

EFFICACY OF SHRUNGATAKA BEEJA CHURNA IN KSHINASHUKRA

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ABSTRACT

Infertility is defined as the inability to conceive after at least 1 year of unprotected intercourse. It affects about 8-12% of all married couples.^[1] Male infertility refers to male's inability to result pregnancy in a fertile female. Male infertility is seen as alteration in sperm concentration and/or motility and/or morphology in sperm analysis.^[2] Thus the male infertility can be defined as an inability to induce conception due to defect in spermatogenic function. Out of 8 types of semen disorders (*shukradushti*) mentioned in *ayurveda kshinashukra* is one in which occurs due to involvement of *vata* and *pitta dosha* and characterized by decrease in quality and quantity of *shukra*. *Kshinashukra* can also be correlated with oligoasthenozoospermia. Oligoasthenozoospermia is treated with Tab Oligocare which increases quality and quantity of sperm. In the management of *kshinashukra*, *shrungataka beeja churna* with *kshira* is mentioned by *aacharya vagbhata* in *AshtangHrudaya*.^[3] *Shrungataka* possesses *madhura*, *kshaya rasa*, *guru*, *vrushya*, *sheeta* properties which are also properties of *shukradhatu*. *Shrungataka beeja churna* can be choice of drug in *kshinashukra*.

KEYWORDS: *kshinashukra*, *Shrungataka beeja churna*, Oligoasthenozoospermia, *Shukradhatu*.

INTRODUCTION

ध्रुवंचतुर्णासान्निध्यादगर्भःस्याद्विधिपूर्वकम् ।

ऋतुक्षेत्राम्बुबीजानांसामग्र्यादङ्कुरोयथा ॥⁵

अच्छायश्चैकशाखश्चनिष्फलश्चयथादुमः ॥⁶

Ritu (Reproductive age and ovulation), *kshetra* (female reproductive system), *ambu* (nutritional factors), *beeja* (sperm and ovum) are the essential causes for the formation of *garbha*. Among these male *beeja* (sperm) plays an important role in conception. Any vitiation in these may lead to male infertility. *Aacharya charaka* has compared the man who is unable to create progeny as shadowless, single branched, foul smelling tree, devoid of fruits that has no purpose or plays no role in world. The aim of a person is that to procreate his legacy through his progenies. Infertility makes the man incapable for this. As per the *ayurvedic* classics the function of *shukra* is reproduction.

सप्तधातुनां चरमो धातुः शुक्रः ।⁷

Aacharya charaka has mentioned *shukra* is the seventh *dhatu* and also described as one of the '*Pranayatana*'.^[8] *Charaka* has also assumed that *shukra* spreads in whole body and is consider of having high quality amongst all

dhatu's in the body. *Shukra* is considered as essence of all *dhatu's*, as *garbha* which is produced from *shukra* is having all *dhatu's* within it. At the time of formation of *dhatu* from *purvadhātu*, the *dhatwagni* separates its *prasada* and *malbhaga*, hence till *shukra* is formed all *malbhaga* is removed.

There are 8 types of semen disorder (*shukradushti*) according to *ayurvedic classics*, among one of them is *kshinashukra*. According to *Sushruta* and *Vagbhata* the *vata* and *pitta doshas* are involved in the causation of *kshinashukra*. *Sarvadehika lakshanas* of *kshinashukra* are *Daurbalya*, *shrama*, *aashayshosha*, *angamard*, *pandutwa*, *sadan*, *bhrama*.^[9] *Pratyatmalakshana* of *kshinashukra* are *medhravedana*, *virshanvedana*, *maithunashkati*, *chiratpreseka*, *saraktashukra darshana* or *alparaktashukra darshana*, *medhradhumayana*, *klaibya*, *shukra avisarga*.^[10]

Oligoasthenozoospermia is abnormal spermatogenesis which is treated with Tab. Oligocare by increasing quality and quantity of sperm.

Vata and *pitta doshas* are main causative factors for *kshinashukra*, as mentioned earlier and *Aacharya Vagbhata* has described *shrungataka beeja churna* in the management of *kshinashukra*. *Shrungataka beeja churna* having properties *vata* and *pitta shamana* by its *madhura rasa* and *sheeta virya* as well as *guru*, *vrishya* properties. All properties of *Kshira* are also similar to properties of

shukra, thus *Shrungataka beeja churna* with *kshira* improves sperm motility and/or concentration and/or morphology in sperm analysis.

