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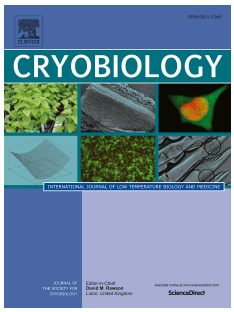

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Effects of vitrification and transplantation on follicular development and expression of EphrinB1 and PDGFA in mouse ovaries

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Abstract

The aim of this study was to assess the follicular development and the patterns of EphrinB1 and PDGFA immunostaining in vitrified mouse ovarian tissue (OT) with and without transplantation. Histological evaluation was performed on fresh and vitrified OTs, whether transplanted or not. RT-PCR was performed on fresh and vitrified ovarian samples (OSs) and vitrified OS graft. Vitrification alone did not significantly reduce the normal primordial, primary, and secondary follicles except antral ones ($p>0.05$). However, transplantation decreased all the follicle types. The EphrinB1 immunoexpression showed high intensity in all follicular types in vitrified OT and the significant increased was detected in secondary and antral follicles ($p<0.05$). PDGFA protein immunoexpression of primordial and primary follicles was decreased in vitrified OT ($p<0.05$). However, the lowest immunoexpression of EphrinB1 and PDGFA was detected after transplantation ($p<0.05$). The levels of e*phrinb1* and *pdgfa* mRNA expressions in vitrified OS and vitrified OS grafts were found as comparable to the fresh OS. In conclusion, vitrification has no detrimental effect on the follicles at the different developmental stages, majority of ovarian follicular loss takes place after transplantation rather than vitrification. Overall, vitrification and grafting do not change the *ephrinb1* and *pdgfa* gene expressions. In addition, EphrinB1 and PDGFA are expressed during different stages of folliculogenesis in a different manner in fresh, vitrified, or grafted