



## “MANAGEMENT OF KSHEENA SHUKRA (ASTHENOZOOSPERMIA) - A CASE REPORT”

### Ayurveda

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### ABSTRACT

Asthenozoospermia is a condition where the patients presented with lower active motility of total sperm concentration. Oligozoospermia and Asthenozoospermia have more contribution for the male infertility among types of defective semen. In general male infertility factors are suspected of contributing to infertility in almost 40% of infertile couples. In the present case a male aged about 45 years has visited Taranath Government Ayurvedic Medical College and Hospital Bellary, Karnataka. With chief complaints of reduced sexual desire, reduced sexual power, Angadaurbalya, fatigue even with small work and watery semen and married life was 24years so at the 16 years of married life he got one male child which is healthy but after that couples are frequently trying for another child but getting. On the basis of patient complaints and semen analysis and androgen parameters diagnosed as Asthenozoospermia having androgen deficiency and Ksheena Shukra. The patient was treated with administration Shukrashodhaka Shukrala Kustha Choorna (*Saussurea Lappa C.B. Clarke*) followed by Virechana for 60 days. The Vajikaraka effect is well appreciated by administration of Shukrala Yoga after proper Kaya Shodhana. This case gives information regarding the effect and Success of Ayurvedic treatment in case of Asthenozoospermia.

### KEYWORDS

Ksheena Shukra, Asthenozoospermia, Kustha Choorna

#### 1. INTRODUCTION:

Asthenozoospermia is a condition where the patients present with lower motility of sperm which is unable to produce progeny during conception. Motility is considered to be a fundamental characteristic of sperm and provides a reliable diagnostic and prognostic measure for male infertility. To complete fertilization, the sperm must travel from the vagina to the fallopian tubes, penetrate the cumulus oophorus surrounding the ovum, and fertilize the egg. All this relies on the capability of motility<sup>1</sup>. The pathogenesis of asthenozoospermia appears to be complicated and multifactorial, and it can be affected by both genetic and environmental factors<sup>2</sup>.

*Ayurveda* explains *ashta shukra dushti* as conditions in the *Shukra dhatu* which have the potential of causing infertility. *Ksheena Shukra* is one of the varieties of *shukra dushti*, where in there will be *pradooshana* of *Shukra* both quantitatively and qualitatively which can cause infertility<sup>3</sup>. The essential factors of conception are *Ritu* (reproductive age and ovulation period), *Kshetra* (female reproductive tract), *Ambu* (nutritional factors) and *Beeja* (sperm and ovum) Any malfunction of these factors may lead to infertility<sup>4</sup>. *Beeja* is well understood as the one which has a capacity to produce or induce growth or generation. *Beeja* may be composed of both male and female gametes i.e., sperm and ovum respectively and carry the complete set of chromosomal activity<sup>5</sup>. *Shukra* which is having the lakshanas as *Bahula* (volume should be in specified quantity), *Madhura* (sweetness), *Snigdham* (Unctious) related to hypo and hyper viscous semen, *Avisram* (not bad smelling) indicates the semen should not be affected by any microbials which indicates payospermia, payobacterospermia etc, conditions related to inflammatory, *Shuklam* (semen having normal colour which is grey white). That *shukra* is *Phalavat* and able to produce good progeny<sup>6</sup>. The loss of these qualities due to *Vata* and *Pitta* dosha leads to *Ksheena shukra* i.e. “*Prajotpadane asamartha Bhavathi*” according to WHO the normal a couple considered not getting pregnant even after one year or more after having unprotected sexual intercourse and 40% of the male sexual dysfunction is due to like Oligozoospermia, Asthenozoospermia or Azoospermia etc. for successful conception as per the WHO Seminal parameters the sperm count should be >15mil/ml and active motility should be >40% of total sperm concentration<sup>7</sup>. In *ayurveda* successful treatment can be adapted and it is very cost effective and patient can afford the treatment with his daily routine work. Here a success story of patient suffering from Asthenozoospermia after getting one male child but not able for the second time pregnancy and it is treated with *Virechanottara Kustha Choorna* (*Sassaurea Lappa C. B. Clarke*) *Shukrala Yoga*.

