

RESEARCH ARTICLE

Male Fertility Supplements (MFS Plus) Treatment Improve Semen Quality in a Sample of Iraqi Infertile Males**Haider M. M.Dabbach¹, Majid H. Ahmed²**

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Abstract

Background: At least in 25% of infertile men, no identifiable cause can be attributed to the problem, so it is termed idiopathic infertility. Those men are candidates for empiric medical therapy which include antioxidant therapy. Men upplement Plus (MFS Plus) uses a powerful all-natural formula of many antioxidants in addition to Relora to improve semen quality.

Objectives: To evaluate the effect of MFS Plus on sperms concentration, motility and morphology in men with oligo and/or asthenozoospermia in sample of Iraqi infertile males.

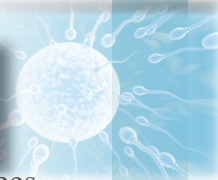
Methods: A comparative clinical trial study was conducted at High Institute of Infertility Diagnosis and Assisted Reproductive Technologies during the period from July 2015 till February 2017. Male partner of infertile couples who had one or more of the following criteria oligo, astheno, and/or teratozoospermia according to criteria of WHO 2010 were involved in this study.

Eighty-one males were divided randomly into two groups, the first group (group A) were given MFS Plus capsule AMS® (America Medic & Science) two capsules twice daily for three months and the second group (group B) were given vitamin E capsule (one capsule three times daily) for the same period. A second semen analysis were done after three months for each subject in both groups to show the effect of both types of treatment on semen quality.

Results: There was a highly significant increase in sperms progressive motility % (14.0 ± 11.41 vs 29.35 ± 15.61 , p value < 0.001) and a highly significant decrease in immotile sperms % (60.15 ± 19.3 vs 41.52 ± 18.18 , p value < 0.001) in the group of patients who received MFS Plus treatment. Moreover, there was significant increase in sperm concentration and percentage of normal sperm morphology (p value = 0.027, 0.019 respectively). However, no significant change was observed regarding semen volume and percentage of non-progressive motility. Whereas there were no significant changes in any of semen analysis parameters in the group of patients (group B) who received placebo.

Conclusion: MFS Plus usage for three months is very beneficial for sperm motility in addition to its valuable effect on sperm concentration and morphology and it is more efficient than vitamin E alone.

Keywords: male infertility, sperm motility, antioxidants, MFS plus, vitamin E.



Introduction:

Male infertility considered as a global health issue, which has been not truly understood its magnitude and prevalence (1). Its total contribution can be as high as 50% (2).

The causes underlying male infertility are numerous at one or more of the following levels pretesticular, testicular, posttesticular.

Pretesticular causes like hypothalamus disease and hypothyroidism and others (3). Testicular causes like chromosomal causes vanishing testis syndrome, radiation, drugs, systemic disease like renal failure, liver cirrhosis, sickle cell disease and others (4). Posttesticular causes like reproductive tract obstruction, cystic fibrosis, epididymis obstruction, blockage of ejaculatory duct, vasectomy, infection and others (5).

But most cases of male infertility has no identifiable cause. In at least 25% of infertile men, no identifiable cause can be attributed to the problem. Because the pathophysiology is ill-defined, this is termed idiopathic infertility. Those men are candidates for empiric medical therapy (6).

Semen quality could be considered a measure of male fertility potential, a marker of injury, toxic exposures (drugs, endocrine disrupters, and heavy metals), infections, fever, and even psychosocial stress (7).

One of the empiric treatment is antioxidant therapy. There is evidence that up to 40% of infertile men have increased level of reactive oxygen species in the reproductive tract, these species OH, O₂ radicals and hydrogen peroxide can cause lipid peroxidation damage to sperm membrane, treatment with scavengers of these radicals may protect sperm from oxidative damage. These antioxidant like vitamin E, vitamin C, glutathione and others from 3-6 months (8). These agents may be useful in a subgroup of infertile men with elevated levels of seminal reactive oxygen species.

So, antioxidant supplementation reduces the percentage of damaged spermatozoa (6).

Men Fertility Supplement Plus (MFS Plus) uses a powerful all-natural formula (figure 1) that involved elements already used alone or in combination to support the improvement of male factor issues such as sperm count, motility, morphology and overall wellbeing of their fertility functions.

SUPPLEMENT FACTS		
Serving Size: 4 Capsules Servings Per Container: 15		
Amount Per Serving	% Daily Value	
Vitamin E (as d-alpha tocopheryl acid succinate)	400 IU	1333%
Vitamin C (as ascorbic acid)	200 mg	333%
Lycopene	100 mg	**
L-Methionine	25 mg	**
Vitamin A (as beta carotene)	5000 IU	100%
Folic Acid	1000 mcg	250%
Selenium (as L-selenomethionine)	250 mcg	357%
Vitamin B12 (as cyanocobalamin)	15 mcg	250%
Proprietary Blend	1566 mg	*
Acetyl-L-Carnitine		*
Coenzyme Q10		*
Vitamin B3		*
Relora® (U.S. Patent 6,582,735)		*
Glutathione		*
Vitamin B2		*
Zinc (as zinc amino acid chelate)		*
* Proprietary Blend **Daily Value not established.		

