

Male reproductive failure: how to face

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CONTEXT

Varicocele has adverse effects on spermatogenesis, many other factors negatively affecting semen quality act through decreasing energy availability by mitochondrial dysfunction and sperm are also vulnerable to reactive oxygen.

OBJECTIVE

To evaluate, utilizing a randomized double-blind placebo controlled trial, the effect of supplementation with selected naturally compounds on pregnancy rate and sperm quality. The effect was evaluated in subjects with oligo or asthenoteratozoospermia, as well as with or without varicocele.

METHODS – PATIENTS

With a block randomization 104 patients were enrolled: 52 had grade I-III varicocele and 52 were not affected. Patients belonging to these 2 groups were further divided in two groups consisting of the supplementation arm and the placebo arm.

INTERVENTIONS – MAIN OUTCOME MEASURES

The supplementation formulation consisted of 1g of L-carnitine, 725mg of fumarate, 500mg of acetyl-L-carnitine, 1g of fructose, 50mg of citric acid, 50mcg of selenium, 20mg of coenzyme Q10, 90mg of vitamin C, 10mg of zinc, 200mcg of folic acid and 1.5mcg of vitamin B12.

Subjects received supplement or placebo (two sachets daily) according to the randomization schedule and were instructed of the method of use. One evaluation of a spermiogram was carried out at the beginning of treatment (V1). At the end of the 6-month treatment (V2), a consecutive spermiogram was collected.

RESULTS

Twelve pregnancies occurred during follow-up time: 10 in supplementation group (9 non-varicocele and 1 varicocele) and 2 in placebo group (1 non-varicocele and 1 varicocele). One spontaneous abortion was reported in placebo arm.

Mean changes of number of sperm (106 x mL) after treatment were 1.7 in the placebo group and 9.8 in the supplemented group ($p=0.0186$). Mean changes of sperm concentration (106 x mL) after treatment were 13.0 in the placebo group and 46.9 in the supplemented group ($p=0.0117$). Mean changes of progressive motility of sperm (%) were 1.7 in the placebo group and 5.9 in the supplement group ($p=0.0088$). Mean changes of total motility of sperm (%) were 1.6 in the placebo group and 7.3 in the supplement group ($p=0.0120$).

CONCLUSIONS

Oxidative stress is a cause of male infertility with significant negative effect on semen parameters and

varicocele is an additional cause of poor sperm quality. The use of carnitines and other functional substances is an efficacious strategy to handle male infertility.

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