

Effect of donor cells concentration on colonization of human spermatogonial stem cells in recipient mouse testes.

ABSTRACT

Exogenesis (cross-species) germ cell transplantation provides an opportunity to investigate fundamental aspects of spermatogenesis. In this study, testis biopsies of patients with maturation arrest of spermatogenesis during a one year ago were first minced mechanically into small pieces and then Spermatogonial Stem Cells (SSCs) and Sertoli cells isolated by the two- step enzymatic digestion, were plated and grown on DSA-Lectin coated dishes in Dulbecco's Modified Eagle's Medium (DMEM) containing 10% fetal calf serum. Transplantation of human spermatogonial cells into mouse recipient testis was performed on day 7 (before colony formation) and 2 weeks after culturing (colony formation). The effects of different concentrations of spermatogonial cell on quantity of transplantation and percent of colonized seminiferous tubules were assayed during 8 weeks after transplantation. The result showed that SSCs can be observed on the basement membrane of the seminiferous tubules in place of spermatogonial stem cells and proliferation occurs about 4 weeks after transplantation. The difference in donor cells concentration had more effect on colonization of mouse recipient testis ($p<0.05$). It will be an alternative approach for the repopulation of infertile seminiferous tubules and preservation of fertility, in the future

Keyword: Donor cells concentration; Spermatogonia; Stem cells; Transplantation.