



Original Research

Clinical Trial on Efficacy of Amalakyadi Yoga on Oligoasthenoteratozoospermia (Kshina Shukra)

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Abstract

To create a healthy progeny is one of the foremost Dharma of an individual, so fertility is an existential necessity since the time immemorial. Impaired sperm parameters especially decreased sperm count, motility and abnormal morphology leads to male infertility. Hence the current study was conducted with aim to evaluate the efficacy and safety of oral administration of Amalakyadi Yoga (AY) on oligoasthenoteratozoospermia. The results of the study showed that trial drug significantly improved the sperm count and motility moderately and total abnormal sperms reduced by 10.62%. Hence it is concluded that Amalakyadi Yoga can be of great help in managing the sperm abnormalities in infertile males.

Keywords: Male infertility, oligoasthenoteratozoospermia, sperm count, sperm motility, sperm morphology, Amalakyadi Yoga

Introduction:

Infertility seldom causes any physical debility, but its severity affects the couple's psychological harmony, sexual life and social function. A couple may be considered infertile if, after two years of regular sexual intercourse, without contraception, the woman has not become pregnant (and there is no other reason, such as breast feeding or postpartum amenorrhoea).¹ Gradual increase of infertility by an alarming 16.71% is estimated (W.H.O., 1993). Nearly 30 million couples in the country suffer from infertility and making the incidence rate of 10-20%.² The Indian reports, both from the Institute for research in reproduction, Mumbai and from Mehta et al, Bangalore reveal decline trend of semen quality³

Male infertility can be defined as an inability to induce conception due to defect in spermatogenic functions. 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.

As per the Ayurvedic classics reproduction is the work of *Shukra Dhathu*. Out of eight types of semen disorders (*Shukra dushti*) mentioned in the classics, *Kshina Shukra* is one which occurs due to involvement of *Vata and Pitta*⁴ and characterized by decrease in quality and quantity of *Shukra*. It incapacitates the patient from conceiving his life partner, ending in infertility. As a seed does not grow when impaired by unseasonal implantation and when afflicted by water, microbes, insects and

fire, similarly polluted semen in human beings does not help in procreation of an offspring.⁵

In contemporary science the conditions associated with *Kshina Shukra* can be well matched with Oligoasthenoteratozoospermia. In this condition the sperm count comes below 40 million/ml, motility of sperms comes below 50% (RLP+SLP) and morphologically healthy sperms less than 25%. In Ayurveda, the treatment of *Kshina Shukra* has been highlighted as *Upachaya* of *Shukra*. It can be done with the help of *Shukra* itself, or the drugs having *Shukra* like qualities or functions. *Kshina Shukra* has mentioned under the description of *Dhatu Kshaya Lakshana* in *Sutra Sthana*⁶ and its treatment in *Shareera Sthana*.⁷ Different *Nidana* for *Shukra Kshaya* has been indicated in *Vajikarana Adhyaya*.⁸ Eight types of *Retodoshas* are mentioned in *Sutra Sthana* and again re-mentioned in *Chikitsa Sthana* under the title of *Shukradushti*.⁹ *Kshina Shukra* condition is one of them and its treatment with *Upachaya* is mentioned.¹⁰

The branch of Ayurveda deals with this specialty is known as *Vajikarana or Vrishya Tantra*. It provides progeny to infertile couple, at the same time excellency of progeny with suitable therapeutic measures. Drugs having *Madhura Rasa, Guru-Snigdha Guna, Vrishya, Shukra Vardhaka, Balya* and *Rasayana* properties¹¹ has to be used for the treatment of *Kshina-Shukra*.

Amalakyadi yoga (AY), test drug, consists of *Amalaki, Guduchi* and *Gokshura* having *Vrushya* and *Rasayana* properties. AY is prepared in the form of tablet by giving *Bavana* (fortification) with the decoction (*Kashaya*) of same drugs and it was

administered in a dose of 3 tablets thrice a day for 45 days in 26 patients. Seminal parameters were compared before and after treatment and statistically analysed with SPSS 16.

Aims and Objectives:

To evaluate efficacy of *Amalakyadi yoga* on seminal and clinical parameters in the management of *Kshina Shukra* (Oligoasthenoteratozoospermia).

Materials and Methods:

Ethical clearance number: SDM/IEC/32/2010-11

Established cases of Oligoasthenoteratozoospermia from *Vajikarana* unit of *Kayachikitsa* department, SDM College of Ayurveda, Hassan as well as cases referred by other physicians were included in the study.