The used drug is easily available and administration of drug is by oral route which is more convenient to patient hence feasible. Reference of the study is from *Ashtanga Hrudaya Sharira Sthana*. This kind of study is not done previously. Study is safe.

Aim- "To study the efficacy of *Shrungataka beeja churna* in the management of *Kshinashukra* (oligoasthenozoospermia)."

Inclusion Criteria

1. The patients with initial sperm Analysis showing oligoasthenozoospermia aged between 25 to 50 years.
2. The semen analysis showing total sperm count of 15million/ml and total motility RP +NP <40% according to WHO criteria.

Exclusion Criteria

1. Patients which are known case of aspermia and azoospermia will be excluded.
2. Patients having known history of systemic disorders like uncontrolled DM, HIV & congenital anomalies of sexual organs will be excluded.

3. Those patients require surgical interventions regarding varicocele will be excluded.
4. Patients with any seriously illness and severe anemia (Hb<7gm/dl) will be excluded.

Withdrawal Criteria

1. Patient willing to discontinue study.
2. Patient absent for 45 days i. e. first follow up.
3. If patient develops any allergic condition.

Assessment criteria

1. Physical Examination of semen

Volume, Consistency, Liquification

2. Effect on Total Sperm Count on Semen Analysis

- a) Total spermatozoa count/ml.
- b) Total spermatozoa count/ejaculate.

3. Effect on Motility of Sperms on Semen Analysis

Rapidly progressive, Non-progressive, Immotile

4. Abnormal Forms of Sperm on semen analysis.

Head defect, body defect, Tail defect.

MATERIAL AND METHODS

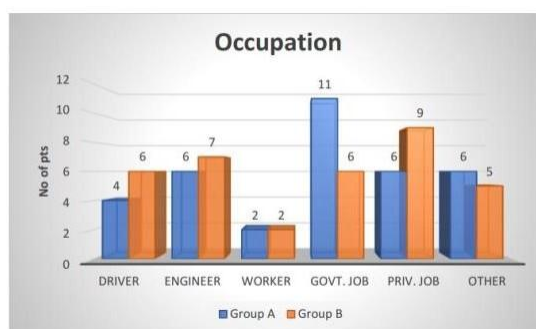
1. Literature available in all *ayurvedic samhitas* and modern textbooks.
2. Study centre – *Ashtang Ayurved Hospital Pune 30*
3. No. of patients -35 in each group.
4. Type of study-Open labelled randomised prospective study.

Group	No. of subjects	Planning	Duration
Group A	35	<i>Shrungataka Beeja Churna</i> 10gm/day with milk 100 ml <i>Pragbhakta</i>	90 days
Group B	35	Tab.Oligocare10d	90 days

OBSERVATION AND RESULT

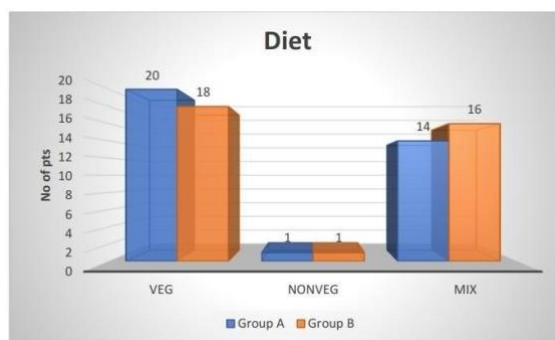
1. Occupation

Sr. No.	No of Patients			Total	Percentage		
	Occupation	Group A	Group B		Group A	Group B	Total
1	Driver	4	6	10	11.4	17.1	14.3
2	Engineer	6	7	13	17.1	20	18.6
3	Worker	2	2	4	5.71	5.71	5.71
4	Govt.Job	11	6	17	31.4	17.1	24.3
5	Priv.Job	6	9	15	17.1	25.7	21.4
6	Other	6	5	11	17.1	14.3	15.7
7	Total	35	35	70	100	100	100



