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TITLE

SPERM DNA FRAGMENTATION INFLUENCE ON IVF OUTCOMES

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ABSTRACT

There are some reports proposing that sperm DNA damage has a negative influence on IVF outcomes such as fertilization, embryo development and pregnancy rates. But there are studies suggested no influence.

So the aim of this study was to investigate the effect of sperm DNA fragmentation on IVF outcome.

Semen samples were collected from 65 males from infertile couples: 29 undergoing IVF and 36 undergoing ICSI. Sperm DNA fragmentation rate was assessed using TUNEL assay. Approximately 2000 cells were counted for each patient, and the percentage of spermatozoa with fragmented DNA was calculated. According to ART protocols we evaluated the following parameters: the efficiency of fertilization, embryo quality and clinical pregnancy.

Sperm DNA fragmentation rate negative correlated to the efficiency of fertilization in both groups: undergoing IVF (r=-0,35; p=0,05) and undergoing ICSI (r=-0,34; p=0,04). Total correlation coefficient was r=-0,33 (p=0,01). Fertilization protocols were divided into two groups: fertilization rate ?70% and >70%. Sperm DNA fragmentation rate were significantly higher in the first group - 14,45±14,89, then in the second - 7,47±5,74 (p=0,02).

DNA fragmentation was not associated with embryo quality when all cycles were considered (r=0,03; p=0,82) and when we divided groups according to the method of fertilization (ICSI: r=-0,14; p=0,42; IVF: r=0,09; p=0,67). Between groups formed according to embryo quality (<50% and ?50%, respectively) we didn't find any significance (10,76±9,83 vs. 13,57±11,93; p=0,22).

There was no difference in the percentage of sperm DNA fragmentation between groups achieved clinical pregnancy (n=16) and not (n=62) (12,27±7,91 vs. 10,90±14,12; p>0,05).

So sperm DNA fragmentation has negative effect on fertilization rate, but not embryo quality. Clinical pregnancy seems to be independent of sperm DNA fragmentation.

INSTITUTE

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