenilaShukradushti* was reduced up to 32.14% from 57.14%. *TanuShukradushti* was reduced up to 42.85% from 85.71% in comparison to initial. There was complete remission in *Vivarna* and *PichchhilaShukradushti* after treatment in

comparison to initial. Results are statistically non-significant in reducing symptoms except in *Tanu* type of *Shukradushti*.

### Effect of therapy on seminal parameters-(Appendix-Table 1)

Clinical results suggests that effect of test drug on semen parameters shows significant results except in viscosity, slow linear progressive motility and liquefaction time as compare with another group. Encouraging results shows relation between test drug and spermatogenesis.

### Effect of therapy on sexual parameters :- ( Appendix-Table.2)

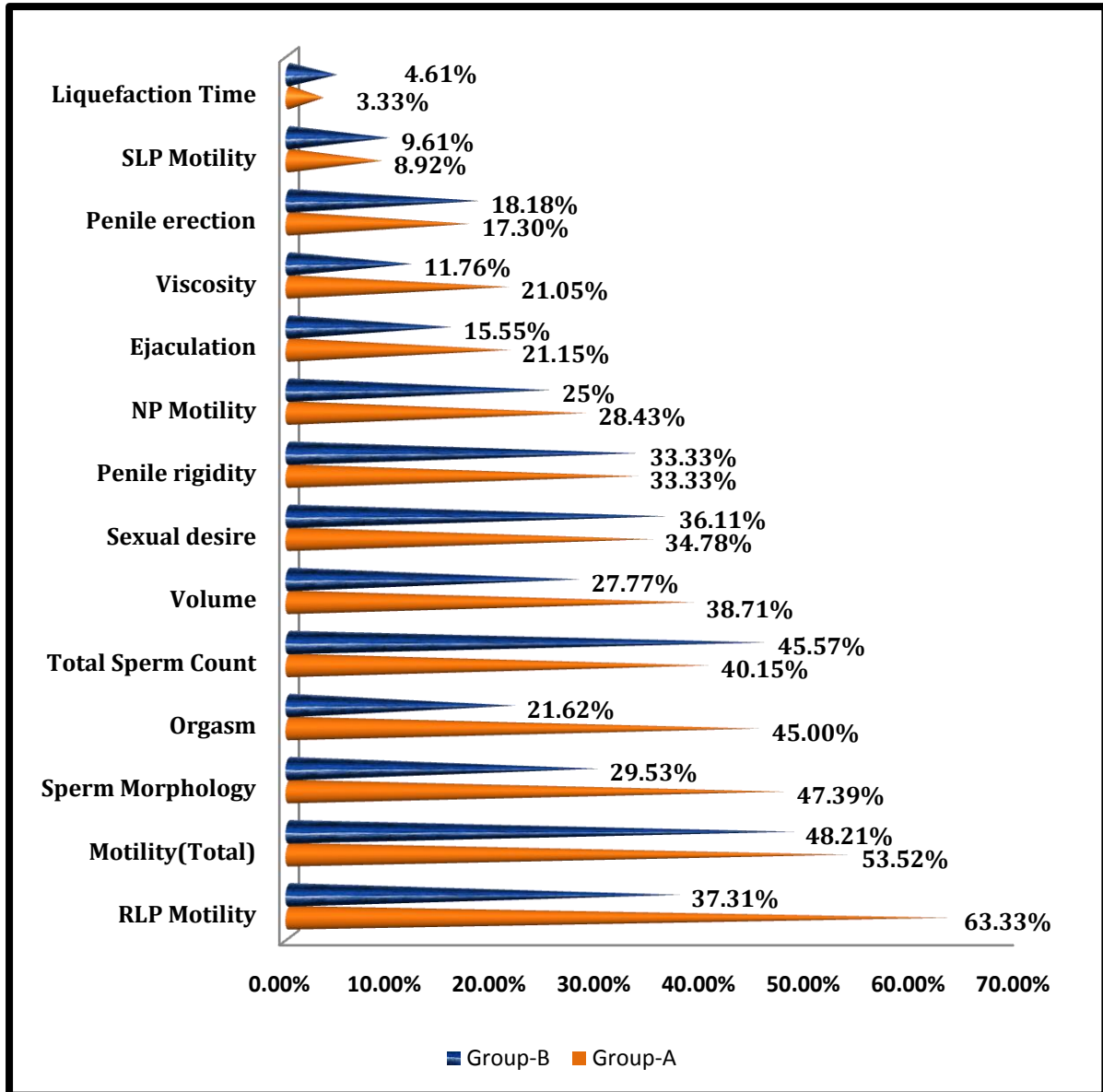
Statistically significant results ( $p < 0.05$ ) on sexual health parameters were found in both groups.