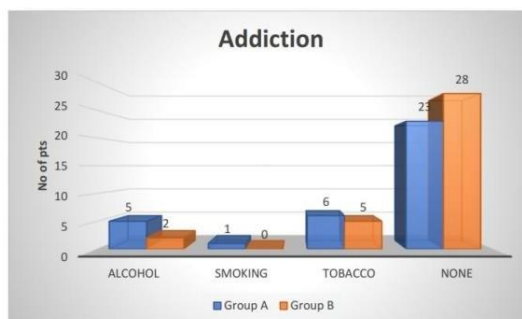
2. Diet

Sr. No.	No of Patients			Total	Percentage		Total
	Diet	Group A	Group B		Group A	Group B	
1	Veg	20	18	38	57.1	51.4	54.3
2	Nonveg	1	1	2	2.86	2.86	2.86
	Mix	14	16	30	40	45.7	42.9
3	Total	35	35	70	100	100	100



3. Addiction

Sr. No.	No of Patients			Total	Percentage		
	Addiction	Group A	Group B		Group A	Group B	Total
1	Alcohol	5	2	7	14.3	5.71	10
2	Smoking	1	0	1	2.86	0	1.43
3	Tobacco	6	5	11	17.1	14.3	15.7
4	None	23	28	51	65.7	80	72.9
5	Total	35	35	70	100	100	100



(A) Changes in Physical examination in Group A and Group B

1. Semen Volume

Sr. No.	Group	Semen Volume(ml)		
		Mean BT	Mean AT	Mean Diff
1	Group A	2.129	2.386	0.257
2	Group B	2.071	2.129	0.057



2. Liquification Time

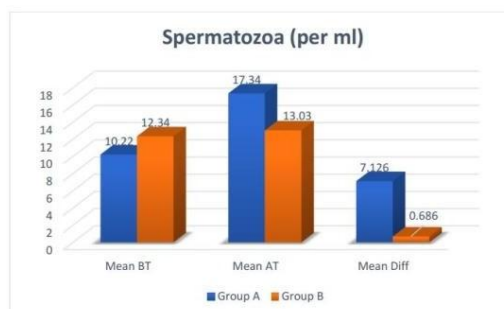
Sr. No.	Group	Liq. Time(min)		
		Mean BT	Mean AT	Mean Diff
1	Group A	27.91	29.57	1.657
2	Group B	29.14	29	-0.14



(B) Changes in sperm count in group A and B

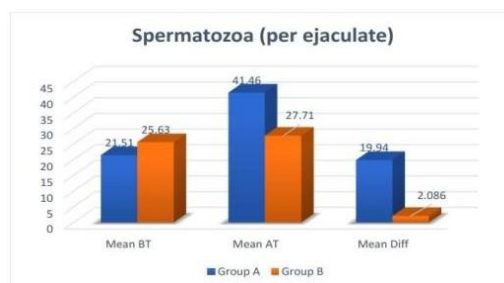
1. Total Spermatozoa Count (per ml)

Sr. No.	Group	Spermatozoa count(per ml)		
		Mean BT	Mean AT	Mean Diff
1	Group A	10.22	17.34	7.126
2	Group B	12.34	13.03	0.686



2. Total sperm count (per ejaculate)

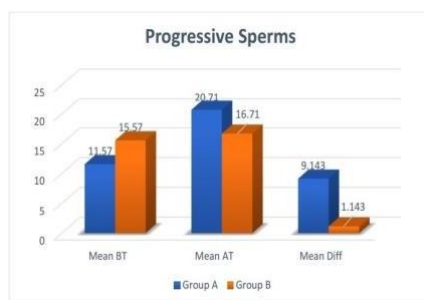
Sr. No.	Group	Spermatozoa count(per ej.)		
		Mean BT	Mean AT	Mean Diff
1	Group A	21.51	41.46	19.94
2	Group B	25.63	27.71	2.086



(C) Changes in motility in group A and B

1. Progressive Sperms

Sr. No.	Group	Progressive Sperms		
		Mean BT	Mean AT	Mean Diff
1	Group A	11.57	20.71	9.143
2	Group B	15.57	16.71	1.143



