

“A Comparative Study of Palashbhasma-Ashmabheda Siddha Ghruta Pana and Uttarbasti In Granthija Shukra W.S.R. To Asthenozoospermia”

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Abstract: One in six couples in this country have difficulty in conceiving a baby. The number of couples seeking medical help to have a family has risen dramatically. The fact is that infertility in women and even men is increasing not just in India but everywhere. The contribution of male factor alone to this total infertility is reported as 26.2% to 46.6%. Asthenozoospermia, one of cause of infertility can correlate with Granthija shukradushti where motility of sperm get lost. Still all are searching for effective remedy on it. The holistic preparation of Palashabhasma-ashmabheda siddha ghrut was found vrushya ,rasayan. Clinical study was done on 60 diagnosed asthenozoospermia patients divided in two groups. Assessment parameters were sperm count, motility, pH, Liquefaction time, volume, sperm viability and morphology for diagnosis. Conclusions found at the end of the study were significant increase in the sperm count, volume, viability, no. of active sperm. The route pana gives better results than uttarbasti.

Keywords: Asthenozoospermia, Granthija shukradushti, vrushya, uttarbasti.

I. Introduction

Every organism in this universe attempts to keep up its progeny. In order to fulfill this achievement it is indispensable that both the sexual partners should be fertile. For years, experts have been warning us of a world population explosion. But now, it seems, the tables have turned at least and the growth in the population has come to halt^[1]. Nature always doing better for all living being; but life of modern man is far removed from the rules & nature. In fact, there has been a drastic change in his day by day activities including lifestyle, food habits, sexual life, environmental pollution, industrial and occupational hazards. Due to all these factors infertility is increasing day by day.

Researches indicate that the level of fertility in India is beginning to decline. The TFR (Total Fertility Rate) has declined from 3.6 in 1991 to 2.5 in 2010^[2]. WHO (1976) has estimated incidence of global infertility as 16.7%^[3]. However unwanted sterility remains one of the most serious personal problem for a couple. *Vandhyatva* has been long standing problem since ancient period. It is a very disturbing for most women resulting in deep fissures in marital bliss, family and society. The male himself is equally unsatisfied and finds himself guilty for the same increasing the problem all the more. In total infertility factors, male factors is 30-40% responsible causing infertility.^[4]

Male infertility can be defined as an inability to induce conception due to defect in spermatogenic functions.^[5] The male partner carrying pathological semen reports include low sperm count, motility, abnormal forms and sperm functional tests and whose female partners have been ruled out for the possible etiological factors of infertility may be diagnosed under male infertility^[6]. The most common problems men face are low motility of sperm i.e. Asthenozoospermia. WHO defines asthenozoospermia as motility less than 25% of rapid linear progressive activity (A) or 50% or less than 50% of total forward progressive motility (A+B)^[7]. The causes of asthenozoospermia are mental stress, overheating, varicose vein, STD's, nutrition deficiency, obesity, smoking, genetic factors, environmental factors, defect in flagellum, metabolic defect in sperm, defects in cell regulation and axoneme.^[8]

In *Ayurvedic* classics eight type of *shukradoshas* are enumerated^[9]. This classification is based upon two methods, first one is based upon physical characters of *shukra tanu, alpa, ruksha, Phenil*^[10] etc and next is based upon involvement of *doshas* in *shukra* e.g. *vataj, pittaj, kaphaj shukradushti*^[11] etc. *Granthija shukra* is a disease of *shukra* in which *vata-kpaha doshas* are involved.^[12]

Advances in medical treatments mean it is technically possible for many more couples with fertility problems.^[13] However, ironically, the current cash crisis in the NHS means that, in practice, many couples are denied any treatment at all with low priority. Approximately 15% of men seeking helps at infertility clinics.^[14] The drugs we have now are not advanced enough to treat male infertility. Alternatively, an equally effective, safe, and affordable with little or no side effect can be developed for use especially in *Ayurveda*.

