Title: Association of sperm chromatin status with early pregnancy loss and high order pregnancies after ICSI
Objective: Sperm chromatin may play a role in fertilization process and embryo development. ICSI is a gold standard for severe male factor infertility. However it may result in multiple pregnancies as well as an increase in early pregnancy loss after embryo transfer. The aim of our study was to evaluate sperm chromatin status in infertile couples undergoing ICSI for male factor infertility with high order pregnancies and early pregnancy loss.

Design: Prospective controlled study.

Materials and Methods: Semen samples were collected from 42 infertile men with no female factor infertility. Routine semen analysis was done according to the WHO guidelines. An aliquot of semen was used for ICSI procedure. Pregnancy test was done after 2 week from embryos transfer to the female partner. For positive pregnancy test; ultra-sonographic assessment for detection of intrauterine sacs was done after 3 weeks and repeated again after any signs of vaginal bleeding to detect early pregnancy loss.

Results: High order multiple pregnancies group showed significantly lower level of percentage of sub-haploid cells and significantly higher levels of haploid cells compared to the singleton pregnancy group. Early pregnancy loss group showed significantly higher incidence of sub-haploid cells and significantly lower number of haploid cells compared to no early pregnancy loss group. Aniline blue staining failed to show any significant differences in early pregnancy loss or high order multiple pregnancies.

Conclusions: Increased sperm chromatin fragmentation can cause early pregnancy loss following ICSI. Multiple pregnancies are associated with spermatozoa containing superior condensed chromatin.

Support: None