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Carnitine therapy promising in idiopathic azoospermia

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Placebo-controlled evaluation of carnitine therapy in men with abnormal sperm function and kinetics.

Combined treatment L-carnitine and L-acetylcarnitine markedly improves sperm kinetics in men with idiopathic azoospermia, results of controlled clinical trial suggest.

There is strong evidence that L-carnitine plays a central role in sperm cell metabolism, so Giancarlo Balercia and coworkers evaluated the therapy, alone or in combination with a related substance, L-acetylcarnitine, in infertile men.

Study subjects were 59 men aged 20-40 years with primary infertility. Baseline selection criteria included sperm concentration >20 106/ml, sperm forward motility <50%, and normal sperm morphology >30%.

Men were randomly assigned to one of four treatment groups: L-carnitine 3 g/day; L-acetylcarnitine 3 g/day; L-carnitine 2 g/day plus L-acetylcarnitine 1 g/day; or placebo.

After 6 months of therapy, sperm cell motility was significantly increased over baseline values in men assigned to L-carnitine alone or in combination with L-acetylcarnitine.

Combination therapy was also associated with a significant improvement in straight progressive velocity, and an increased total oxyradical scavenging capacity of the semen toward hydroxyl and peroxyl radicals.

Furthermore, patients with lower baseline values of motility and total oxyradical scavenging capacity of the seminal fluid had a significantly higher probability of responding to therapy.

The authors conclude that long-term carnitine therapy is effective in improving sperm function and fertilization capacity and merits further investigation.