According to *Ashtang Hruday*, *Palashbhasma ashmabheda siddha ghruta* is an excellent drug for the treatment of *granthijshukradushti*^[15]. In the treatment of *shukradushti*, drug can be given by orally and *uttarbasti*^[16]. Keeping this view in mind an attempt has been made in present study for assessment of better route of administration i.e. *Pana* and *uttarbasti* of this drug in *granthijshukradushti*.

II. Material & Method

2.1 Drug Preparation & Standardization- All the ingredients of the drug were collected from genuine source and were authenticated with the help of experts.

Contents of the drug are- *Palash bhasma*^[17]- *Vatashleshmanashan*, aphrodisiac
Pashanabheda^[18]- *Tridoshashamak*, *ashmabheda*
Ghruta^[19]- *Yogavahi*, *sanskarasyanuvartana*, aphrodisiac.

All raw material standardization was done as per WHO guidelines. Parameters found within normal limits of API. *Bhasma* and *Ghruta* were prepared according to *Sharangdhar sanhita*^[20] & according to GMP norms and standardized for R.I., Loss on drying etc. done.^[21]

2.2 Clinical Study: - NOC from Institutional Ethical Committee was obtained before conducting the study. Study conducted at *Streerog – Prasutitantra* Dept. of M.A. Podar Ayurvedic Hospital, Mumbai on 60 diagnosed *granthija shukradushti* (asthenozoospermic) cases. Patients enrolled on following inclusion & exclusion criteria.

2.3 Inclusion Criteria—Diagnosed male patients of *granthija shukradushti* (asthenozoospermic) with the help of semen analysis were selected irrespective of caste, religion, economical status, Age- above 20yrs and below 50yrs.

2.4 Exclusion Criteria—Azoospermia, Patients with any major systemic illness, below 20yrs and above 50yrs, unmarried patient, Patients with any surgical illness related to inguinocrural region, patients with STD's and diseases related to genitourinary tract.

2.5 Investigations—Investigations done were Haemogram, Blood group, BSL – F – PP, VDRL, HIV, HBsAg, LFT, RFT, Urine ®, Semen analysis

2.6 groups:- 60 patients of *granthija shukradushti* from outdoor department were selected for clinical trials and divided into two groups randomly by lottery method.

Study Group A- 30 patients-treated with *Palashabhasmaashmabheda siddha ghruta* 20ml/day^[22] orally *Apane*^[23] followed by *koshna dugdha*, continually for 3 months.

Group B- 30 patients- treated with *Palashabhasmaashmabheda siddha ghruta* 20ml/day^[24] *Uttarbasti* (transurethral) for 10 days in each month for 3 months.

2.7 duration: - Treatment started on the diagnosis of *Granthija Shukradushti* and continued up to 3 months.

2.8 Assessment Parameters

Detail history & examination done with case record form prepared for the study including through clinical and genital examination. Informed consent form was prepared & assigned before starting of the treatment.

1. Sperm count, motility, pH
2. Liquefaction time, volume, sperm viability and morphology for diagnosis and after every month of treatment were noted. Patient assessed every month & records kept.
- 2.

III. Results

3.1 Demographic Results Found During Study:-

Incidence of asthenozoospermia was more in 30-35 yrs age group i.e. 51.67%. Incidence of asthenozoospermia found was mainly seen in patients having mixed diet about 96.67% cases belongs to this group. Out of 60 patients observed, maximum 53.33% patients were heavy workers, with 81.67% had irregular bowel habit. Incidence of asthenozoospermia was found more in *vata-pitta prakruti* with 63.33%. 35% patient had no untoward addiction. The maximum no. of patients i.e. 73.33% belonged to primary infertility.