Method of Preparation of Amalakyadi yoga:

One part of powder each of Gokshura, Guduchi, Amalaki was taken and was given Bhavana with its Kashaya and made into tablets each of 700 mg.

Diagnostic Criteria:

The sperm count < 40 mill/ml^{12, 13} motility < 50% SLP + RLP¹⁴ and morphologically healthy sperms < 25% were considered as Oligo-asthenoteratozoospermia.

Inclusion Criteria:

Male infertility patients aged between 25- 50 yrs

Exclusion Criteria:

Varicocele, accessory sex gland infection, testicular maldescent, previous reproductive organ surgery, and sexually transmitted diseases were excluded.

Patients categorized under Azoospermia were excluded

Past history of mumps, orchitis, trauma, addictions, and acute febrile illness were taken into account

Diabetes, thyroid disorders, tuberculosis, vascular diseases, and any long-standing infection were also being taken into consideration.

Drug, Dosage and Anupana: The cases of oligoasthenoteratozoospermia were administered with Tablet Amalakyadi Yoga in a dose of 3 tablets

each of 700 mg three times a day with lukewarm water for 45 days.

Diet: All the patients registered in the study were advised to follow their normal routine diet.

Criteria of Assessment of Effect of Therapy:

Effect of therapy on oligoasthenoteratozoospermia patients was assessed on the basis of seminal parameters observed before and after treatment.

Semen Analysis: Semen analysis of patients was carried out by the scholar himself as per the recommended standards of semen examination by WHO for diagnosis and assessment of effect of therapy, in specially setup *Vajikarana* laboratory in the OPD of *Vajikarana*, SDM College of Ayurveda and Hospital, Hassan. Following investigations of semen sample were carried as per the guidelines of WHO (1993)¹⁵.

Appearance, liquefaction time, volume, viscosity, pH, sperm count, sperm motility and sperm morphology of the sperms.

Statistical Methods

The present study was an outpatient based clinical trial with pre and post test design. The data collected during clinical study were tabulated and statistically analyzed using SPSS-16 software. Data obtained were assessed by Student 't' test. The changes observed with P<0.05 were considered as significant and with P<0.001 was considered as highly significant.

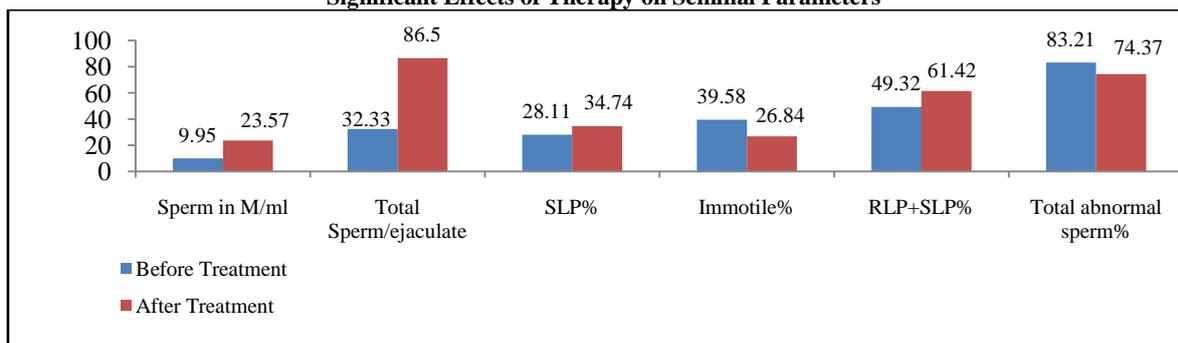
Observations

Status of patients: In the present study more than 50 patients were screened with complaints of no issues since a year of unprotected sexual intercourse and among them 26 patients of Oligoasthenoteratozoospermia were registered in the present study, amongst them 20 completed the full course of study and 6 (23%) patients left against medical advice (LAMA) for unknown reasons and were considered as drop outs.

Table-1
Effect of Amalakyadi Yoga on Seminal Parameters in 20 Subjects of the Study

Semen investigation	Mean BT	Mean AT	% of Change	S.D (±)	S.E (±)	t	P
Sperm count in millions/ml	9.95	23.57	↑136.88	15.80	3.53	3.86	<0.05
Rapid linear progressive %	21.21	26.68	↑25.79	13.99	3.21	1.71	>0.05
Slow linear progressive in %	28.11	34.74	↑23.59	7.21	1.65	4.01	<0.001
Non Progressive in %	11.32	12.37	↑9.28	8.15	1.87	.563	>0.05
Immotile in %	39.58	26.84	↓32.19	19.19	4.40	2.89	<0.05
RLP + SLP in %	49.32	61.42	↑24.53	16.30	3.74	3.23	<0.05
Total sperm count/ejaculate	32.33	86.50	↑167.55	48.50	11.13	4.52	<0.001
Total abnormal sperms in %	83.21	74.37	↓10.62	9.10	2.09	4.24	<0.001
Seminal volume in ml	3.25	3.67	↑12.92	0.90	0.20	2.07	>0.05
Liquification time in minutes	20.5	20.75	↑1.21	4.72	1.06	0.24	>0.05
pH	7.65	7.48	↓2.22	0.44	.098	1.79	>0.05

