

A Comparative Clinical Study to Evaluate the Combined Efficacy of Vrushya Basti and Bilwadi Niruha Basti Followed by Musalyadi Churna in the Management of Shukradusti W.S.R. to Oligoasthenoteratozoospermia

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ABSTRACT

Shukra Dusthi is qualitative and quantitative reduction of shukra dhatu. Ashta Shukradushti Lakshana can be correlated with the Semenogram based on doshik involvement. Shukra kshaya, Shukravaha srotodusti and Mano dosha's are the prime factors involved in the pathogenesis. Shukradushti can be correlated with reduction in Sperm count, sperm motility and Sperm Morphology due to vitiation of Vata pradhana tridosha's. Oligoasthenoteratozoospermia is combination of three abnormal seminal parameters i.e Oligozoospermia which is Reduced sperm count less than 15million/ml or 39 million/Ejaculate. Asthenospermia, reduced sperm motility (progressive motility and sluggish Motility) less than 40% and Teratoozoospermia is reduced percentage of Normal Sperm Morphology less than 5%, when all the three semen parameters are Reduced in quantity it can be said as OAT Syndrome. In the context of shukra dusthi, treatment with Brimhana treatments like Basti, vrushya, Rasayana is much highlighted and considered as the best in managing shukra dusthi condition. So in the present study Basti is selected in the form of Vrushya basti, Bilwadi niruha basti and Musalyadi vrushya yoga. Also, it is easy for the patient to undergo treatment and carry out their daily routine and offers very limited restrictions to follow. The objectives of this study is to assess the efficacy of Vrushya basti and Bilwadi niruha basti followed by Musalyadi vrushya yoga and to review critically on aetio- pathology, Roga Rogi Pareeksha and diagnosis of Shukra Dusthi (Oligoasthenoteratozoospermia) as per Ayurveda and modern literature.

KEYWORDS: Basti, Vrushya Basti, Bilwadini Niruha basti, Musalyadi churna, Male Infertility, Ayurveda, Oligoasthenoteratozoospermia, Shukra dusthi

INTRODUCTION

Shukradhatu is one among Saptadhatu, the main function of shukra dhatu is Garbha-utpanna(reproduction)¹. Shudda shukra lakshanas are snigdha, ghana, picchila, madhura, avidahi and sphatika varna. Due to Aharaja, Viharaja and Manasika Nidana causes Shukravaha Srota Pradushana and Apanavata and Vyana vata dusti leads to Shukradusti. Shukra dusti is characterized by Phenila, Tanu, Ruksha, Vivarna and so on.²

Oligoasthenoteratozoospermia (OAT) is a condition that includes Oligozoospermia means low sperm count(<15million/ml), Asthenozoospermia means poor Sperm motility (40%)³, Teratozoospermia refers to abnormal sperm morphology (<05%)⁴. so shukrsdusti can be considered as Oligoasthenoteratozoospermia in which both quality and quantity of shukra is reduced and lead to infertility. Globally Oligoasthenoteratozoospermia

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(OAT) affects approximately 30% of all infertile men⁵. WHO (2023) has estimated incidence of global infertility as 17.5%. the contribution of male factor alone to this total infertility is reported as 26.2% to 46.6%.

Due to advancing age, incorrect lifestyle and environmental factors plays an important role on natality and may causes Oligoasthenoteratospermia finally leads to male infertility, its consequences on the future human population makes this an important public health issue in this century ⁶.

Basti is having multidimensional action in the treatment of vitiated *Vata, Pitta, Kapha dosha*⁷, and it is also *Shukravardhaka* in action⁸. both *Niruha basti* and *Anuvasana basti*'s indicated in *Shukra vikara*⁹. In the present study *Vrushya Basti* which has the combination of *Sthiradi Panchamula* and other drugs having the properties like *Vrushya* and *Balya*¹⁰ is taken. and *Bilwadi Niruha basti* has the combination of *Brihat-panchamula* and other drugs having the properties like *Vrushya*, *Balamamsa vardhana* and *Pumsa* action is taken¹¹. *Murchita Gogrita* having the properties like *Shukravardhana* and *Shukrashodhana*, *Ojakara* and *Vaata-Pittahara* action¹² and used for *Anuvasana basti*. *Musalyadi churna* is combination of *Musali*, *Ikshuraka* (*Kokilaksha*) and *Gokshura* having the property of *Rasayana* and *Vaajikarana* action¹³ as *Shamanayoga* is adopted.

