

عنوان مقاله:

Sperm and testicular dysfunction during cecal ligation and puncture-induced sepsis in male rats and effects of tannic acid through reducing testicular oxidative stress and inflammation

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خلاصه مقاله:

Objective(s): One of the problems caused by infectious diseases is the decrease in sperm count and motility. Tannic acid is known as an anti-oxidant and anti-inflammatory agent. In this study, Cecal Ligation and Puncture (CLP) sepsis model was induced to investigate the effect of tannic acid on oxidative stress and inflammation in testicular and sperm structure and function. **Materials and Methods:** Twenty-four male Wistar rats (۲۵۰–۳۰۰ g) were randomly divided into ۳ groups of ۸: ۱) sham, ۲) sepsis, and ۳) sepsis + tannic acid (۲۰ mg/kg at ۶, ۱۲, and ۲۴ hr after sepsis induction). Thirty hours after induction of sepsis, testicular samples were collected to measure SOD activity and MDA, IL-۶, and TNF- α levels. Another part of the testis was fixed in ۱۰% formalin for histological examinations. **Results:** In the sepsis group, testicular MDA, TNF- α , and IL-۶ levels increased and SOD activity decreased compared with the sham group. In addition, the percentage of motile sperm and the survival rate of sperm decreased significantly in the sepsis group. Administration of tannic acid significantly decreased inflammatory markers (TNF- α and IL-۶) and MDA levels and increased SOD activity. Furthermore tannic acid significantly improved sperm parameters and increased sperm and animal survival rates. **Conclusion:** The results of this study showed that the reproductive system may be strongly affected by the conditions created during sepsis. Tannic acid improved reproductive dysfunction in sepsis by reducing oxidative stress and inflammation.

کلمات کلیدی:

Inflammation, Oxidative stress, Sepsis, Sperm, tannic acid, Testicular dysfunction

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