The objective of this study was to evaluate the effect of MFS Plus on sperms concentration, motility and morphology in men with oligo and/or asthenozoospermia in sample of Iraqi infertile males.

Methods:

This comparative clinical trial study was conducted at High Institute of Infertility Diagnosis and Assisted Reproductive Technologies during the period from July 2015 till February 2017. Subjects involved were male partner of infertile couples who had history of having free unprotected regular intercourse for at least 1 year without history of previous pregnancy or abortion.

History taking and medical examination of the genital area was done and there was exclusion of subjects with history of chronic medical disease, or previous surgery, or trauma to genital organs.

With the approval of the Ethical Committee of the Institute, and verbal consent from each patient, a semen sample was taken from each of them (under condition that he had sexual abstinence for at least 48 hours and up to 7 days) and each subject was given instructions concerning the way of collection of the semen sample by masturbation and ejaculated into a clean, wide-mouthed plastic petridish, confirmed to be non-toxic for spermatozoa.

A semen analysis was done by highly qualified experienced staff of the semen analysis laboratory of the institute whom followed the rules and criteria of WHO 2010 (9).

According to the results of semen analysis, subjects involved were those who had one or more of the following criteria

- Oligospermia means low sperm count (< 15 million per mL of ejaculate)
- Asthenozoospermia means decreased sperm motility ($\leq 40\%$ of the sperm are motile)
- Teratozoospermia means (% of sperm with normal morphology < 4%).

At the study onset, subjects were ran-

domly divided into two groups:

Group A: patients took AMS® (America Medic & Science) MFS Plus supplement as two capsules twice daily for three months.

Group B patients took vitamin E capsule 400 mg; one capsule three times daily) for the same period.

Ninety-five infertile men were involved in the study, but only eighty-one completed the course of treatment, 48 subjects in group A, age ranging from 23 years to 48 years and 33 subjects in group B age ranging from 21 years to 53 years.

A second semen analysis was done after three months for each subject in both groups to show the effect of both types of treatment on semen quality.

Statistical analysis:

Data were presented as mean $\pm$ standard deviation and comparison between pre-and after treatment in each group were done using paired t test. P value < 0.05 was considered significant. Microsoft excel 2016 were used as a software to do the statistics.

Results:

There was no significant difference in the age between two groups; the mean $\pm$ SD age of group A (taking MFS plus) was 34.35 ± 7.15 years, while that of group B (taking placebo) was 32.58 ± 8.35 years, P value = 0.323 (Table 1).

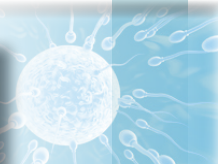


Table 1. Age distribution in both study groups

Age (yr)	Group A N=48	Group B N=33	P value
mean±SD	34.35±7.15	32.58±8.35	0.323
Median	35	32	
Range	23-48	21-53	

The effect of MFS Plus treatment has been illustrated in table 2. The most significant change were in increments of sperms progressive motility % (14.0 ± 11.41 vs 29.35 ± 15.61 , p value < 0.001), also in highly significant decrease in immotile sperms % (60.15 ± 19.3 vs 41.52 ± 18.18 , p value < 0.001). Moreover, there was significant increase in sperm concentration and percentage of normal sperm morphology (p value = 0.027, 0.019 respectively). However, no significant change was observed in semen volume and percentage of non-progressive motility.

Whereas there were no significant changes in any of semen analysis parameters in group B, as shown in table 3.

Table 2. Comparison of semen analysis parameters in group A before and after 3 months of taking MFS Plus by paired ttest

Parameter	Before mean±SD	After mean±SD	P value
Volume (ml)	2.25±1.15	2.2±0.93	0.404
Sperm conc. (no./ml)	29.31±25.04	37.95±17.62	0.027
Progressive motile sperm %	14.0±11.41	29.35±15.61	< 0.001
Non-progressive motile sperms %	25.88±13.63	29.21±11.74	0.101
Immotile sperms %	60.15±19.3	41.52±18.18	< 0.001
Normal morphology %	28.75±21.35	37.63±20.03	0.019

Table 3. Comparison of semen analysis parameters in group B before and after 3 months of taking placebo by paired ttest

Parameter	Before mean±SD	After mean±SD	P value
Volume (ml)	2.23±1.04	2.18±1.79	0.450
Sperm conc. (no./ml)	22.61±16.82	23.64±19.54	0.410
Progressive motile sperm %	13.88±11.29	10.73±9.41	0.111
Non-progressive motile sperms %	23.03±10.66	23.27±12.62	0.467
Immotile sperms %	63.09±18.44	65.0±18.67	0.339
Normal morphology %	18.03±13.69	17.64±11.56	0.450

Figure 2 shows how many times increment in semen parameters in group A after three months treatment with MFS Plus in comparison to group B (treated with placebo). It illustrates that the progressive motility has increased six times than that before treatment. Also, non-progressive motility has increased 3x, morphology more than 2.5x, concentration 2x. while there was decrease in immotile sperms and non-significant change in semen volume.

