Title: Correlation between sperm DNA damage, stage of endometriosis and the duration of infertility
Objective: Infertility in patients with endometriosis may be due to alterations of oocyte quality, implantation failure of the fertilized embryo as well as anatomic distortions. Another mechanism for reduced fertility in these patients may be related to the lipid peroxidation of sperm membrane due to exposure to oxidative stress in the peritoneal fluid. The objective of this study was to examine the correlation of sperm DNA damage with 1) the stage of endometriosis, and 2) duration of infertility.

Design: Prospective study

Materials and Methods: Semen samples were collected from 22 normal healthy donors after 2 to 3 days of sexual abstinence. All of the donors had normal semen parameters according to the World Health Organization guidelines (WHO, 1999). Each donor was randomly matched to one of 22 endometriosis patients with varying stages of disease. The sperm underwent density-gradient centrifugation followed by incubation with the peritoneal fluid of the endometriosis patients for 1.5, 4 and 24 hours. Sperm DNA fragmentation was then assessed by means of the TUNEL assay. Sperm DNA fragmentation was correlated with the stage of the endometriosis as well as the duration of infertility.

Results: Sperm DNA damage showed significant association with both the stage of endometriosis and duration of infertility (see Table).

Conclusions: Sperm DNA damage shows positive correlation with the stage of endometriosis as well as with the duration of infertility. This may explain poor fertility seen in these patients.

Support: None