DNA fragmentation of the spermatozoa incubated with peritoneal fluid of patients with endometriosis and the correlation with stage of endometriosis and reproductive outcome.

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Objective: Despite improvement in diagnosis and treatment of endometriosis, the problem of endometriosis related infertility is unclear. Evidence showes that infertility in patients with endometriosis may be due to alterations of oocyte quality, implantation failure of the fertilized embryo or due to anatomical distortions. The objective of this study was to examine the correlation of DNA damage in the spermatozoa coincubated with peritoneal fluid with the stage of the disease and the reproductive outcome of patients with endometriosis.

Design: Prospective controlled study.

Materials and Methods: Semen samples collected from 11 normal healthy volunteers were processed by density gradient separation. Each sample was divided into 4 aliquots: group 1: control (diluted with bovine serum albumin (BSA 10%) and human tubal fluid media (HTF) (1:1 vol./vol)); groups 2 - 4: spermatozoa + peritoneal fluid. Samples were coincubated for 1.5, 4 and 24 h. DNA fragmentation of the sperm was assessed using terminal deoxynucleotidyl transferase (TdT)-mediated dUTP nick end labeling (TUNEL). Patients’ medical charts were reviewed to determine the stage of the disease and the reproductive outcome and the results correlated with extent of spermatozoal DNA damage.

Results: Stage of endometriosis correlated with the level of DNA fragmentation in the spermatozoa (Figure). DNA damage showed no correlation with the reproductive outcome of the disease.

Conclusion: The stage of endometriosis is related with the degree of sperm DNA damage. However it does not correlate with the reproductive outcome in these patients.
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