Figure-1
Significant Effects of Therapy on Seminal Parameters



Age: All the patients included in the study were adult males aged between 25 and 50 years. Among them maximum i.e. 38.4% belonged to 36-40 years age group and 30.6 % patients were between 25-30 years.

Working Pattern: From the current study it was found that 42.31 % of patients were doing jobs with mental work whereas 30.77 % were doing job that involves both physical energy and mental stress and 26.92% of patients were doing works only with physical exertion.

Results

The effects of AY on the various semen parameters along with statistical analysis are shown in Table-1. The drug significantly increased sperm count, slow linear progressive, RLP+ SLP in % and non progressive. It significantly decreased immotile sperms and Total abnormal sperms in %

Discussion

Amalaki, *Gokshura* and *Guduchi* of Amalakyadi Yoga are well known single drugs for their *Vrishya* and *Rasayana* properties^{16, 17, 18}. These drugs have *Madhura Vipaka* and *Shukra vardhaka* action. More over *Bavana* was done with the same *Kvatha* for 7 times which further enhances the potency of the drug. It has been mentioned that “*Samskarohi Gunantaradhanam*”. Recent studies also prove the spermatogenic properties of the above mentioned drug.

All the ingredients of AY possess *Madhura Vipaka*, *Guru* and *Snigdha Guna* and *Shita Virya*¹⁹. It has *Viryavardhaka* and *Vrsya* properties²⁰. All these factors might have synergistically acted and have brought improvement in sperm count, motility and morphology in patients of Oligoasthenozoospermia. Statistically insignificant changes noted in volume (↑), pH (↓) and liquification time (↑) (within normal). It shows that the drug does not have any adverse action and helps to maintain normal physiological parameters of semen. Mild (insignificant) improvement in seminal volume points towards *Shukravruddhi* property of drugs.

Effect on the Sperm Count: The drug significantly increased the total sperm count in millions/ml by 136.88% and total sperm count/ejaculate by 167.55%. This suggests spermatogenic maturation and capacitance activity of sperms. This finding also supports the *Shukravruddhikara* property of the drugs.

The *Guru* and *Snigdha* properties of *Guduchi* and *Gokshura* might have contributed to increase the viscosity of the semen may be because of that there was a mild increase in the liquefaction time.

Effect on the Motility: The motility (RLP + SLP) was significantly improved that may be because of the *Rasayana* effect of the drug used. *Rasayana* will do the

Dhatu Pushti thereby *Ojas* may also get nourished, *Ojas* is directly related to the *Bala* and the *Bala* of *Shukra Dhatu* may helped in the motility of the sperms.

Effect on the Morphology: There was a significant improvement in the morphology, after the treatment, this may be due to the *Rasayana* effect of the drug. Change in morphology may also be due to anti-oxidant activity of *Amalaki*. Studies show supplementation in vitro with the antioxidants ascorbate, urate and alpha tocopherol separately has beneficial effects for sperm DNA integrity (C M Hughes, S E Lewis, et al.1998)

The above results showed that Amalakyadi Yoga is potent *Vrsya*, *Balya* and *Virya-varadhaka* drug so it can be used effectively in the management of Oligoasthenoteratozoospermia (*Kshina Shukra*).

Conclusions

Amalakyadi yoga significantly increased the sperm count/ml and total sperm count/ejaculation in patients of *Kshinashukra* (Oligoasthenoteratozoospermia).

Amalakyadi yoga significantly improved the rapid and slow linear progressive motility of sperms in patients of *Kshinashukra* (Oligoasthenoteratozoospermia).

Amalakyadi yoga decreased the total abnormal forms of sperms in patients of *Kshinashukra* (Oligoasthenoteratozoospermia).

As impaired sperm parameters especially decreased sperm count, motility and abnormal morphology lead to male infertility and *Amalakyadi* yoga has shown beneficial effects on all these parameters hence *Amalkyadi* yoga may be recommended for treating the patients of Oligoasthenoteratozoospermia (*Kshina Shukra*).

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