3.2 Clinical Assessment Of Patients-

By applying Unpaired 't' test comparison of both groups shows very significant result with P value is <0.0001. (Table no. 3,4) By applying Paired 't' test, After treatment the rise in volume, count are highly significant in both the groups. After treatment the rise in active sperms in ejaculation level is extremely

significant in both the groups but there were not significant role on pH and total abnormal sperm count in both groups. No side effects were found during study.(Table no.1, 2)

IV. Discussion

In *Ayurveda, Dharma, Artha, Kama* and *moksha* are called as *chaturvidha Purusharthas*^[25] According to different references, since old days the emphasis on getting a child is considered as highest duty^[26]. The person who is infertile is said to be *nindya* according to *Aacharya Charaka*^[27] The person without a child is compared to be a tree without branches.^[28] Infertility affects the psychological harmony, sexual life and social function of the couple. The incidence of male infertility may vary from place to place, nation to nation but magnitude of the problems remains the same. Even with the advent of modern techniques, the success rate in conception is very low, the cost of treatment is also not affordable by all. The agony, sorrow of infertile patients remains almost the same even today.

As male infertility has direct relationship with impairment in the semen i.e. *Shukradushti*. Eight types of *shukradushti* are mentioned in our classics.^[9] Out of which *granthija shukradushti* is due to vitiation of *Vata-kapha dosha*^[12].

Due to vitiation of *kapha*, predominantly *picchil* and *ghan guna, styanata* gets elevated along with this, vitiated *vata dosha, ruksha guna* predominant alter *shukra* in *granthi swaroop* which may lead to *sangatmak srotodushti* occurs and ultimately pathogenesis of *shukradushti* like impediment of *gati* i.e. impaired sperm motility takes place.

Samprapti Ghataka of granthij shukra

Dosha-Vata (vyana, apana), Kapha

Dhatu- Shukra

Strotas –Shukravaha

Srotodushti- Sanga, Siragranthi

Udbhavasthan-Sarvasharira

Vyaktisthana-Shefa

Vyadhiswabhaba- chirakaree

From all these references, *granthija shukradushti* can be correlate with asthenozoospermia. Sperm motility is activated by increase in pH, calcium ion and cAMP, nutrients mainly zinc and vitamin B^[29]. So, these factors play important role in the treatment of asthenozoospermia. Browsing through ancient literature, *Palashbhasma-ashma siddha ghrut*, holiastic preparation improves sperm motility^[30]. Mechanism of action

1. Palashabhasma- *Palash* is *katu, tikta, kashaya rasatmaka, ushna veerya, katu vipaki* leads to *vata-kaphahara* effect. It's *vrushya* and *rasayana* in nature^[17]. *Bhasma* also has *bhedana* properties. Thus, it is useful in *Granthija shukra*. The seeds of this plant appear to have antifertility effects, thought to be due to the butin content; the other parts of the plant are not implicated in antifertility actions.^[31] Flowers are aphrodisiac, and diuretic. It contains proteolytic and lipolytic enzymes which reduces viscosity^[32]. Alkaline nature of *bhasma* decreases pH which hampers the motility.

2. Pashanabheda- Due to *ashmabhedana prabhava*, it dissolves *granthi swaroopa* of *granthija shukra*. By its properties, it is *vata-kapha shamak*.^[18] Roots of *Berginia* contain glucose, essential amino acids like leucine, tryptophan, methionine etc which provide energy and nutrition to sperms for their viability & motility. Also it has antiprotozoal, antipermlithic, anti-inflammatory, aphrodisiac action.^[33]

3. Goghruta- All the properties of *ghruta* are *vatahara*. It has *sanskarasyanuvartana* property, it is when medicated with these *kaphahara* drugs, acts as same. Qualities of *ghruta* are similar to *Shukra dhatu*^[19], so it acts as *shukragamitva*.^[34] Ghee contains Vitamin E (antisterility), beta carotene and potent antioxidant property.^[35] So *Ghrut* when medicated with *palashabhasma* and *ashmabheda* possesses *vata-kaphahara* properties. Additionally its own *rasayana, vrushya* etc properties.

4. Routes Of Administration-

A) *Pana* (oral route)- Drug when taken orally, get digested with *dhatuposhan nyaya* and *shukradhatu* formed^[36] According to *Ayurveda*, it is present all over body^[37] and comes out through penis at the time of ejaculation^[38]. So, proper synthesis valued.

