

Efficacy and Safety of Speman in patients with Oligospermia: An Open Clinical Study

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A study was conducted to evaluate the efficacy of Speman, a polyherbal formulation, in the treatment of oligospermia at the Institute of Medical Sciences, Banaras Hindu University, Varanasi. Thirty patients diagnosed with idiopathic oligospermia were recruited in the study, and were administered Speman at a dose of 2 tablets, twice daily for a period of 6 months. The patients were followed up every month for 6 months. After 6 months of treatment with Speman, the number of active motile sperms increased with a reduction in non-motile sperms. There was an increase in the sperm count.

INTRODUCTION

In approximately 60% of couples experiencing infertility, a male factor is involved. In 40% of these couples, it is primarily male factor, while in 20% of these cases, it is a combination of both male and female factors associated with lead to infertility. In 1958, Buxton and Southam stated that approximately 15% of the couples attempting their first pregnancy met with failure¹. Most authorities define these patients as primarily infertile, if they have been unable to conceive even after one year of unprotected intercourse. As per the WHO guidelines, a report with a sperm count of <20 millions/ml is considered oligospermia².

A number of nutritional therapies have shown to improve sperm count and sperm mobility including amino acids like carnitine, arginine etc., zinc, selenium and Vit B₁₂. Numerous antioxidants have also proven beneficial in treating male infertility, such as Vit C, Vit E, glutathione and co-enzymes Q₁₀³. A multifaceted therapeutic approach to improve male fertility involves identifying harmful environmental and occupational risk factors, while correcting underlying nutritional imbalances to encourage optimum sperm production and function⁴⁻⁶.

The present study was carried out to evaluate the efficacy and safety of Speman, a herbal formula comprising of *Orchis mascula*, *Asteracantha longifolia*, *Lactuca scariola*, *Mucuna pruriens*, and extracts of *Argyreia speciosa*, *Tribulus terrestris*, *Leptadenia reticulata* and *Parmelia perlata* enriched with Suvarnavanga in terms of improving number and morphology of sperms.

MATERIAL AND METHODS

Thirty male patients in the age group of 20-43 years with oligospermia were recruited from Sir Sunderlal Hospital, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India. A medical history including duration of infertility, previous history of conception, sexual history with respect to erection and ejaculatory functions were obtained. The patients with undescended testis, evidence of thyroid diseases, inguinal hernia, severe diabetes with complications and other systemic diseases requiring specific therapies were excluded from the study. Sperm morphology was evaluated according to Kuruger's criteria after Diff-Quik Staining. Serum testosterone and complete seminal examination were carried out before and after the completion of treatment. This was an open clinical study, where response was assessed before and after the treatment. The patients were administered Speman uncoated tablets at a dose of 2 tablets twice daily for a period of 6 months and were advised for follow-up every month.

RESULTS

All the patients completed the treatment and reported for follow-up every month. The mean sperm count increased from $27.64 \pm 3.31\%$ to $41.43 \pm 5.96\%$ in the patient group with <50 million/ml of sperm count. The increase in sperm count was not significant in patient group with >50 million/ml of sperm count. The quantity of semen increased from 2.2 ± 0.2 ml to 2.3 ± 0.2 ml, pH of semen was not altered with the treatment. The active motility of the sperms improved from $29.17 \pm 2.52\%$ to $38.83 \pm 2.59\%$ ($p \leq 0.0098$). The activity of motile sperms persisted for 2 hours. At the end of 6 hours the active motility, increased from $15.24 \pm 1.74\%$ to $27.62 \pm 2.22\%$ ($p \leq 0.0001$) after treatment. The sluggish sperms increased from $27.7\% \pm 2.22\%$ to $30.5 \pm 1.96\%$

after treatment. In the first hour the non-motile sperms reduced from $43.33 \pm 3.07\%$ to $30.67 \pm 2.80\%$ after treatment. The non-motile sperms after 6 hours, before treatment were $66.16 \pm 2.89\%$ which reduced to $47.66 \pm 2.59\%$ ($p \leq 0.0001$) after treatment. This shows that Speman

