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Award Winners

A-3

Does sperm DNA fragmentation have negative impact on embryo morphology and morphokinetics in IVF program?

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Background: Evaluation of sperm DNA integrity may predict the in vitro fertilization (IVF) outcomes.

Objective: The aim was to evaluate the relationship between the sperm DNA fragmentation (sDNAf) with embryo morphology and morphokinetic using time-laps monitoring and to select the best time points for normalization in IVF setting.

Materials and Methods: After evaluating the fertilization and pronuclei scoring, 328 normally fertilized oocytes were assessed to time of pronuclei fading(tPNf), time of 2 to 8 discrete cells (t2-t8) and abnormal cleavage patterns, such as multinucleation, direct cleavage, reverse cleavage and fragmentation. Sperm chromatin dispersion (SCD) assay was used for assessment of prepared sperm chromatin status. SCD was categorized into 4 groups of < 6.5, 6.5-10.7, 10.7-20.1 and > 20.1.

Results: Significant differences were found in t6 ($p = 0.012$), t7 ($p = 0.045$), t8 ($p = 0.013$) and s1 ($p = 0.001$) between 4 SCD groups. When, morphokinetic variables were normalized to tPNf, this difference was observed in t2 ($p = 0.003$) and t6 ($p = 0.017$). Subsequently, the percentage of top quality embryos and Z1 scoring were dependent to the sDNAf rate.

Conclusion: In conclusion, tPNf was the best reference time point in IVF cycles. Also, we found high sDNAf rate had no negative impact on embryo morphology and morphokinetics in conventional IVF.

Key words: *In vitro fertilization, Embryonic development, Time-laps monitoring.*

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