Modern treatment modalities have their own limitation in treating such cases hence research in this regard is need of the hour.so by considering the all the above explanation the procedures like *Vrushya basti*, *Bilwadi niruha basti*, *Anuvasana basti* with *Murchita Go-grita* may be beneficial to improve semen parameters.

Methodology:

A comparative study of Minimum of 40 patients with clinical features of *Shukradushti* (Oligoasthenoteratozoospermia) coming under inclusion criteria will be selected irrespective of gender, religion, race, socio-economic status from OPD of Taranath Government Ayurvedic Medical College and Hospital, Ballari.

Treatment Protocol: Vrushya Basti and Bilwadi Niruha Basti

Purva Karma - *Deepana pachana* with *Trikatu Choorna* (1-3gms thrice a day with *Ushnajala*, before food) for 3-7 days/ till niraama lakshanas are attained. *Koshtashodhana* with *Murchita Eranda Taila* 50-100ml, on the basis of *koshta Anupana* – *ushnodaka* for one day and *Sthanika Abhyanga* with *Murchita Tilataila* & *Patra Pinda Sweda* Daily before giving *Anuvasana* and *Niruhabasti*

Pradhana Karma - As Basti mishrana done as per classical method and Basti is administered in Karma Basti pattern for 16days in *Bilwadi Niruha Basti* and *Vrushay basti* in 30days

Paschat Karma -

For *Anuvasana basti*:

1. *Hasta, padamardana* and *spik-tadana*.
2. *Ushna jala snana* followed by *laghu bhojana*

For *niruha basti*:

1. *Ushna jala snana*
2. Diet contains *shastikashali*, soup of meat, pulse and *ksheera*.

Aushadha Yoga: *Musalyadi choorna* 3-5gm/day -15 days.

DIAGNOSTIC CRITERIA

The diagnosis of the disease is mainly based on Signa and Symptoms of *Shukradusti* and abnormal semen analysis values suggesting Oligoasthenoteratozoospermia.

INCLUSION CRITERIA

- Diagnosed cases of Oligoasthenoteratozoospermia.
- Subjects age group between 18-50years.
- Sperm count less than 15million /ml.
- Sperm motility less than 40%.
- Sperm morphology <4%.
- Subjects who are fit for both *Anuvasana* and *Niruha Basti Karma*.

EXCLUSION CRITERIA

- Subjects with Azoospermia
- Congenital disorders related with reproductive system like bilateral absence of the vas deferens, cryptorchidism, marfans syndrome, Klinefelter's syndrome.
- Subjects with Bilateral & > Grade-2 Vericocoele.
- Subjects with other systemic diseases like tuberculosis, uncontrolled diabetes & which interfere with the course of treatment.

LABORATORY INVESTIGATION:

Following investigation will be carried out before & after treatment,

- Routine investigation.
- Semen analysis
- USG- Scrotum

STUDY DESIGN

A Comparative clinical study with 40 patients with symptoms of *Shukradusti* and diagnosed case of Oligoasthenoteratozoospermia was selected.

ASSESSMENT CRITERIAS:

The Assessment will be made on the basis of the following subjective and objective parameters before and after treatment and during follow up.

A. SHUKRADUSTI TYPES:**TABLE NO 65 SHOWING SHUKRADUSTI TYPES**

SI. NO	TYPE OF SHUKRADUSTI	PRESENCE/ ABSENCE
01.	<i>Phenila</i>	
02.	<i>Tanu</i>	
03.	<i>Ruksha</i>	
04.	<i>Vivarna</i>	
05.	<i>Puti gandha</i>	
06.	<i>Picchilam</i>	
07.	<i>Anuadhathu-Upasasrusta</i>	
08.	<i>Avasadi</i>	

B. Objective Parameters:

WHO Published Reference Values for seminal Fluid Analysis Parameters¹⁴:

TABLE NO 48 SHOWING GRADES OF SEMINAL PARAMETERS

SI. NO	SPERM COUNT	SCORE
01.	Normal (>20million/ml)	0
02.	Mild (>14million/ml)	01
03.	Moderate (>7 to <14 million/ml)	02
04.	Severe (0 to 7 million/ml)	03
	SPERM MOTILITY	
01.	Normal (>50%)	0
02.	Progressive (30%-50%)	01
03.	Non-Progressive (5%-15%)	02
04.	Immotile (<5%)	03
	SPERM MORPHOLOGY	
01.	Normal (>15%)	0
02.	Mild (10-14%)	01
03.	Moderate (5-9%)	02
04.	Sever (< 5%)	03

C. Laboratory Investigations:

Semen analysis and other laboratory Investigations have been assessed before and after treatment. Data obtained were compared after the treatment and analysed statically by using test of significance and relief in percentage.

