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The effects of bacterial infection on sperm DNA integrity, nuclear protamine, sperm quality and ICSI outcome

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Introduction: Infertility is a clinical and social problem. About 15% of couples cannot conceive. The male factor is associated with up to 40% of this problem, where they suffered abnormal sperm parameters according to WHO criteria (WHO, 2010). Bacteriospermia had associated with about 35% of male infertility.

Aim: The purpose of this study was to detect the effects of bacterial infection on human sperm nuclear protamines, DNA fragmentation and ICSI outcome.

Material & Methods: In this study 120 semen samples were collected from unselected male partners of couples consulting in infertility and obstetrics clinic. All the samples were screened bacteriologically according to World Health Organization guidelines as well as sperm parameters and DNA fragmentation was evaluated. The protamines P1 and P2 concentrations were quantified using acid urea acrylamide gel electrophoresis. 84 couples underwent for ICSI treatment.

Results: Out of a total number of 120 sample, 36 (30%) of them were infected with bacteria. Nine species of bacteria belonging to five genera, *Staphylococcus, Escherichia, Streptococcus, Enterococcus* and *Klebsiella*, were identified. The comparison between infected (36) and non-infected (84) samples appeared the negative impact of bacterial infection on sperm parameters and P1/P2 ratios. The percentages of P1/P2 ratio abnormality were significantly higher in infected patients. Sperm concentration, motility, progression and chromatin condensation were significantly lower in infected patients ($P<0.010$). Moreover, high DNA fragmentation with low P1 and P2 concentrations were noticed in the infected patients in comparing to the non-infected patient put no significant. Also the fertilization rate decreased significantly ($p<0.05$) with infected patients.

Conclusion: Sperm bacterial infections affects significantly sperm quality and fertilization rate in patients undergoing ICSI treatment.

Biography

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