

## 9<sup>th</sup> Yazd International Congress and Student Award on Reproductive Medicine with 4<sup>th</sup> Congress of Reproductive Genetics

### Poster Presentations

#### P-10

#### Cryoprotective effect of pentoxifylline on spermatogonial stem cell during transplantation into azoospermic torsion mouse model

Malekzadeh M, Rastegar T.

Department of Anatomy, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran.

Email: trastegar2002@gmail.com

**Background:** Preserving the spermatogonial stem cells (SSCs) in a long periods of time during the treatment of male infertility using stem cell banking systems and transplantation is an important issue.

**Objective:** This study was conducted to develop an optimal cryopreservation protocol for SSCs using 10 mM pentoxifylline (PTX) as an antioxidant in basal freezing medium.

**Materials and Methods:** Testicular torsion - a mouse model for long-term infertility- was used to transplant fresh SSCs (n = 6), fresh SSCs treated PTX (n = 6),

cryopreserved SSCs with basal freezing medium (n = 6) and cryopreserved SSCs treated PTX (n = 6). 8 wk after transplantation, samples were assessed for proliferation (through evaluation of MVH and ID4 markers) and differentiation (via evaluation of c-Kit and SCP3, Tnp1, Tnp2, and Prm1 markers).

**Results:** Morphological and flow cytometry results showed that the SSCs were the population of cells able to form colonies and to express ID4,  $\alpha 6$ -integrin and  $\beta 1$ -integrin markers, respectively. We found positive influence from PTX on proliferative and differentiative markers in SSCs transplanted to azoospermic mice.

**Conclusion:** In the recipient testis, donor SSCs formed normal spermatogenic colonies and sperm. These data indicate that adding the PTX is an effective way to efficiently cryopreserve germ cells enriched for SSCs in cryopreservation, and this procedure could become an efficient method to restore fertility in a clinical setup, but more studies are needed to ensure its safety in the long term.

**Key words:** Male infertility, Testicular torsion, Spermatogonial stem cells, Transplantation, Pentoxifyllin.