#### 1.1. Patient information

A male Patient aged about 29 years has visited Kayachikitsa OP, Taranath Government Ayurvedic Medical College and Hospital, Bellary on 8 Jan 2021 complaining of reduced sexual desire, reduced sexual power, Angadaurbalya, Fatigue even with small work, watery semen. Patient reported that he is involving in sexual intercourse 2 to 3 times per week where he feels reduced erection but observed that one sexual act per week seems to be comfortable. In 16 years married life is bleeds with one male child after eight years of marriage. The couple are trying for second offspring not yet conceived hence consulted Dr.Veerendra Kumar Shree Daruka Clinic bellary. After the consultation the patient was referred to Taranath Government Ayurvedic Medical College and Hospital for Vajikarana treatment.

**Personal History:** Patient has reported Job stress, Chinta and Shoka.

**Sexual history:** Married at the age of 22 years, reached secondary sexual characters at 14 years of age masturbation history was not found, partner had good reaction for orgasm but the state of mind during sexual act was un pleasant.

**Health status of partner:** Patient spouse attained menarche at 15 years of age with regular menstrual period and general health of the spouse was good.

#### 2. CLINICAL FINDINGS

##### 2.1. General examination

Patient was moderate built with BMI 24 kg/m<sup>2</sup>, Blood pressure 130/80 mmhg pulse rate 70 beats /minute, Respiratory rate – 17 cycles / minute

##### 2.2. Systemic examination

Respiratory system – normal bronco vesicular sounds heard with bilateral normal air flow Cardiovascular system – S1 and S2 sounds heard with no murmur

Central Nervous System – patient was well oriented to time place and person.

Genito-urinary system examination

Scrotum – had normal pigmented, Ruge's present with No swelling No external scar mark, no cyst and any sebaceous cyst.

Testes – had normal size with soft palpable non- tender and normal position.

Epididymis – palpable soft with mild tender at left side and normal in right side.

Spermatogenic cord felt worm like soft with non tender.

Vas-differences was palpable and non-tender

### 2.3. Astha Vidha Pareeksha

Nadi – Vata pittaja; Mootra – normal flow with 2 to 3 times frequency per day

Jivha – liptata with Amayukta ; Shabdha – mandaswara with sound clear (prakruta)

Sparsha – khara katin sthira sparsha; Druka – prakruta; Akrti – Madhyama

### 2.4. Dashavidha Pareeksha

Prakriti – Vata Kaphaja; Vikrti – Rasavaha: Klaihya, Kalithya and Palithya; Majja vaha Srotas: Mrududeha; Shukrahava: Ksheena Shukra; Satva – Madhyama; Sara – Madhyama; Samhanana – Madhyama; Satmya – Pravara; Ahara Shakti – Abyavara Shakti: Pravara; Jarana Shakti – Madhyama; Pramana – Madhyama; Vayas – Madhyama

Lab investigations: The details are shown in Table no. 1 and 2

### 2.5. NIDANAPANCHAKA

**Nidana:** Ahara alpa katu sevana for long period with rooksha ahara sevana and Alpa matra Chinta Shoka occasionally with disturbed mind thinking about subject for long time Occasionally Diwaswapna with Bharavahana Vishama Chestata.

Sometimes his wife behaves like Naarianam arasajnata.

**Samprapti:** Regular Nidana sevana after one child leads to Vataprakopa, agnimandya (Jataragni, Dhatwagni) improper formation of Rasadi Dhatu than collection of ama in Basti leads to Uttarottara Dhatu Kshaya presented with above mentioned present illness than Ksheena Shukra (Asthenozoospermia)

**Poorvarupa/Roopa:** Low sperm motility; Reduced sexual desire; Reduced sexual power; Angadaurbalya; Fatigue with smaller work; Loss of erection with regular coitus but improves with gap between the sexual act

**Samprapti Ghatakas :** Dosh – Vata Pittaja; Dushya – Rasa Shukra; Srotas – Rasavaha and Shukravaha; Srotosusthi prakara – Dhatukshaya; Udbhava sthana – Amapakwashaya; Vyakta sthana – Basti; Adisthana – Bastigata; Rogamarga – Madhyama; Sanchara sthana – Rasayani and Shukra dhatu gata; Vyadhi swabhava – Chirakari.