B) *Uttarbasti-Apana* *vayu* has control over *shukra dhatu*.^[39] It is mentioned as treatment of *shukradushti* which acts on *apana* *vayu*. By this route drug reaches to urinary bladder and due to local absorption directly affects semen quality. As *shukradhara kala* is occupying the complete body^[37], when drug is given orally it gives results in *shukradushti* more than local effect of *uttarbasti*.

V. Conclusion

Palashabhasma-ashmabheda siddha ghruta has significant results on asthenozoospermia. It is also useful to increase the sperm count, volume, viability, no. of active sperm. The route *Pana* gives better results than *uttarbasti*.

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Table no.1 Physical And Chemical Analysis

s.no	Criteria	BT	AT	%
1.	pH			
	Group A	223.7	225.5	0.8046
	Group B	225	225	0
2.	Liquefaction time			
	Group A	905	700	22.65
	Group B	530	689	30
3.	Volume			
	Group A	87.3	91	4.23
	Group B	74.1	82	10.66
4.	Sperm count			
	Group A	873.8	995	13.87
	Group B	785.58	855.1	8.84
5	Viability			
	Group A	1066	1440	35.08
	Group B	1141	1353	18.58
6.	Total no. of abnormal sperms			
	Group A	1464	1300	11.20
	Group B	1509	1428	-5.36
7.	Active sperms in ejaculate			
	Group A	622.53	773	24.17
	Group B	643.5	742.1	15.32

Table no.2 Microscopic analysis

Motility Grade	After ½ hr			After 2 hrs		
	BT	AT	%	BT	AT	%
A						
Group A	260	395	51.92	116	194	67.24
Group B	300	362	20.66	132	182	37.87
B						
Group A	647	835	29.05	397	448	12.84
Group B	621	619	0.32	400	345	13.75
A+B						
Group A	917	1196	30.42	507	625	23.27
Group B	912	981	7.56	515	515	0

Statistical assessment-

Table no.3 Physical And Chemical Analysis

Characters	Group	Paired 't' test			Unpaired 't' test		
		T	P	Result	t	P	result
Ph	A	1.135	0.266	Not significant	1.135	< 0.001	Very significant
	B	-	-	-			
Liquefaction time	A	1.1352	0.187	Not significant	0.282	< 0.001	Very significant
	B	2.628	< 0.0001	Extremely significant			
Volume	A	0.6	< 0.0001	Extremely significant	0.54	0.0079	significant
	B	1.669	< 0.0001	Extremely significant			
Sperm count	A	1.381	< 0.0001	Extremely significant	0.463	0.032	significant
	B	1.008	< 0.0001	Extremely significant			
Viability	A	3.62	< 0.0001	Extremely significant	1.23	0.112	Not significant
	B	2.594	< 0.0001	Extremely significant			
Total no. of abnormal sperms	A	1.854	0.074	Not significant	2.055	0.022	significant
	B	1.014	0.0319	Significant			
Active sperms in ejaculate	A	1.464	< 0.0001	Extremely significant	0.43	0.332	Not significant
	B	1.561	< 0.0001	Extremely significant			

Table no.4 Microscopic analysis

Character		Group	Paired 't' test			Unpaired 't' test		
motility	after		T	P	result	t	P	result
Grade A	½ hr	A	3.113	0.004	Very significant	1.515	<0.0001	Extremely significant
		B	2.954	0.0062				
	2 hrs	A	3.587	0.0012	Very significant	0.88	0.189	Not significant
		B	2.18	0.0049				
Grade B	½ hr	A	4.201	<0.0001	Extremely significant	4.106	<0.0001	Extremely significant
		B	0.17	<0.0001				
	2 hrs	A	1.124	0.0065	Very significant	1.943	0.028	significant
		B	1.817	<0.0001				
Grade A+B	½ hr	A	1.124	0.0065	very significant	2.905	0.003	Very significant
		B	2.866	<0.0001	Extremely significant			
	2 hrs	A	2.017	0.0038	Very significant	1.642	0.049	significant
		B	0	<0.0001	Extremely significant			