

Treatment of Oligospermia with Speman: A Formulation of Plant Origin

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INTRODUCTION

Infertility is defined as the inability to conceive after one year of intercourse without contraception. It is a distressing problem for 10-15% of the population, with the incidence increasing over the years. Responsibility is on the male partner in almost half of the couples. Any clinically normal man can have reports of low counts and/or motility on semen analysis. As per the WHO guidelines¹, a report with a count less than 20 mill/ml is an abnormal condition (oligospermia). A recent study by Carlson (1992)² has indicated a decrease in sperm density over the past fifty years. Greenberg *et al.* (1978)³, in a large study of subfertile males found no identifiable cause in 25% of them. There are numerous studies regarding the use of hormonal therapy in the form of thyroid hormone, clomiphene citrate, human chorionic gonadotrophin and androgens administered to the subfertile male partners. Steroids given for long periods are not effective and have side effects. With safety being the priority, there is a search for alternative treatment modalities in other systems of medicine viz., Ayurveda, Unani, Homeopathy, etc. Ayurveda is an ancient medical system based on natural herbs and their extracts. "Speman" (A product of The Himalaya Drug Company, Bangalore) is an indigenous formulation of plant origin with no side effects and has been tried for oligospermia, asthenospermia, enlarged prostate, azoospermia and other testicular problems. The present study was undertaken to evaluate the efficacy of Speman in cases of idiopathic oligospermia.

Objectives

This study was undertaken to assess two main objectives:

- 1) To assess the effectiveness of treatment with a plant origin drug "Speman" in idiopathic oligospermia.
- 2) To compare the effectiveness of Speman with clomiphene citrate in oligospermia.

MATERIAL AND METHODS

Patients attending the Infertility Clinic at the Gynecology Department of Nehru Hospital, Postgraduate Institute of Medical Education and Research, Chandigarh, were interviewed, with a detailed history taken and examination of both the partners done. Semen examination of the male partner was done twice, 2-4 weeks apart, after an abstinence of 5-7 days. One

hundred and sixty males were diagnosed with ‘idiopathic oligospermia’ as per the WHO manual and were included in the study.

The inclusion criteria were:

- i) Healthy males 21-45 years of age with infertility of more than one year,
- ii) Informed volunteers giving written consent,
- iii) Patients who were willing for a follow-up of at least 6 months, post-treatment, and for semen examination.
- iv) No past history of renal, hepatic or any other chronic illness in the past,
- v) Normal liver and renal functions tests.

The following cases were excluded:

- i) Complete azoospermia in pre-treatment samples,
- ii) Evidence of male accessory gland infection,
- iii) Any recent medical or surgical illness,
- iv) Exposure to environmental factors known to affect spermatogenesis,
- v) Hormone treatment for promoting fertility in the last three months.

The following investigations were done before starting and after completing the therapy:

- i. Complete haemogram-haemoglobin, total and differential leucocyte count,
- ii. Liver function tests-serum bilirubin, serum alkaline phosphate, SGOT and SGPT,
- iii. Lipidogram-serum cholesterol and lipid profile,
- iv. Renal function tests and serum electrolytes,
- v. Hormone analysis – serum testosterone, LH and FSH,
- vi. Semen analysis was repeated after completing the treatment.

The subjects were randomly divided into two groups:

Group I: Speman Group – Subjects were given 2 tablets, thrice daily for three months.

Speman contains the following constituents:

<i>Orchis mascula</i>	65 mg
<i>Lactuca scariola</i>	16 mg
<i>Astercantha longifolia</i>	32 mg
<i>Mucuna pruriens</i>	16 mg
<i>Parmelia perlata</i>	16 mg
<i>Argyreia speciosa</i>	32 mg
<i>Tribulus terrestris</i>	32 mg
<i>Leptademia reticulata</i>	32 mg
Suvarnavang (Mosaic gold)	16 mg

Group II: Clomiphene citrate group – These patients were given 25 mg of clomiphene citrate daily for a period of 3 months. Clomiphene citrate is a synthetic nonsteroid compound, which is supposed to stimulate pituitary gonadotrophins release by excluding oestradiol from hypothalamic receptor sites.

Follow-up

Any side effects during the treatment period were noted. Semen examination was done 2-3 months after completing the therapy. Haemogram, LFT, RFT and lipidogram were also repeated on completion of therapy. Female partners recorded their menstrual pattern with mid cycle coitus and reported any missed period. Statistical analysis was carried out using 'chi-square' test.

RESULTS

The subjects were equally distributed in both the drug groups according to age, type and duration of infertility. More than 80% of men were in the age group of 21-40 years and presented with primary infertility. In half the patients the duration of infertility was 2-4 years (Table 1). 30% of men gave either a history of problems like mumps or salivary gland infection, which could directly affect the semen parameters, some were chronic alcoholics or smokers (>10 cigarettes/day) (Table 2). These patients were almost equally distributed in both treatment groups.