### Overall effect of therapy:

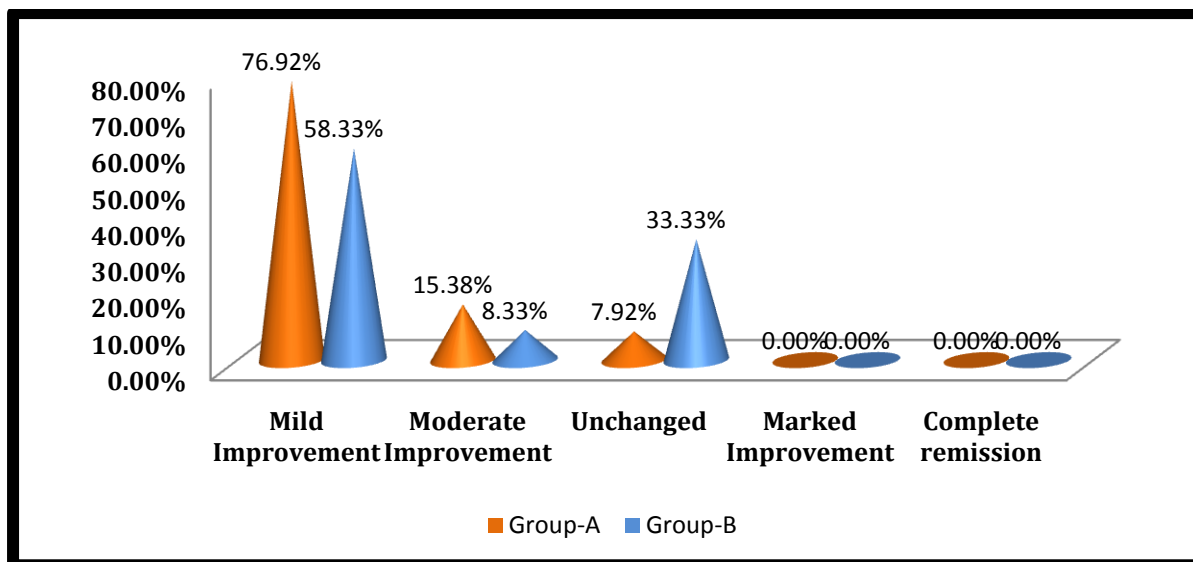
Effect of trial drug (*KusthaChurna*) was compared with effect of control drug (*GokshuraChurna*), data showed that *KusthaChurna* results in signs and symptoms were non- significant except in Orgasm, Semen Volume and SLP Motility comparison with *GokshuraChurna* which signifies that the two drugs are having nearly similar result. The data shows that **68%** of the patients were found with mild improvement while **20%** of the patients were remained unchanged and **12%** of the patients were found with Moderate

improvement. Marked improvement and any patient in both groups. complete remission was not observed in

**Graphical representation 1:** Effect of Therapy on Seminal parameters and Sexual Health Prameters



**Graphical representation 2:** Overall Effect of Therapy



## DISCUSSION

- In the present study it was observed that maximum number of patients, 63.33% were wearing synthetic under garments while the rest 36.67% were wearing cotton made under garments. Wearing pattern was found to be tight in 92.85% of patients and loose in 7.14% of patients. Prolonged period of wearing undergarments or tight undergarments raise the scrotal temperature and because of this epididymal function is hampered and sperm maturation is impaired. This condition leads to low sperm quality as well as low sperm motility.
- Masturbatory act was found positive in 67.86% of the patients amongst them 39.29% patients

were doing since adolescence, 21.43% were doing occasionally and 7.14% were doing in absence of partner. Excessive masturbation leads to poor semen quality (Lipshltz and Witt '92).

- Maximum number of patients (53.57%) were found with *Vataj Shukradushti*.
- Maximum patients got relief in *Tanu* type of *Shukradushti*, which indicates *Vatashamaka* property of drug.

