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Poster Presentations

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The effect of Alpha-lipoic acid on oxidative stress in mouse transplanted ovarian tissue

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Background: Although ovarian tissue transplantation is used to preserve fertility in young women undergoing chemotherapy, but due to the occurrence of ischemia-reperfusion injury and oxidative stress, ovarian function is disturbed and large amounts of follicles are lost. Alpha-lipoic acid (ALA) is a strong free radical scavenger used in the prevention of oxidative stress and cellular damage.

Objective: We aimed to investigate the effect of ALA on the serum level of malondialdehyde (MDA) and total antioxidant capacity (TAC) following mouse ovarian tissue transplantation.

Materials and Methods: 24 mice were randomly divided into: control, autograft (ovarian tissue

transplanted to the gluteus superficialis muscle) and autograft + ALA (100 mg/kg intraperitoneal injections of ALA 30minutes prior to transplantation). Serum concentrations of MDA and TAC were measured 7 days after ovary transplantation. Data were analyzed using one-way ANOVA and Tuckey's test and the means were considered significantly different at p-value < 0.05.

Results: The MDA level in the autograft group significantly increased in compare to the control, while it showed a significant decrease in the autograft + ALA group compared to the autograft group ($p < 0.05$). Moreover, the serum level of TAC decreased significantly in the autograft group compared to the control counterpart, whereas it increased significantly in the autograft + ALA group compared to the autograft group ($p < 0.05$).

Conclusion: ALA can reduce oxidative stress and cell damages following ovarian tissue transplantation which can improve the function of the grafted ovary.

Key words: Ovarian tissue transplantation, Alpha-lipoic acid, Oxidative stress.