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Poster Presentations

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Effects of plasma rich in growth factors treatment in neonate mouse testicular organ culture

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Background: One of the major causes of infertility is the destruction of germ cells in children caused by chemotherapy and radiotherapy. Therefore, sustaining fertility is very critical with respect to patients under such treatments.
Objective: Therefore, developing a proper culture system in order to sustain fertility by inducing in-vitro spermatogenesis in mouse testicular germ cells is of high priority. In the present study, due to the effectiveness of plasma rich in growth factors (PRGF), it was used as a serum in the culture medium of testicular tissue of neonatal mice and then evaluated correspondingly.
Materials and Methods: In this study, mouse testicular tissue fragments were cultured on agar by gas-liquid interphase method lasting for a duration of two wk. Also, PRGF was prepared from a platelet bag and three groups with concentrations of 5, 10 and 20% were selected to find the best-optimized dosage of PRGF in culture medium. Moreover, KSR was used as a serum for the control group. Finally, the obtained samples were examined morphologically and morphometrically which then were analyzed by SPSS software using ANOVA and Tukey tests.
Results: Morphological and morphometric findings revealed that the diameter of the seminiferous tubules of testicular tissues in the culture medium with 5% the PRGF was larger than that of other concentrations ($p < 0.05$). The tissue structure of the tubules was better preserved at this concentration and the number of spermatogonium cells in each tubule was more than that of other groups ($p < 0.05$). Besides, at this concentration, the volume of testicular tissues was shown to be higher than other concentrations. In the control group, i.e. KSR, the diameter of the tubules was larger than what we obtained in the case of the PRGF group with a concentration of 5% and the structure of the tubules was better preserved ($p < 0.05$). Similarly, the number of spermatogonium cells were higher than the PRGF group with a concentration of 5% ($p < 0.05$). Also, the tissue volume was higher than the PRGF group with a concentration of 5%.
Conclusion: Concentration of 5% PRGF can better preserve seminiferous tubules and their cells and tissue volume. However, KSR can better maintain the structure of tubules and their cells and tissue volume compared to 5% PRGF.
Key words: *Testicular organ culture, PRGF, Spermatogenesis.*