### 2.6. Diagnostic Assessment

The patient was diagnosed based on the clinical findings and with necessary laboratory investigations. Semen analysis showed Sperm count – 20 mil/ml; Volume – 1ml; pH- Alkaline

Viscosity – Normal and Active motility was 10% The androgenic levels are as follows Total Testosterone – 167 ng/ml; Free Testosterone – 3.79 ng/dl; SHBG – 22.28 Nmol/L; Bioavailability of Testosterone – 92.7 ng/dl; Serum Albumin – 4.5 gm% ; Serum FSH – 4.60 mIU/ml; Serum LH – 3.25mIU/ml; Serum TSH – 1.010 mIU/ml.

### 3. THERAPEUTIC INTERVENTION

Patient started Deepana Pachana with Panchakola Choorna on 8/1/2021 to 12/01/2021 and observed reduced in the severity of Angadaurbalya, Angasadana, Anga laghavata, Vatanulomana, appetite is increased and Samyaka nidra. After the samyaka deepana and pachana advised to take snehapana with Murchit grith. Test dose 40ml on 13/01/2021 given and time of appetite was noted based on the Madhyama senhapana patient advised snehapana in fixed dose of 100 ml up to the samyaka sneha

### 4. TIMELINE

In the present case study The Kustha Choorna 500ml 2 capsules TID with warm milk was advised after proper kaya shuddi by Virechana and observed for the improvements with proper investigations. Patient was advised to follow shukrala diet and follow up was 15 days.

### 5. DISCUSSION

The discussion part deals with possible Karanas for the treatment

success with proper Tarka (Logic ). Acharya Charaka explained Retodosha in Sutrasthana based on the physical appearance of shukra and in Chikitsa sthana explained as Shukra dusthi based on the doshik involvement. In Keeyanthaseerashiya adhyaya tells about the lakshanas of Ksheena shukra, interpretation of these make sense to understand the deficiency of androgen hormones followed by Hypogonadism in male and leads to spermatogenic dysfunction i.e. the problem with count, motility, morphologic defects etc<sup>7</sup>. The normal fertile male will have > or equal to 15 mil/ml sperm concentration and active motility should be > or equal to 40% and 39mil/ml sperm concentration per ejaculation so the Oligozoospermia, Asthenozoospermia etc may contribute 40% of the total cause of infertility. In this patient had 20 mil/ml of sperm concentration and 10% of active sperm motility<sup>9</sup> Hence, considering this as Vata Pittaja dusthi in Pakwashaya the treatment is carried leads to Beeja dusthi or Shukradusthi.

**Table no: 01 Semen analysis**

Parameters	Before Treatment Date: - 1/6/2021	After Virechan Date: - 25/5/2021	After 30 days of Rasayana Date: - 24/2/2021	After 60 Days ( AT ) Date: - 27/3/2021
Sperm count	20 mil/ml	60 mil/ml	80 mil/ml	57 mil/ml
Volume	1 ml	1 ml	2 ml	1 ml
p <sup>H</sup>	Alkaline	Alkaline	Alkaline	Alkaline
Viscosity	Normal	Normal	Normal	
Sperm Motility				
Active %	10	30	40	45
Sluggish %	05	05	05	05
Dead %	85	65	65	50

**Table no: 02 Androgen Hormones**

Androgen Hormones	Before treatment	After Treatment
Total Testosterone	167 ng/dl	339.0 ng/dl
Free Testosterone	3.79 ng/dl	7.82 ng/dl
SHBG	22.28 Nmol/L	22.10 Nmol/L
Bio-availability of Testosterone	92.7 ng/dl	204.0 ng/dl
Serum Albumin	4.5 gms%	4.8 gms%
Serum FSH	4.60 mIU/ml	7.59 mIU/ml
Serum LH	3.25 mIU /ml	4.42 mIU /ml
Serum TSH	1.010 Miu/ml	0.975 Miu/ml

