Q10 co-enzyme effect on fetus implantation in ART cycles

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Background

Infertility is a common condition that affects many couples. Although current cutting-edge therapeutic methods have been found promising in this regard, their success still is not sufficiently high. Accordingly, researchers are working to develop new methods to augment the likelihood of successful results of Assisted Reproductive Technology (ART). Recently, coenzyme Q10 has been recognized an important and influential factor in the process of reproduction and some scarce studies have been along favorable results in this regard. This study aims to examine the effect of oral administration of coenzyme Q10 on embryo implantation in ART cycles.

Methods & Materials

In this randomized, placebo-controlled clinical trial, a total of 128 infertile females who were candidates for ART were randomized in two groups receiving either a daily capsule of coenzyme Q10 by the commencement of gonadotropin through to pregnancy test result (case group, 64 patients), or placebo (control group, 64 patients). Finally, oocyte count, fertilization rate, embryo count, quality of embryos, transferred embryo count, implantation rate and pregnancy rate were compared between the two groups.

Results

The mean age of the patients was 32.77±6.01 years (20-41) in the case group and 32.45±5.93 years (20-42) in the case group, with no significant difference between the two groups (p=0.77). In comparison between the case and control groups, despite better results in the case group, no significant difference was

found in terms of oocyte count (10.47±7.16 and 9.38±7.52, respectively; p=0.40), fertilization rate (66.88±16.08 % and 66.73±21.50 %, respectively; p=0.96), embryo count (7.03±4.78 and 5.84±4.85, respectively; p=0.17), quality of embryos (71.9% grade I and 28.1% grade II in cases, 68.8% grade I and 31.3% grade II in controls; p=0.70) transferred embryo count (10.9% one, 56.3% two-three and 32.8% more than three in cases, 14% one, 56.3% two-three and 29.7% more than three in controls; p=0.84), implantation rate (8.39±12.73 % and 7.22±12.80 %, respectively; p=0.60), and pregnancy rate (34.4% and 26.6%, respectively; p=0.34).

Conclusion

Although using coenzyme Q10, in comparison with placebo, was along with better results in terms of outcome variables of ART, the difference was statistically insignificant possibly because of a small sample size and short duration of the intervention.

Keywords: *ART, Coenzyme Q10, Implantation.*