3. Total Motility

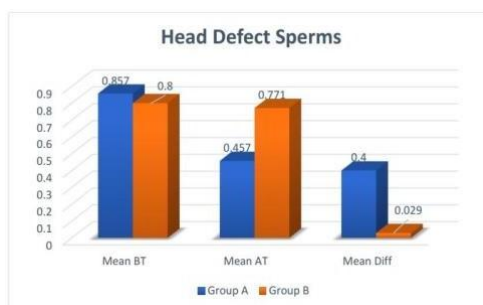
Sr. No.	Group	Total Motility		
		Mean BT	Mean AT	Mean Diff
1	Group A	22.86	41.57	18.71
2	Group B	28.14	30.29	2.143



Changes in abnormal sperms in group A and B

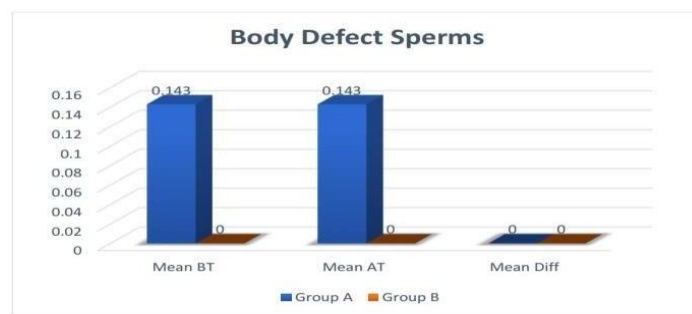
1. Head defect sperm

Sr. No.	Group	Head defect sperms		
		Mean BT	Mean AT	Mean Diff
1	Group A	0.857	0.457	0.400
2	Group B	0.800	0.771	0.029



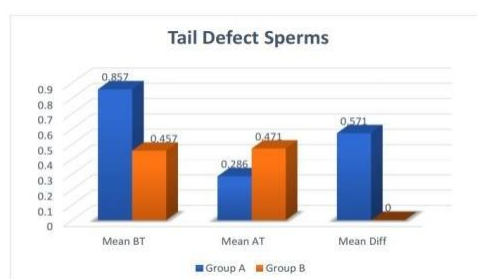
2. Body defect sperm

Sr. No.	Group	Body defect sperms		
		Mean BT	Mean AT	Mean Diff
1	Group A	0.143	0.143	0
2	Group B	0	0	0



3. Tail defect sperm

Sr. No.	Group	Tail defect sperms		
		MeanBT	MeanAT	MeanDiff
1	Group A	0.857	0.286	0.571
2	Group B	0.457	0.471	0



(E) Changes in semen consistency in group A and B

Sr. No.	Consistency	No of pts (Group A)		No of pts (Group B)	
		BT	AT	BT	AT
1	Normal	29	35	31	32
2	Abnormal	6	0	4	3

**Mode of action (Shrungataka Beeja Churna)****1. Action based on Rasa, Guna, Veerya, and Vipaka of Shrungataka Beeja churna.**

- **Rasa:** - The Shrungataka Beeja Churna having Madhura Rasa, so the resultant product also gets Madhura Rasa. According to Sushruta and Charaka, the Madhura Rasa is having the shukravardhaka properties, hence it helps in Shukravridhi.
- **Guna:** - Shrungataka Beeja Churna having Guru Guna, and according to Ashtanga Sangraha Shukra is also having Guru Guna. By Samanya Visheshha Siddhanta it helps for Shukravridhi.
- **Veerya:** Shrungataka is having sheeta Veerya. This sheeta Veerya may be triggering the production of

Shukra and it may be protecting from Pitta thereby Shukra Vriddhi occurs.

- **Vipaka:** Madhura Vipaka acts as Shukra Vardhaka.
- 2. Action based on Karma and Doshagnata:-** According to Bhavaprakasha, Shrungataka having Vrishya, Vataghna and Pittaghna properties. By all these properties of Shrungataka, it might have helped for ShukraVriddhi.
- **Action on Dushyas:** The Dushyas which are involved in the production of KshinaShukra are mainly Rasa, Majja and Shukra. Madhura Rasa, Sheeta Veerya and Madhura Vipaka of Shrungataka is going to rectify the vitiated Dushyas, especially