Observation:**1. Distrubation of Subject according to age:**

- In Group A, 03(15%) patients belong to the age group of less than 30 yrs, 09(45%) patients belong to the age group of 31-35 yrs and 8(40%) patients belong to the age group more than 36 yrs.
- In Group B, 04(20%) patients belong to the age group of less than 30 yrs, 09(45%) patients belong to the age group of 31-35 yrs and 7(35%) patients belong to the age group more than 36 yrs.

2. Distrubation on the basis of Socio-Economical Status:

- In Group A, 12(60%) patients belong to Lower socio-economic status, 07(35%) patients belong to Middle socio-economic status, 01(05%) patient belongs to Upper socio-economic status.
- In Group B, 15(75%) patients belong to Lower socio-economic status, 04(20%) patients belong to Middle socio-economic status, 01(05%) patient belongs to Upper socio-economic status.

3. Showing Incidence of PME:

- In Group A, 09(45%) patients had habit of Premature ejaculation, 13(65%) patients not had history of Premature ejaculation.
- In Group B, 13(65%) patients had habit of Premature ejaculation, 07(35%) patients not had history of Premature ejaculation.

4. Distrubation on the basis of Erectile Dysfunction:

- In Group A, 12(60%) patients had habit of Erectile Dysfunction, 08(40%) patients not had history of Erectile Dysfunction.

- In Group B, 06(30%) patients had habit of Erectile Dysfunction, 14(70%) patients not had history of Erectile Dysfunction.

RESULT:

OVER ALL EFFECT ON SUBJECTIVE PARAMETERS

Table: Comparison of Group A and Group B with overall effect Changes from	% of change in Group A	% of change in Group B
Before treatment-After treatment	44.79	57.20
Before treatment-After follow-up	76.50	81.33

CHANGES IN SPERM COUNT, SPERM MOTILITY AND SPERM MORPHOLOGY FROM BEFORE TREATMENT TO AFTER TREATMENT AND BEFORE TREATMENT TO AFTER FOLLOW-UP IN GROUP A AND GROUP B

Parameters	Changes from	Group A	Group B
Sperm count	Before treatment to After treatment	53.19	43.75
	Before treatment to After follow-up	70.21	72.92
Sperm motility	Before treatment to After treatment	32.43	22.92
	Before treatment to After follow-up	45.95	47.92
Sperm morphology	Before treatment to After treatment	34.78	40.91
	Before treatment to After follow-up	65.22	72.73
Overall	Before treatment to After treatment	40.13	35.86
	Before treatment to After follow-up	60.46	64.52

Effect of Vrushya Basti:

Vrushya Basti was highly significant in improving the sperm count about 70.21%, sperm motility about 45.95%, sperm morphology about 65.22% after follow-up treatment, increased the volume of semen by 18.95%, sperm viability by 19.22%, erectile function by 35%, orgasmic function by 25%, sexual desire by 80%, ejaculatory function 70%, frequency of coitus by 25%, duration of coitus by 40% were observed.

In group A, the over all effect of Vrushya basti before treatment to after treatment is 40.13% i.e mild improvement and before treatment to after follow up is 60.46% i.e Moderate improvement on OAT.

Effect of Bilwadi Niruha Basti:

Bilwadi Niruha Basti was highly significant in improving the sperm count about 72.92%, sperm motility about 47.92%, sperm morphology about 72.73% after follow-up treatment, increased the volume of semen by 22%, sperm viability by 15%, erectile function by 45%, orgasmic function by 25%, sexual desire by 38%, ejaculatory function 52%, frequency of coitus by 34%, duration of coitus by 30% were observed.

In group B, the over all effect of Bilwadi Niruha Basti before treatment to after treatment is 35.86% i.e mild improvement and before treatment to after follow up is 64.52% i.e Moderate improvement on OAT.

Discussion:

Deepana-Pachana is an essential and first step aa Purvakarma before shodhana to increase the jatharagni and reduces the Ama in the body, in this study for this purpose Trikatu churna has been selected. Which having property of Laghu, ruksha and Ushna veerya and having vatanulomana and vrushya property.

