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Efficacy of Speman in the treatment of male subfertility

Indu Singh, Pandey, R.N., Surjit Sarkar
Surya Medi-Tech Hospital and Research Center, 1, Shivajee Nagar Colony,
Mahmoorganj, Varanasi, Uttar Pradesh, India
and

Kala Suhas Kulkarni,
Medical Advisor, R&D Center, The Himalaya Drug Company, Makali, Bangalore, India.

ABSTRACT

A study was conducted to evaluate the efficacy of Speman, a polyherbal formulation, in the treatment of male subfertility. Sixty patients in the age group of 22-45 years with idiopathic infertility were recruited in the study. The patients were considered oligospermic if the total sperm count was less than 20 million/ml and were administered Speman at a dose of 2 tablets, twice daily for a period of 3 months. Repeat semen analysis was conducted at intervals of 1 month for 3 months. Sperm density, motility and morphology were primarily evaluated. Hormone assay for testosterone was also performed before initiating the treatment and finally after the completion of treatment. Sperm density increased significantly from 19.41 million/ml to 26.81 million/ml at 3 months. A significant increase in the percentage of sperm density (13.54 ± 1.02 million/ml) was observed after 3 months of Speman treatment compared to the mean sperm density value (4.68 ± 0.32 million/ml) before treatment. The sperm motility also showed significant improvement from 40.50% to 46.16% after 3 months' treatment. Testosterone levels also increased following treatment with Speman. The mean testosterone levels before treatment with Speman was 3.85 ± 0.14 ng/ml, which increased to 6.12 ± 0.22 ng/ml after 3 months of treatment with Speman. Thus, Speman may improve the sperm density and morphology by influencing testosterone.

Keywords: Speman, oligospermia, azoospermia

INTRODUCTION

Approximately 22% of couples trying to conceive face problems with conception. The various factors responsible for male infertility are low sperm count, defective sperm production, abnormal sperm morphology and impaired sperm transport. The World Health Organization (WHO) study identified male infertility as the factor in 51.1% of 6,000 infertile couples. Sperm dysfunction is defined as the inability of the sperm to fertilize. In clinical situations, infertile men are mostly identified with abnormal semen quality and sperm count. In most clinical cases, the problem is related to sperm count or absence of sperm (e.g. oligospermia and azoospermia). Backer and colleagues found no specific cause in 60% of the cases and the condition was classified as "idiopathic" infertility[1].

A number of non-hormonal therapies such as treatment of kallikrein, a glycoprotein administered orally has been widely used in idiopathic male infertility, which involves enhancement of enzyme activation of kininogens that has been shown to have a positive effect on sperm motility *in vitro,*

stimulates sperm metabolism and improves cervical mucus penetration[2]. Gonadotrophin is also useful to treat male infertility and has been used for a long time with an average success rate.

A normal level of testosterone is also required for optimum spermatogenesis. Anti-oestrogenic compounds such as clomiphene citrate lead to an increase of gonadotrophin and testosterone serum concentrations to influence fertility.

Speman (uncoated) has been used for a long time to improve sperm count and abnormal sperm morphology. The present study was carried out to evaluate the efficacy of Speman (uncoated dosage formulation) on sperm density, motility, morphology and testosterone levels.

MATERIALS AND METHODS

Sixty male patients in the age group of 22-45 years with idiopathic infertility attending the Surya Medi-Tech Hospital and Research Center, Varanasi, were recruited in the study. Prior to the treatment, semen analysis was performed. The semen evaluation was done as defined by the WHO[3], 1992. The patients were considered oligospermic when the total sperm count was <20 million/ml and were administered Speman (uncoated) in a dose of 2 tablets, twice daily for a period of 3 months. Repeat semen analysis was conducted at intervals of 1 month for 3 months. The evaluation was mainly concentrated on sperm density, motility and morphology. Hormone assay for testosterone was also performed before initiating the treatment and finally after the completion of treatment.

Hormone assay:

Before initiating the treatment, a 2 ml blood sample was collected in the morning, centrifuged within 2 hours and stored at –20^{o}C for testosterone assay (Biochem Immunosystems Italia, Italy). To avoid interassay interference, blood samples of each subject were analyzed in the same assay. Intra- and inter-coefficients of variation were found to be between 4-9%. The normal value for testosterone was 3.42 ng/ml or >12 nmol/l.