Parameters		Before treatment	After treatment	
Quantity (ml)		2.2 ± 0.2	2.3 ± 0.2	
Liquidation (min.)		15 ± 0.7	14 ± 1.0	
PH		7.71 ± 0.06	7.71 ± 0.05	
Motility	Active (%)	1 hour	29.17 ± 2.52	$38.83 \pm 2.59^*$
		2 hour	29 ± 2.54	38.83 ± 2.57
		4 hour	22.38 ± 1.96	32.23 ± 2.36
		6 hour	15.24 ± 1.74	$27.62 \pm 2.22^{**}$
	Sluggish (%)	1 hour	27.7 ± 2.22	30.5 ± 1.96
		2 hour	27.2 ± 2.23	30.5 ± 1.97
		4 hour	25.3 ± 2.5	31.5 ± 1.81
		6 hour	19.1 ± 2.0	25.9 ± 1.47
	Non-motile (%)	1 hour	43.33 ± 3.07	30.67 ± 2.80
		2 hour	44.00 ± 3.08	30.67 ± 2.80
		4 hour	52.86 ± 3.50	36.27 ± 2.93
		6 hour	66.16 ± 2.89	$47.66 \pm 2.59^\#$

* $p \leq 0.0098$; ** $p \leq 0.0001$; # $p \leq 0.0001$ as compared to the pretreatment value.

	Before treatment	After treatment
Sperm count (in patients with <50 million/ml) (n=14)	27.64 ± 3.31	$41.43 \pm 5.96^*$
Total abnormality (%) (n=30)	19.01 %	3.3%**
Abnormal head (%) (n=30)	9.7%	8.0%
Abnormal mid piece (%) (n=30)	4.46%	3.15%
Abnormal tail (%) (n=30)	3.8%	0.6%

* $p \leq 0.05$; ** $p \leq 0.0083$ as compared to the pretreatment value.

increases the quantity, quality and improves morphology of the sperms. The abnormality of the sperm significantly reduced from 19.01% to 3.3% ($p \leq 0.0083$). The testosterone levels increased from 461.4 ± 27.47 ng/dl to 474.3 ± 23.02 ng/dl. Although, it was not statistically significant, however, there was a trend towards rise (Tables 1 and 2).

DISCUSSION

Speman is a polyherbal formulation consisting of *Orchis mascula*, *Asteracantha longifolia*, *Lactuca scariola*, *Mucuna pruriens*, *Argyreia speciosa*, *Tribulus terrestris*, *Leptadenia reticulata* and *Parmelia perlata*. Most of these herbs have been used in traditional medicine as aphrodisiacs. *Orchis mascula* is used as a restorative and a tonic aphrodisiac in conditions associated with weakness or reduced sexual activity⁴. *Lactuca scariola* possesses hematinic and hypnotic properties. It improves appetite and is useful in the treatment of spermatorrhea⁴. *Mucuna pruriens* is used in spermatorrhea and to treat sexual debility. It is used as an aphrodisiac and a prophylactic agent in patients with oligospermia to increase the sperm count. It counter acts male sterility and acts as a nervine tonic³. *Argyreia speciosa* is an aphrodisiac, diuretic, and is used to control gonorrhoeal infection³. *Tribulus terrestris* is used to treat spermatorrhea, diseases of the genitourinary system, impotence and sexual debility⁴. All these evidences confirm the synergistic role of various herbs in Speman. In the above trial, Speman increased the sperm count, which could be attributed to the presence of *Mucuna pruriens* and its constituents. The herbs like *Orchis mascula* and *Tribulus terrestris* along with other herbs reduced the abnormalities of the sperm. The motility of the sperms increased due to the combined aphrodisiac and stimulant effect of the herbs.

Speman has been shown to increase the testicular weight by producing dose-related growth in the experimental studies⁵. This is beneficial, and reflects the increase in serum testosterone levels and improvement in the sperm quality.

Though there was no significant improvement in the quantity of semen and serum testosterone levels, it may be further confirmed by enrolling larger number of patients in the trial. Patients with oligospermia may require long-term treatment to correct abnormal morphological characteristics and improve testosterone levels.

CONCLUSION

The study has shown that Speman is effective in oligospermia, as it increases the sperm count and improves morphology. Speman may also help to treat male infertility associated with oligospermia.

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