Rasa, Majja and *Shukra* leading to normalcy. *Acharya Charaka's* explanation "*Swayoni Vardhana Aushadha*" supports this concept. *Vata* and *Pitta* are the *Doshas* which are involved in the production of *KshinaShukra*. The *Shrungataka Beeja Churna* rules over the *Doshas*. i.e. due to *Madhura Rasa*, *Madhura Vipaka* and *Guru Guna* it pacifies *Vata*(i.e. *vatanulomana*) and due to *Sheeta Veerya* it pacifies the *Pitta*. Thereby due to *samprativighatana* to increase *Shukra*., the trial drug *Shrungataka Beeja Churna* is going to increase *shukra*. Mode of action of the *Anupana* i.e. *Godugdha* based on its *Rasa*, *Guna*, *Vipaka* and *Veerya*.

- **Action on Srotas:** -*Rasa, Majja* and *Shukravaha Srotas* are affected in *KshinaShukra*. The rectification of *Srotodushti* taken by *Shrungataka Beeja Churna* got by excellent *srotoshuddhikara* property. Thereby it acts over the *Shukravaha Srotas* and it helps in the proper functioning of the *Srotas* by overcoming the *Sanga*.

3. Action of *Shrungataka Beeja Churna* on the basis of chemical composition

- **Carbohydrates:** - *Shrungataka* contains carbohydrates, proteins and minerals. The researchers identified an N-glycan a specific carbohydrate present in this drug might have helped in the study for increasing the sperm count.^[11]
- **Proteins:** - Proteins are needed for the activation as well as the structural formation of sperm during spermatogenesis. This protein may be further in the motility of the sperm. So in this clinical trial drug might be improved the motility as well as it may

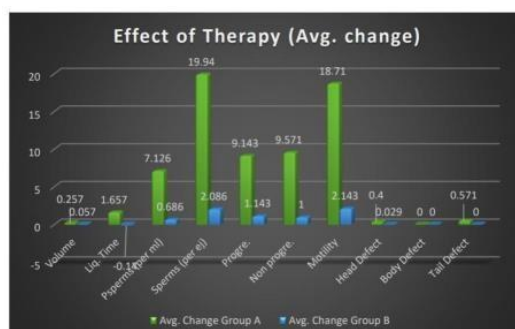
helped in the formation of the normal structured sperms.^[12]

- Both nuclear and cytoplasmic proteins are affected oligoasthenozoospermia.^[13]
- **Minerals:** - Minerals 1.1%--Calcium, Phosphorus, Iron, Manganese, Magnesium, Sodium, Potassium, Iodine.
- **Role of calcium in spermatogenesis:** - Calcium regulates many intracellular events such as growth and differentiation during different stages of gamete development. It is present in the larger area of spermatids and spermatozoa which probably reflects changes in its physiological function and homeostasis during the process of male gamete production in spermatogenesis.^[14]
- **Role of phosphorus:** - Phosphorus plays important role with activated vitamin D in spermatogenesis. Deficiency of phosphorus causes male infertility.^[15]
- **Role of manganese:** - Manganese plays minor role in spermatogenesis.^[16]
- **Role of Magnesium:** - Magnesium significantly increases the activities of androgenic enzymes viz. 3-beta-hydroxysteroid dehydrogenase and 17-beta hydroxysteroid dehydrogenase with concomitant increase in serum testosterone level, followed by progressive development in cytoarchitecture of genital organs.^[17]
- **Effect of Zn on Spermatogenesis:**-A high concentration of Zn is detectable in testis, and that a Zn deficiency inhibits spermatogenesis and causes sperm abnormalities. Hence the zinc present in *Shrungataka* may helped for spermatogenesis.

Effect of therapy

According to Avg. Change in parameters

Sr. No.	Parameters	Avg.Change	
		Group A	Group B
1	Semen Volume	0.257	0.057
2	Liquification Time	1.657	-0.14
3	Sperms(perml)	7.126	0.686
4	Sperms(per ej.)	19.94	2.086
5	Progressive	9.143	1.143
6	Non-progressive	9.571	1
7	Total Motility	18.71	2.143
8	Head Defect	0.4	0.029
9	Body Defect	0	0
10	Tail Defect	0.571	0



DISCUSSION

(A) On general observations

1. **Occupation**-Patient of almost each and every occupation were found having *kshinshukra* (oligoasthenozoospermia). None of the occupation was found dominantly more than other. Sedentary life style and sedentary work were the common key points in the occupation causing *kshinshukra*.
2. **Diet-Kshinashukra** (Oligoasthenozoospermia) can occur in vegetarian as well as non-vegetarian people.
3. **Addiction**-It is well clear that non addicted people may also suffer from *Kshinashukra* (oligoasthenozoospermia) though addiction is one of the major causes of it.