Koshtashodhana with murchita Eranda taila was selected because Eranda possess Vrusya and Vatahara property and Koshta shodhana done to increase the Bioavailability of Basti Dravya and Vatanulomana.

Basti: Reasons for selection of Basti Karma:

- The aggravation of all Dosha's of the body is principally dependent on the aggravation of the Vata; so Basti is the best treatment mainly for Vata dosha, when it administered, churns out the

impurities by its potency, acts upon the whole body and on every system of the body, from head to toe (आपादतलमूर्धस्थान्) through the Sukshma srota's and which makes control over the panchavata's as it removes the diseases from its root.

- Basti will does shodhana of dosha's as well as srota's and it increses oja's, shukra and agni.
- Basti is not only acts on Vata dosha but it also acts on pitta, kapha dosha and even in derangement of rakta dhatu. It is also effective in case of diseases due to combination of two doshas or all the three doshas. So here shukradusti is not only caused by single dosha, it may also cause by combination of doshas.

- As Basti acts in a multidimensional aspect, it does as in shukradusti, both sthanika and sarvadaihika vitiation of dosha with their respective lakshana's, here basti also acting on both sthanika and sarvadaihika dosha's, by this basti is more effective in Shukradusti.
- Shukradusti may be due to Margavarodha janya conditions like a level of obstruction in epididymis, Vasa Deferens and Ejaculatory ducts and also varicocele etc... Dhatukshayajanya pathologies like decreased production of Sperms, less volume of seminal fluid, low motility and decrease morphology of sperms due to their respective nidana's, so basti will acts on both the pathologies. शुक्र वह्नावरोधस्य न क्षयं जाति देहिनः।
- Basti which cleanses the body quickly and easily as Basti with the added benefits of not causing any depletion and instead nourishes instantaneously and is free from any adverse effects so Basti can be administered even in lean patients.
- When basti is administered, the veerya of basti drugs will reaches the Apana vayu and nourishes it later vyana vata, here shukradusti is also one of the condition due to apana vata and Vyana dushti mainly so basti is more efficient in shukradusti.
- Benfits of Basti is Shukra-bala prada..., Ksheena shukram vaajikaroti (Improves The abnormal seminal parameters))
- Basti has both function like expelling vitiated Dosha and nourishes the body. First, the Basti drugs, the active principles of drugs are absorbed; allowing them to have a systemic effect related to Male reproductive system. Its second important effect is connected to the facilitation of the excretion of Dosha (Apana etc) responsible for the illness from the colon, as well as the activation of higher centres via the Gut-Brain Axis.
- The Basti may change the diversity of gut microbiota based on its ingredients. Strong evidence demonstrates that the gut microbiota plays a significant role in the gut-nervous system's bidirectional connections may play role in sperm quality & quantity. The administration of Basti may trigger certain neuro-immuno-endocrine processes will correct the Hormonal imbalance related to male reproductive system, resulting in a systemic therapeutic effect.

By considering all these it may be beneficial in the management of shukradushti condition so Basti is selected for the present study.

Probable Mode of Action of Basti Treatment:

From observation and analysis of different grades and categories of both seminal as well as sexual parameters gave some idea about probable mode of action of the therapies. Increase in sperm count by both the treatment reveals that both Basti's & Musalyadi churna yoga contains Shukra Janaka, Shukra vardhaka and Shukra sodhaka properties. The effect of the therapies on Oligoasthenoteratozoospermic grade indicate that Basti therapy was more effective in all seminal parameters, hence it can be said that Basti is active at both primary level as well as particular stages of spermatogenesis, These are the effects of Bilwadi niruha Basti may be due to presence of Shukrala, Vrişya and Vajikaraṇa properties of all the contents whereas Vrushya Basti & Musalyadi churna yoga provided improvement in mild and moderate grade of Oligoasthenoteratozoospermia. But it can be said that this treatment is not effective on various stages of spermatogenesis because this group improved more patient, turned to Normozoospermic condition.

Bilwadi Niruha Basti group provided improvement i.e. increase in RLP motility, SLP motility and decrease in NP motility better than Vrushya Basti. It does not mean that Vrushya Basti group are having less Asthenozoospermic effect than Bilwadi Niruha Basti. There is very slight deference. Both the group shows better improvement in asthenozoospermic conditions. The ingredients of Vrushya Basti and Bilwadi niruha Basti, both having Shukrala and Vrişya properties. The increase in viability of sperm was found by both the therapies. It may be due to balya and santarpana guṇas which might have enhanced the membrane integrity of sperms by acting as vitalizing agents. Among all sexual health parameters all were improved significantly by both the groups which mean both the Basti's were found effective in corresponding Apana Vataduṣṭi.

