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Poster Presentations

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Alpha-lipoic acid reduces inflammation in the mouse ovarian tissue following transplantation

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Background: Ovarian tissue transplantation can restore fertility in cancerous patients. Ischemia-reperfusion injury and inflammation are major restrictions of ovarian tissue transplantation. Alpha-lipoic acid (ALA), as a potent anti-inflammatory and antioxidant agent, is capable of scavenging free radicals.

Objective: We aimed to evaluate the effect of ALA on the serum level of inflammatory factors such as interleukin6, 10 (IL6,10) and Tumor necrosis factor- α (TNF- α) following mouse ovarian tissue transplantation.

Materials and Methods: 24 Mice were divided into: control, autograft + saline (whole ovarian tissue transplanted in the gluteus superficialis muscle,

receiving intraperitoneal injections of saline), autograft + ALA (receiving 100 mg/kg" intraperitoneal injections of ALA, 30 minutes before transplantation). 7 days after ovary transplantation, serum concentrations of IL-6, IL-10 and TNF- α were assayed. Data were analyzed using one-way ANOVA and Tuckey's test and the means were considered significantly different at p-value < 0.05.

Results: Serum concentrations of TNF- α and IL-6 in the autograft group increased significantly compared to the control, while it showed a significant reduction in the autograft + ALA group compared to the autograft group. Moreover, the serum level of IL-10 was significantly lower in the autograft group when compared to the control counterpart. Whereas it showed a significant increase in the autograft + ALA group compared to the autograft group (p < 0.05).

Conclusion: ALA can decrease inflammation through its antioxidant effects, therefore can prevent ischemia-reperfusion induced damages and improve the function of the grafted ovary.

Key words: Ovarian tissue transplantation, Alpha-lipoic acid, Ischemia-reperfusion, Inflammation, Free radicals.