Effects of pentoxifylline and platelet activating factor on sperm DNA damage.



Abstract:

OBJECTIVE: Pentoxifylline and platelet-activating factor (PAF) have been used to increase sperm motility in embryology laboratories. In the present study, we aimed to investigate whether these agents pose sperm DNA damage using DNA sperm chromatin dispersion (SCD) assay.

STUDY DESIGN: Following application of pentoxifylline and PAF, sperm samples of 50 individuals with different sperm parameters were compared to baseline in terms of DNA damage using SCD assay. Furthermore, the relationship between DNA damage and sperm parameters in predicting DNA damage was assessed.

RESULTS AND CONCLUSIONS: Significant increase in DNA damage was observed following application of PAF and pentoxifylline. Furthermore, DNA damage was significantly increased with application of pentoxifylline compared to PAF. Sperm motility was observed to be a statistically significant indicator in predicting alterations in DNA damage in baseline and subsequent to application of PAF and pentoxifylline independent of sperm concentration and morphology. Increased DNA damage was observed in both groups following application of pentoxifylline and PAF. Furthermore, the increase in DNA damage was higher in samples treated with pentoxifylline compared to samples treated with PAF. Thus, PAF seems to be more innocent in choosing viable sperm cells and in achieving sperm motility in the in vitro fertilization laboratory.

Mohamed Saber, Senior Embryologist and PGD Specialist, Master In Experimental Embryology from Zoology Department of Science, Tanta University, Egypt. Director of AlEstesharein IVF center, Tanta, Egypt. Assessed research in many papers in reputed journals.

Mohamed Saber,

Embryologist and PGD Specialist

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002-0106-418-9198

Prof_ivf@yahoo.com