### Virechana Karma in Ksheena Shukra:

Virechana is one of the panchakarma procedure and most practiced mainly mentioned for vitiated Pitta Dosh as Dosh pratyaniika. Virechana is also choice of procedure for Rakta dusthi bezc Pitta and Rakta are Ashrayee and Ashraya bhava, in Yonivyapat chukitsa sthana acharya charaka told to adopt Rakta Pittahara chikitsa. Vayu located in Pakwashaya. Vayu in association with Pitta, if pervades the entire body. In the treatment of Vayu, mridu virechana is indicated.<sup>10</sup>

### Panchakola Choorna:

Pippali, Pippalimoola, Chavya, Chiktrak and Nagara are the ingredients of Panchakola choorna mentioned in Baishajya Ratnavali. All the ingredients of Panchakola choorna have the properties of Laghu, Ruksha and Sukshma Tikshna Gunas, Ushna virya, Katu Rasa, Katu vipaka and Pachana, Kaphahara. Rasa and Vipaka of Panchakola is Katu helpful in Agni deepana, Pachana. Thus it becomes clear that Deepana Drugs correct Agnimandhya and after the ignition of Jataragni there leads to Dhatwgni also by the Jatharagni.<sup>11</sup>

### Murchit Gritha:

Gritha is Pitta Anila Hara, and Murchana is done to remove the ama and make it more potent for this process the drugs used are Haritaki, Vibhitaki, Amalaki, Rajani (Haridra) Mustha and Matulunga swarasa in equal quantity and paka should be done up to the Samyaka siddhi lakshana and collected stored. The murchit gritha will get good aroma Amadosha hara Viryavana and helps to mitigate Vata Pitta. Hence, helps to relieve Ksheena Shukra.

### Kustha Choorna:

Kustha Choorna (*Sassaurea Lappa C.B. Clarke*) is herbal drug from Asteraceae family having the properties of Shukra sodhana, Shukrala effect.<sup>13</sup>

**Table no 3: Properties of Kustha according different authors**

Sl no	Properties	C.S	S.S	A.H	BH.NI	DH.NI	M.N	K.N	SH.NI	R.NI
01	Rasa				+	+	+	+	+	+
	Tikta				+	+	+	+	+	+
	Katu	+	+	+	+	+	+	+	+	+
02	Guna				+	-	+	+	-	-
	Laghu				+	-	+	+	-	-
	Ruksha				-	-	-	-	-	-
03	Veerya	+	+	+	+	+	+	+	+	+
	Ushna									
04	Vipaka				+	+	+	+	+	+
05	Dosha gnata	+	+	+	+	+	+	+	+	+
	Kaphavata shamaka									
06	Karma				+	+	+	+	-	-
	Shukrala									

**Phytochemistry and pharmacology of kustha choorna**

Kustha is Tikta Katu Madhura Rasa helps to mitigate Pitta and vata dosha, by its Ushan Virya Vata i.e. Vyana And Apana gets normal helps to improve normal function of dhatu. Kustha is showed higher content of **sesquiterpenoids** (79.80%) than monoterpenoids (13.25%) (Liu *et al.* 2012). Sesquiterpenoid lactones are useful in the treatment of cardiovascular diseases and their use as antimalarials and are responsible for a range of other effects such as prevention of neurodegeneration, antimigrane, analgesic and sedative activities.<sup>14</sup> The cardiovascular effects are the result of their ability to relax smooth muscle tissue by inhibiting iNOS-up regulation and consequently increasing levels of NO. so the nitric oxide is one of responsible factor for Penile erection.<sup>15</sup> It also contains Terpenes, Flavonoids, resinoids (6%), essential oil (1.5%) and alkaloid (0.05%), Inulin (18%), a fixed oil and other minor constituents like tannins and sugars.<sup>16</sup>