After that it can be concluded that all the ingredients of Vrushya Basti as well as Bilwadi Niruha basti were Vata pradhana tridosha hara which is the main factor for making samprapti vighatan of Shukraduṣṭi V/s Oligoasthenoteratozoospermia. Madhura rasa, guru, snigdha guṇas, sita virya, madhur vipaka, balya, Vrişya, Shukrala, Shukrashodhana & Rasayana action of Musalyadi churna yoga provided better improvement in sperm count and motility. Due to improved status of health and as well as action of ingredients like Musali, Gokshura and Kapikacchu. showed increased sexual desire capacity, frequency and duration. Hence, getting orgasm or sexual satisfaction has shown better by Bilwadi Niruha Basti, Vrushya Basti & Musalyadi churna yoga group.

Probable mode of action of the Musalyadi Churna: The most contents of Musalyadi churna yoga are having properties like Madhura, Tikta rasa, Guru, Snigdha guna, Madhura vipaka, Sheeta veerya and Vata-Pitta shamaka. They have properties like Vrishya, Shukral, Valya & Rasayana.

Vata and Pitta are the main cause of Shukra kshaya type of Shukra dusti and most contents of Musalyadi churna yoga are Vata-Pitta shamaka, therefore these drugs help in samprapti vighatana of this type of Shukradusti.

All the contents of Musalyadi churna yoga are snigdha guna, madhura rasa and madhura vipaka, Rasayana & Vrushya. These properties are nourishing property, so that it facilitates the nourishment of Shukra dhatu.

One of the ingredients Gokshura has aphrodisiac action due to the presence of saponin. It boosts the hormone in the body. It stimulates increase in hormone production (Testosterone) and also stimulates its effect. Saponin of this plant are of farostanolo type with a high content of protodioscine which stimulates spermatogenesis and libido. It also acts as diuretic and removes toxic compounds through kidneys. The aphrodisiac and fertility potentiating action has been tested.

Comparison of both Basti therapies:

On the basis of the present study in nutshell it can be stated that both therapies were found effective in treating Shukradushti (Oligoasthenoteratozoospermia). However, an upper hand was observed in the effect of Bilwadi niruha basti group in the management of Oligoasthenoteratozoospermia.

Conclusion:

Shukra has multi-functional identity, out of which *Dhairya*, *Chavana* and *Preeti* are interdependent and related to sexual act.

Etiological factors of *shukradushti* like *dushti* of *Apanavata*, *Vyan Vata dushti* and *Avruta Avastha* of *Apana Vata* itself by *Kapha dosha* has been mentioned in various texts. The comparison of the types of *shukradushti* with signs and symptoms of Oligoasthenoteratozoospermia showed that, only *Vataja pradhana tridosha* type of *shukradushti* could be correlated with it. *Aharaja Viharaja* and *Mansika Bhava's* plays pivot role in causing *shukravaha srotodushti*.

The line of treatment of *Shukradushti* (Oligoasthenoteratozoospermia) should be based on *Bramhan Chikitsa sutra*, and *Vrīṣya* drugs having

shukra Vriddhikar, *shukrastrikara* and *shukravṛddhistrikara* properties.

Basti is the only therapy which acts on both *dhatukshaya janya shukradushti* and *margavarodha janya shukradushti*. Basti works at *Pakvashaya* and *Pakvashaya* is the main seat of *Apana Vayu* which performs the functions of *shukra pravartaka*. Hence, *Basti* containing *Vajikarana dravya* is mentioned for *Shukradushti*.

In this study both the groups more effectively raised the sperm count and motility and morphology along with sexual parameters but the *Bilwadi Niruha basti* offered supremacy over group *Vrushya basti* and offered magnanimous results.

As a matter of fact, that all the *Panchakarmas* including *Basti* are advocated in *Shukradushti* by classical authorities. so from this study it can be constructed that before starting any *vajikarana yoga*, *Bilwadi niruha basti* should be administered first, to enhance the purity of semen and sperm and to get desired results, then only we can get more significant results in the patients of *Shukradushti* (oligoasthenoteratozoospermia). It may be considered as remarkable contribution of this thesis.

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