On detailed examinations, 10 men had antisperm antibodies present, 12 tested positive for sexually transmitted diseases, and were treated with conventional drugs before the specific treatment was started.

Fine needle aspiration cytology of testis was done in 10 patients with severe oligospermia, 9 showed a normal testicular morphology, and 1 case was reported as "late maturation arrest" (Table 3). After three months of treatment, significant improvement in sperm count and motility was observed in 40% of the men who received Speman and in 45% men, who received clomiphene citrate. The wives of 13 patients

(16.2%) became pregnant in the cohort on treatment with Speman and 10 (12.4%) on treatment with clomiphene citrate. In 30% of men in the clomiphene citrate group and 32% men in the Speman group, the seminal parameters did not show any improvement. Patients

		No. of patients	
		Speman	Clomiphene citrate
Age (years)	21-30	25	30
	31-40	40	38
	>40	15	12
Type of infertility	Primary	64	58
	Secondary	16	22
Duration of infertility (years)	1-4	36	40
	5-8	31	26
	>8	13	14

History	No. of patients		
	Speman	Clomiphene citrate	Total
Mumps with orchitis	2	1	3
Accessory gland infection	3	4	7
Alcoholic	10	6	16
Chain smoker	8	10	18
Opium addict	2	3	5

		Before treatment		After treatment	
		Speman (80)	Clomiphene citrate (80)	Speman (70)	Clomiphene citrate (68)
Sperm counts (mill/ml)	Nil	Nil	-	4	7
	<5	27	30	5	7
	6-20	53	50	30	21
	>20	-	-	31	33
Sperm motility (%)	<20%	32	27	15	11
	21-40	30	35	19	25
	>40	18	18	36	32

with severe oligospermia did not show any significant improvement in either sperm count or sperm morphology (sperm count <5 mill/ml). None of the patients had any side effects or alteration in liver function test, renal function test, hemogram or lipid profile to necessitate discontinuation of therapy in both treatment groups.

DISCUSSION

There are various reports showing improvement in spermatogenesis with long-term use of antiestrogen clomiphene citrate⁴⁻⁷, some being placebo controlled studies. Few others have reported no significant improvement in seminal parameters after treatment with clomiphene citrate, however higher pregnancy rates have been observed⁸⁻¹¹. O'Donovan¹² in a meta-analysis of 10 studies on clomiphene citrate or tamoxifen vs placebo therapy found an increase in pregnancy rates during treatment and did not monitor their semen parameters⁷. During treatment, pregnancy rates varying from 10%⁷ to 58%⁹ have been reported in placebo controlled studies. Wang *et al.*¹⁰ has reported pregnancy rates of 36% and 22% when husbands were given 25 mg and 50 mg of Clomiphene citrate respectively. In this study, pregnancy rates of 12.4% (Clomiphene citrate) and 16.2% (Speman) were seen. In the clomiphene citrate group, 45% of men showed improved seminal parameters and 30% showed no improvement or worsening.

Semen Parameters	Clomiphene citrate	Speman
Significant improvement	36 (45%)	32 (40%)
Same	24 (30%)	26 (32.5%)
Worse	9 (11.4%)	12 (15%)
Positive pregnancy	10 (12.4%)	13 (16.2%)
Lost to follow-up	11 (14%)	10 (12.5%)

In spite of many other drugs having been tried for achieving pregnancy—Masterlone, pentoxyfylline, testosterone for rebound therapy, tamoxifen, steroids and placebo, no satisfactory drug regimen has been evolved till date. In recent years, a large number of reports have appeared showing improvement following Speman (a product of The Himalaya Drug Company, Bangalore) used in India¹³⁻¹⁶. Limaye¹⁷ has reported an overall improvement of 50.45% in semen parameters. It is a non-steroidal drug without any androgen like side effect or systemic toxic effects^{17,18}. Speman has shown to improve testicular function in addition to the accessory gland functions including prostatic fluid parameters^{15,16}. It has been shown to have no effect on hypothalamic-pituitary axis¹⁴. In this study 32 (40%) patients showed improvement in semen parameters after completing the therapy, which is slightly more than other authors¹⁵⁻¹⁷ and 13 wives of men under treatment conceived (16.2%). No improvement was seen in one third of men. On comparing the response to the two drugs, the semen parameter results were statistically similar.

CONCLUSION

There are a large number of studies trying different modalities and dose regimens in oligospermia, and clomiphene citrate has withstood the test of time with improved pregnancy rates in most studies. A remedy from our alternative system, Speman has also been widely tried and proved safe and effective over the last twenty years in India. In this study, with a seminal picture improvement in less than half the classes in two subgroups and a pregnancy rate of 12% and 16%, both the treatment groups had a similar outcome. Hence, it is

concluded that Speman is as effective as clomiphene citrate in the treatment of oligospermia without any systemic side effects.

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