Different extracts of this plant have been found to exhibit different clinical pharmacological functions like.<sup>17</sup> Anticancerous, Anti-inflammatory, Anti-microbial, Immunomodulator, Hepatoprotective, Cardiovascular disease (Muhammad *et al.* 2013), Gastroprotective (Matsuda H *et al.*, 2000), Anti-ulcer (Mitra SK *et al.*, 1998), Anti-Spasmodic (Gilani AH *et al.*, 2007) Anti-Diarrheal (Negi *et al.*, 2013), Anti-Typhoid (U. Amara *et al.* 2017), Anti-Scabies (Mala F *et al.*, 2012), Larvacidal activity Anti-Parasitic (Akhtar and Rifat, 1991), Hypoglycemic (Upadhaya OP *et al.*, 1993) CNS Depressant (Okugawa H *et al.*, 1996), Bronchitis (Dutta *et al.*, 1960) Anti-Convolcent (Ambavade SD *et al.*, 2009), Anti-Epileptic (Harish *et al.* 2010).

**Pathyapathya:** Advised to follow virechana pathya during sodhana; Advised to take soft diet which is easily digestible; Mental exertion and advised to avoid heavy physical work; Avoid Katu amala lavana rasa pradhana and fried items during their routine diet

**Subjective observation:** Initially the patient came with chief complaints of Angadaurbalya Angasadana (Fatigue even small work), not feeling strong erection due to regular sexual act and watery semen. After administration of Panchakola Choorna felt reduced in the severity of Angasadana and Angadaurbalya. Due to Shukrakari action of virechana there was significant improvement in the chief complaints and after completion of Kustha Choorna Vajikaraka yoga he improved with Erection that is confirmed by the nocturnal penile tumescence, the activeness is improved and by the action of Deepana Pachana and Shukrala the overall sexual health improvement was seen.

**Objective Observation:** Spermatogenesis is a complex process where takes place in the testicular part of the male genital organ androgen hormones are responsible for the action by means of many secretions from the Pituitary gland. FSH will act on the sertoli cells helps for the spermatogenesis and LH will act on the Lydig's cells helps for the secretion of testosterone with negative feedback the secretion action to produce matured spermatozoa and excretion of testosterone takes place so the spermatogenesis takes 74 to 90 days to produce matured spermatozoa. In this case the quality of shukra lost due to the age androgen deficiency and nidana sevana but not seen spermatogenic arrest so the administration of Vajikaraka medications after virechana showed very good result with improvement in the hormonal level and seminal parameters. Before treatment the total testosterone was 167ng/dl and improved to 339.0ng/dl i.e. improved 50% with this intervention, free testosterone improved 3.79ng/dl to 7.82; Bioavailability of testosterone improved from 92.7ng/dl to 204.0ng/dl;

serum FSH increased from 4.60 mIU/ml to 7.59 mIU/ml and LH increased from 3.25 to 4.42mIU/ml so it was marked changes in the level of androgen hormones. Sperm concentration improved very well before treatment count was 20mil/ml and after the intervention improved to 50mil/ml and motility improved 10% sperm to 45 % Hence the kustha choorna showed very good improvement in the case of Asthenozoospermia and androgen hormones by the action Shukrala Shukra sodhana with Tikta Katu Madhura Rasa Ushan virya.