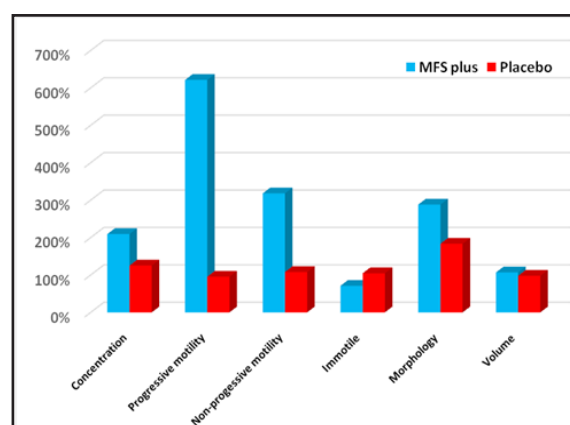


Figure (2): Comparison of percentage of improvement in semen parameters in both groups after treatment with MFS plus and placebo

Discussion:

Increased levels of reactive oxygen species in the reproductive tract, and their effect on spermatozoa has been long attributed to male subfertility and abnormal semen parameters; regarding sperm concentration, motility and morphology.

Many clinical trial studies were done to investigate the beneficial use of antioxidants in the treatment of male infertility. However, still there is no strong evidence about their efficacy. Yet, a number of these studies have confirmed a valuable effect for antioxidants in reversing oxidative stress-induced sperm dysfunction specifically in patients with idiopathic male infertility.

MFS Plus formula is made of a combination of several antioxidant (which were selectively chosen as many had been already used alone or in combination with one or more other antioxidants) with precisely designated concentrations of each one of them to make an advantage of their synergistic effect on semen parameters as shown in figure (1).

The most prominent effect of MFS Plus in this study was on the progressive motility which has increased 6 times more than the initial record after using MFS plus, in comparison to placebo group which show 1.25 times increment, likewise for non-progressive motility, which increased 3 times vs 1 time in placebo group, morphology also increased but in a lesser degree 2.88 times vs 1.83 times. Concentration was also increased two times vs 1.25 in placebo group.

The results are in agreement with other studies which have studied one component or combination of some of components of MFS Plus. So, this study results were in agreement with Radigue *et al* in 1996 and Sigman *et al.* in 2006 (10,11) that showed a positive relation-

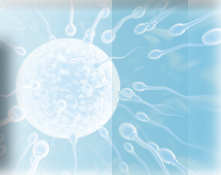
ship between L-Carnitine and sperm count, motility and morphology.

Also, Lenzi *et al.* in 2004 found a positive relationship between (12) L-Carnitine and acetyl-L-carnitine and sperm motility in infertile men. However, this relation was more significant in men with lower sperm motility at the baseline. Additionally, Akmal *et al.* study on 2006 (13), showed that vitamin C supplementation in infertile men might improve sperm count, sperm motility, and sperm morphology. Moreover, Ebisch *et al.* (14) in 2006 showed positive correlations between serum Zinc levels and sperm concentration and motility; Safarinejad and Safarinejad in 2009 (15) had found a strong correlation between the sum of the selenium and N-acetyl-cysteine concentrations, and mean sperm concentration, sperm motility and percent normal morphology.

Furthermore, this study results go with Moslemi and Tavanbakhsh findings in 2011 (16) that the combination therapy with selenium and vitamin E significantly improved sperm motility; and with Lafuente *et al.* in 2013 (17) in their meta-analysis study which showed that treatment with coenzyme Q10 led to a significant improvement in the sperm motility and density. Zhao *et al.* meta-analysis study in 2016 (18) mentioned that Zinc supplementation could significantly improve the sperm quality of infertile males.

Yamamoto *et al.* in 2017 (19) has shown that lycopene was significantly increased at the 12th week of the tomato juice feeding with significant increase in sperm motility but after 16 weeks.

Some studies criticize the effect of some contents of MFS Plus contents when use alone such as Ross *et al.* (20) in 2010 who found the use of combination of vitamin E and vitamin C alone did not improve sperm count



or motility but reduced sperm DNA damage. Also, Murphy *et al.* (21) in 2011 had found no correlation between folate and vitamin B12 with any of semen parameters.

The key ingredient is Relora, which is a combination of Phellodendron amurense and Magnolia officinalis, natural ingredients whose positive effects on stress levels, hormonal balance and weight loss are well-known.

By reducing weight, Relora can help fast conversion of testosterone into estrogen and it can preserve or improve sperm quality. Relora has a tremendous potential to manage stress and help you feel calmer and more serene, thus preventing these fertility issues caused by psychological (or occupational) stress (2)

This study did not involve the pregnancy rate as patients usually did not complete follow up in the institute when the pregnancy occurs, as they prefer to go to private gynecologists to follow up their pregnancies; so, no accurate record of true pregnancy rate in the study group.

The current study reached a conclusion that MFS Plus usage for three months is very beneficial for sperm motility in addition to its valuable effect on sperm concentration and morphology and it is more efficient than treatment with vitamin E alone.

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