Swim up technique was applied for sperm wash, before and after the treatment. In this procedure 1 ml of semen was mixed in 2 ml of EBBS media (Medi Cult, Denmark) and centrifuged at 1600 rpm for 1 minute. The supernatant was discarded, pellet resuspended in 2 ml of media and subjected to centrifugation at 1400 rpm for 2 minutes. The supernatant fluid was discarded and pellet layered with 1 ml of media and kept in CO_2 incubator for 30 minutes. The temperature and CO_2 concentration was maintained at 30^{o}C and 6% respectively. After 30 minutes of incubation, the sample was analyzed for sperm density and motility with the help of Meklers Counting Chamber.

Statistical Analysis: All data are expressed as mean ± SEM. For all statistical comparisons, a *p* value <0.05 were considered significant. Difference between pre- and post-treatment values were evaluated using Paired 't' test. Analysis was performed using Prism software, version 3.02.

RESULTS

The semen analysis data such as density, motility and sperm morphology before and after treatment with Speman is shown in Table 1. Sperm density increased significantly from 19.41 million/ml to 26.81 million/ml at 3 months. Sperm density showed improvement at 4 weeks. There was a gradual

improvement in sperm density with continuation of treatment. The sperm motility also showed significant improvement from 40.50% to 46.16% after 3 months treatment. The sperm motility also showed gradual improvement. Sperm morphology also improved from 53.38% to 61.62%.

Table 2 displays the mean testosterone hormone levels before and after treatment with Speman. The mean testosterone levels before Speman treatment was 3.85 ± 0.14 ng/ml, which increased to 6.12 ± 0.22 ng/ml after 3 months of treatment with Speman.

The mean sperm density recovery after sperm wash by swim-up procedure before and after treatment of Speman is shown in Table 3. A significant increase in the percentage of sperm density (13.54 ± 1.02 million/ml) was observed after 3 months of Speman treatment compared to the mean sperm density value (4.68 ± 0.32 million/ml) before treatment.

Table 1: Sperm density, motility and morphology before and after 3 months of treatment with Speman

Semen parameters	Pre-treatment	Post-treatment
Density (mill/ml)	19.41 ± 2.37	26.81 ± 2.72 (p<0.0001)
Motility (%)	40.50 ± 2.30	46.16 ± 2.8
Morphology (%)	53.38 ± 3.09	61.62 ± 2.58 (p<0.0007)

Table 2: Pre- and post-treatment levels of serum testosterone with Speman

Pre-treatment	3.85 ± 0.14 ng/ml
Post-treatment	6.12 ± 0.22 ng/ml

Table 3: Mean sperm density recovery after sperm wash by swim-up procedure pre- and post-treatment

Pre-treatment	4.68 ± 0.32 million/ml
Post-treatment	13.54 ± 1.02 million/ml (p<0.0001)

DISCUSSION

Speman is a polyherbal formulation comprising of powders of *Orchis mascula*, *Asteracantha longifolia, Lactuca scariola, Mucuna pruriens* and extracts of *Argyreia speciosa, Tribulus terrestris, Leptadenia reticulata, Parmelia perlata,* enriched with Suvarnavang. All these constituents have shown to improve sperm physiology in traditional medicine. Suvarnavang has been reported useful in controlling genitourinary infections.

The clinical importance of Speman to treat human oligospermia has been well documented. In many reports pertaining to the clinical application of Speman, it was revealed that in at least 50% of oligospermic men, the sperm concentration and sperm motility improved. Investigators have reported the beneficial effect of this drug even on azoospermic patients. It was observed that after prolonged treatment ranging between 12 and 24 months in a group of 41 azoospermic patients, nearly 50% of patients had a few sperms in their ejaculates[4]. The role of testosterone in the maintenance of spermatogenesis and accessory sex organs has been well demonstrated. In this clinical trial, testosterone levels were also increased following treatment with Speman. Thus, Speman may improve the sperm density and morphology by influencing testosterone.

REFERENCES

1. Nieschlag E and Behre HM. Andrology: Male Reproductive Health and Dysfunction. Springor, Heidelberg, 1997.
2. Scill WB. Kallikrein in Doppelblindversuch bei idiopatischer infertility. *Hautarzt* 1978; 28:38-312.

3. World Health Organization. WHO Laboratory manual for the Examination of Human Semen and Sperm-Cervical Mucus Interaction, 3rd Edition, Cambridge University Press, Cambridge, 1992.
4. Jayatilak PG, Dattatreya Murty D, Sheth AR and Pardanani DS. Effect of an indigenous drug (Speman) on accessory reproductive functions of mice. *Ind. J. Exp. Biol.* 1976; 14(2): 170-173.