**1. CONCLUSION:**

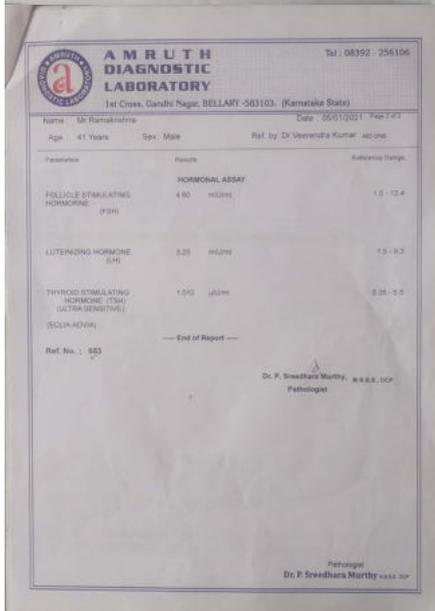
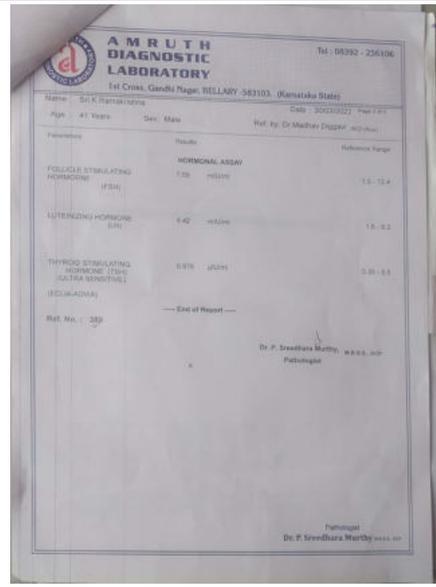
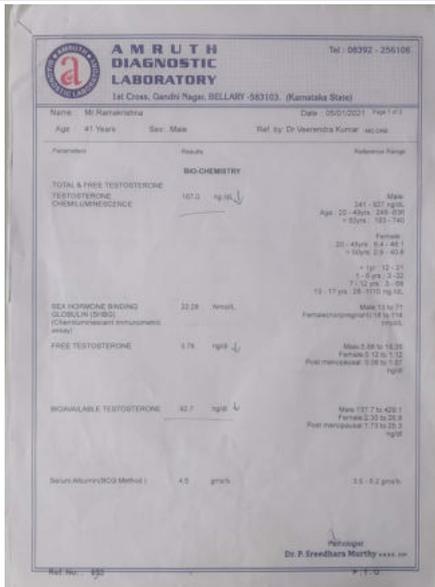
Sperm motility is characteristic parameter of fertile sperm. The pathology of it is both genetic and environment vata dosha with its chala and sukshma gunais responsible for normal and abnormal sperm motility. Shukra dusti is ayurvedic emulation parameter for sperm motility disorders sperm head is kapha sthana, mid piece is sperm energy sthana, and tail is vata sthana . vata pitta pradhana shukra dusti is classical guideline live for decreased motility due to akasha and vayu mahabhuta component. Testosterone levels, FSH, LH levels also contribute in emulation of sperm motility.

Deepana pachana with panchakola choorna, snehapana with murchita ghrita , vishrama kala abhyanga swedana virechana with abhayamodaka vati and kustha choorna rasayana will help in improvement in sperm count and motility. In the current case study the base line sperm count was 20mil/ml and active motile was 10%.

At the end of virechana sperm count was 60mil/ml and active motility was 30%. after 30 days of kustha rasayana sperm count was 80mil/ml semen volume increase from 1ml to 2 ml and active motility increased to 40%. However at the end of 60 days of treatment sperm count was 50 mil.ml and active motility increased to 45% were the variations in sperm count is within normal limits of WHO standard The total testosterone before treatment was 166mg/dl which increase to 339mg/ml free testosterone increase 3.79mg/dl to 7.89mg/dl and also bioavailability testosterone increased from 92.79mg/dl to 20.4mg/dl Kustha is effective in increasing the sperm count and motility over the period of 60days after virechana karma. The effect may be due to shukra shodhana, shukra rasayana, sthanya shodhaka. Terpenes, Flavonoids, resinoids (6%), essential oil (1.5%) and alkaloid (0.05%), Inulin (18%), a fixed oil and other minor constituents like tannins and sugars. Anti - inflammatory Anti-microbial Immunomodulator, Hepatoprotective etc. Properties.

The image displays four clinical laboratory reports from Sri Daruka Clinical Laboratory, arranged in a 2x2 grid. Each report includes patient information, test results, and a normal range. The top-left report is for patient SIVYENDRA, dated 25/10/21, showing a sperm count of 40 million/ml and 30% motility. The top-right report is for patient KAVYENDRA, dated 27/10/21, showing a sperm count of 50 million/ml and 45% motility. The bottom-left report is for patient KAMA, dated 18/10/21, showing a sperm count of 80 million/ml and 40% motility. The bottom-right report is for patient ANANDRA, dated 18/10/21, showing a sperm count of 50 million/ml and 45% motility. Handwritten notes in blue ink are present on the reports, such as 'After virechana' and 'After 30 days of Rasayana'. The reports also show improvements in testosterone levels and bioavailability over time.

**Androgen level BT**



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