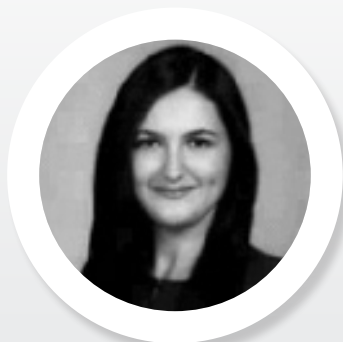


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High-fructose diet activates testicular inflammatory pathway in rat

Excess fructose intake may contribute to high prevalence of metabolic syndrome in the world. The influence high-fructose diet on male reproductive system and testicular inflammatory process has been poorly documented. In this study, we investigated the effect of dietary high-fructose on the expression of inflammatory cytokines in association with testosterone level in the testis of rats. Fructose was given to the rats as 20% solution in drinking water for 15 weeks. Plasma glucose and triglyceride levels were determined by standard enzymatic techniques. Plasma levels of insulin, free and total testosterone were measured by commercial ELISA kits. Gene expression levels of iNOS and TNF- α in the testis samples were established by real-time PCR. Protein expression levels iNOS and NF- κ B were determined by Western blot analysis. High-fructose diet elevated plasma glucose, insulin and triglyceride levels in rats. This dietary intervention decreased testicular concentration of testosterone and right testis absolute weight. Dietary fructose increased the levels of iNOS and TNF- α mRNAs as well as iNOS and NF- κ B proteins in testicular samples of rats. In this study, we demonstrated that dietary high-fructose in rats activates testicular inflammatory pathway evidenced by increased expression of TNF- α and iNOS mRNAs as well as iNOS and NF- κ B proteins. These changes could be responsible for hormonal dysfunction with low testosterone which could be relevant to male infertility.

Biography

Esra Sumlu has completed her BS degree from Gazi University, Faculty of Pharmacy in 2015 and in the same year she started her PhD in the same University at the Department of Pharmacology. She has one publication in Canadian Journal of Physiology and Pharmacology.

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