### Probable mode of action of drug:

Drug is described as *Vata-KaphaharDravya* in Ayurvedic classics. *Acharya Charka* has quoted this drug under *Shukrashodhana Gana* in *Sutrasthana*. Effect of drug on *Shukradushti* takes place with different modalities as below:

**Effect due to Rasa:**

Drugs have *Katu*, *Tikta*, *Madhura Rasa*. With the properties of *Rasa* it will encounter *Vata* and *Kapha Dosha*. It will cure *Shukradushti* particularly with *Vata* and *Kapha* related. *Katu Rasa* has *Srotoshodhana*, *Agnivardhaka*, *Tikshna* properties. It may cure *Margavarodha* type *Shukradushti* like *Granthibhuta Shukradushti* etc.

**Effect due to Guna:**

*Kushtha* possesses *Ruksha Guna* and *Laghu* in it. *Rukshaguna* and *Laghu* encounters *Snigdha Guna*. In context of *Shukradushti*, it can be understood that it will cure *Atisnighdhata* in *Shukra*.

**Effect due to Veerya:**

*UshnaVeerya* is another property of *Kushtha*. Due to *UshnaVeerya*, it will encounter *Vata Dosha*, particularly *Apana Vata*. *Gati* of *Apana Vata* gets normalized (*Anulomana*). This way it will work on functional mechanism. Another benefit of *Ushna Veerya* that it will enhance *Jatharagni* and *Dahtwagni* (local as well as general metabolism.) Because of this, it will correct *Dhatuposhana Krama* and ultimately it will lead to production of *UttamaShukraDhatu*.

**Effect due to Vipaka:**

*Kushtha* possesses *Katu Vipaka*. It performs *Kapha Dosha Shamak Karma* due to *KatuVipaka*.

**Effect due to Prabhava:**

Besides the *Rasa*, *Guna*, *Veerya* and *Vipaka*, there is some specific property in some drugs, which is called *Prabhava*. *Shukrala* and *Shukrashodhana Karma* are described by almost all *Acharya*. Due to *Shukrashodhana Prabhava*, it may cures undergoing pathological condition in *Shukra*. According to modern advanced research, Anti-inflammatory, Anti-bacterial, Anti-septic and immune-stimulant effect of *Saussurialappa* is proved. Chronic inflammation in reproductive path will leads to adhesions of inner wall of vas deference etc. which convert into permanent or temporary blockage of passage of Spermatozoa during ejaculation. Because of the above properties, it will clear inflammation. In traditional practice, Old *Vaidyas* were also using this plant for *Shopha* (inflammatory) condition in genito-urinary organs. Another *Vrishya* (Aphrodisiac) effect is also mentioned in *Ayurvedic* classics. Modern research findings suggest that the essential oil is excreted in the urine and during its passage through the urethra it may produce a certain amount of irritation giving rise to aphrodisiac effect.

## CONCLUSION

- *Kushtha Churna* showed encouraging results in reducing classical symptomatology of *Shukradushti*.
- Effect of *Kustha Churnawas* as compared with the control drug *Gokshura Churna* showed that results in signs and symptoms were non- significant except in Orgasm, Semen Volume and SLP Motility.
- Both the groups have significant effect on seminal parameters as well as on sexual health parameters. This signifies that both drugs have nearly similar effect.
- *Kustha Churnahas* has no adverse effects on biochemical and hematological values.
- No side effects were observed during the course of the clinical study.



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**Table 1** Effect of therapies on seminal parameters

Seminal parameters	Effect (%)	
	Group-A	Group-B
Semen volume	38.71*	27.778*
Sperm count	40.157*	45.57**
Viscosity	21.053	11.765
Sperm motility		
Total	53.521*	48.214**
RLP	63.333*	37.313*
SLP	8.9286	9.615
NP	28.431*	25*
Abnormal form	47.39**	29.534*
Liquefaction time	3.33	4.61

RLP = Rapid Linear progressive motility.

SLP = Slow linear progressive motility.

NP = Non Progressive

Paired 't' test:

\* =  $P < 0.05$  statistically significant

\*\* =  $P < 0.01$  statistically highly significant

**Table 2** Effect of therapies on sexual parameters

Sexual parameters	Effect (%)	
	Group-A	Group-B
Sexual desire	34.783 ↑ *	36.11 ↑ *
Penile erection	17.308 ↑ **	18.182 ↑ **
Penile rigidity	33.333 ↑ *	33.333 ↑ *
Ejaculation	21.154 ↑ *	15.556 ↑ *
Orgasm	45.00 ↑ **	21.622 ↑ *

↑ Increase

**Paired 't' test:**

\* =  $P < 0.05$  statistically significant

\*\* =  $P < 0.01$  statistically highly significant