(B) On changes in sperm parameters

1. **Semen volume(ml)** – When compared average increase in Semen volume in Trial Group (0.257ml) was found more than in Control Group (0.057ml). It suggests that *Shrungataka Beeja Churna* is effective than Tab Oligocare 1 to increase Semen volume in *Kshinashukra* (oligoasthenozoospermia).
2. **Liquification time(min)**-When compared average increase in Liquification time in Trial Group (1.66 min.) was found more than in Control Group (-0.14 min). It suggests that *Shrungataka Beeja Churna* is effective than Tab Oligocare 1 to increase Liquification time in *Kshinashukra* (oligoasthenozoospermia).
3. **Spermatozoa count(per ml)**-When compared average increase in Spermatozoa count (per ml) in Trial Group (7.126) was found more than in Control Group (0.686). It suggests that *Shrungataka Beeja Churna* is effective than Tab Oligocare 1 to increase Spermatozoa count (per ml) in *Kshinashukra* (oligoasthenozoospermia).
- 4 **Spermatozoa count(per ejaculation)**-When compared average increase in Spermatozoa count (per ejaculate) in Trial Group (19.94) was found more than in Control Group (2.086). It suggests that *Shrungataka Beeja Churna* is effective than Tab Oligocare 1 to increase Spermatozoa count (per ejaculate) in *Kshinashukra* (oligoasthenozoospermia).
5. **Progressive sperms**-When compared average increase in Progressive Sperms in Trial Group (9.143) was found more than in Control Group (1.143). It suggests that *Shrungataka Beeja Churna* is effective than Tab Oligocare 1 to increase Progressive Sperms in *Kshinashukra* (oligoasthenozoospermia).
6. **Nonprogressive sperms**- When compared average increase in Non-progressive Sperms in Trial Group (9.571) was found more than in Control Group (1.000). It suggests that *Shrungataka Beeja Churna* is effective than Tab Oligocare 1 to increase Non-progressive Sperms in *Kshinashukra* (oligoasthenozoospermia).
7. **Total motility**- When compared average increase in Total motility in Trial Group(18.71) was found more than in Control Group (2.143). It suggests that

Shrungataka Beeja Churna is effective than Tab Oligocare 1 to increase Total motility in *Kshinashukra* (oligoasthenozoospermia).

8. Abnormal Sperms

Group A (Average change)

- Head defect: 0.400
- Body defect: 0.000
- Tail defect: 0.571

Group B (Average change)

- Head defect: 0.029
- Body defect: 0.000
- Tail defect: 0.000

Based on above observed data it is clear that both trial drug and control drug are not effective to change abnormality of sperms. Interpretation regarding comparison of effect of both drugs is not possible here.

9. Semen consistency

- In Group A, before treatment 29 patients were with normal semen consistency and 6 were with abnormal semen consistency. After treatment all 35 patients with normal semen consistency.
- In Group B, before treatment 31 patients were with normal semen consistency and 4 were with abnormal semen consistency. After treatment 32 patients were with normal semen consistency and 3 were with abnormal semen consistency.
- It suggests *Shrungataka Beeja Churna* is slightly better effective than Tab Oligocare 1 to improve Semen consistency in *Kshinashukra* (oligoasthenozoospermia).

CONCLUSION

- *Shrungataka Beeja Churna* is significantly effective in *Kshinashukra* (oligoasthenozoospermia) to increase parameters Semen volume, Liquification time, Spermatozoa (per ml), Spermatozoa (per ejaculate), Progressive sperms, Non- progressive sperms and Total motility.
- *Shrungataka Beeja Churna* is not significantly effective on the *Kshinashukra* (oligoasthenozoospermia) to improve Semen consistency.
- Definite interpretation in case of abnormal sperms on basis of statistical analysis cannot be made as data was limited.

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