Abstract

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Effect of L-carnitine and/or L-acetyl-carnitine in nutrition treatment for male infertility: a systematic review.

Zhou X, Liu F, Zhai S.

Department of Pharmacy, Peking University Third Hospital, Beijing, China 100083.

OBJECTIVE: The aim of this systematic review was to quantify the efficacy of L-carnitine (LC) and/or L-acetyl-carnitine (LAC) in nutrition treatment for male infertility according to present clinical evidence.

METHODS: Biomedical databases were searched to collect related clinical trials and nine relevant randomized controlled trials (RCTs) were included. The quality of the RCTs was assessed based on their performance in randomization, blinding, and allocation concealment.

RESULTS: The meta-analysis compared LC and /or LAC therapy to placebo treatment found significant improvement in pregnancy rate (OR = 4.10, 95% CI (2.08, 8.08), p< 0.0001), total sperm motility (WMD = 7.43, 95% CI (1.72, 13.14), p = 0.04, forward sperm motility (WMD = 11.83, 95% CI (0.49, 23.16), p = 0.04) and atypical sperm cell (WMD = -5.72, 95% CI (-7.89, -3.56), p< 0.00001). However, no significant difference was found in the sperm concentration (WMD = 5.69, 95% CI (-4.47, 15.84), p = 0.27) and semen volume (WMD = 0.28, 95% CI (-0.02, 0.58), p = 0.07).

CONCLUSION: In conclusion, the administration of LC and/or LAC may be effective in improving pregnancy rate and sperm kinetic features in patients affected by male infertility. However, the exact efficacy of carnitines on male infertility needs to be confirmed by further investigations.

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