9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Poster Presentations

P-36

Evaluation of antioxidant and anti-inflammatory effects of tannic acid on sperm survival and motility in sepsis-infected male rats

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Background: One of the problems caused by infectious diseases is the reduction of sperm count and motility. In this study, sepsis model was used to investigate the oxidative stress and inflammation in testicular and sperm structure. Since tannic acid has antioxidant and anti-inflammatory effects on various organs of the body, in this study, the effect of tannic acid on the above-mentioned indices as well as testicular and sperm function and structure were investigated.

Objective: The main aim of this study was to investigate the protective effect of tannic acid on short-term infertility due to oxidative and inflammatory conditions.

Materials and Methods: Twenty-four male Wistar rats in the weight range of 300-250 g were randomly divided into 3 groups of 8: 1) sham 2) sepsis 3) tannic acid. In the sham group, the animals were anesthetized and then underwent laparotomy, but sepsis induction was not performed in this group. In the sepsis group, the animals underwent anesthesia and laparotomy to induce sepsis, then 30-40% of the end of the cecum was double-tied with a double layer of silk suture. Two needle holes were then made in the closed cecum area with a needle number 25 to allow the infection to enter the abdominal cavity. In the tannic acid group, the animals received tannic acid at a dose of 20 mg/kg at 6, 12, and 24 hr after sepsis induction. Thirty hr after induction of sepsis, the animals were anesthetized and testis was fixed in 10% formalin for histological examinations. The end of the epididymis was used to examine sperm motility and survival.

Results: The percentage of motile sperm and the percentage of sperm survival decreased significantly in the sepsis group. The use of tannic acid significantly improved the inflammatory and oxidative status of testicular tissues as well as improving sperm parameters.

Conclusion: The results of this study showed that the reproductive system as well as the sex cells of male rats are strongly affected by the conditions created during sepsis. Tannic acid as an antioxidant and anti-inflammatory agent improves short-term infertility caused by infection.

Key words: *Short-term infertility, Sepsis, Oxidative stress, Inflammation, Tannic acid.*

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