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Poster Presentations

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L-carnitine reduces inflammation and oxidative stress in mouse ovarian tissue following autotransplantation

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Background: Transplantation of ovarian tissue is a fertility restoration technique in patients undergoing chemotherapy and radiotherapy. A major issue associated with ovarian transplantation is ischemia/reperfusion injury that leads to depletion and apoptosis of follicles. L-carnitine has antioxidant and anti-inflammation properties and can therefore be used to reduce ischemic damages.

Objective: The aim of this study was to investigate the effect of L-carnitine injection on transplanted mouse ovarian tissue.

Materials and Methods: The Naval Medical Research Institute (NMRI) mice at the age of 4-5 weeks, were divided randomly into groups of: Control, autograft and autograft + L-carnitine (200 mg/kg daily intraperitoneal injections). Seven days post ovary autografting, serum levels of Malondialdehyde (MDA), total antioxidant capacity, tumor necrosis factor alpha (TNF- α), interleukin (IL)-6 and IL-10 were measured. Data were analyzed using one-way analysis of variance (ANOVA) and Tukey test, and the means were considered significantly different at $p < 0.05$.

Results: A significant increase was found in the serum level of IL-6, TNF- α and MDA in the autograft group compared to the control counterpart whereas the mentioned parameters reduced significantly in the autograft+L-carnitine group. The Total antioxidant capacity and the serum level of IL-10 also revealed a significant decrease in the autograft group when compared to the control while they significantly increased in the autograft+L-carnitine group.

Conclusion: L-carnitine could reduce oxidative stress and inflammation following mouse ovarian tissue transplantation.

Key words: Ovary transplantation, L-Carnitine, Ischemia-reperfusion, Inflammation.