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The Protective Effects of Vitamin C and E, Against Oxidative Stress Induced by Sulfasalazine in the Testis of Male Adult Rats

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Background & Objective: Sulfasalazine (SASP) is a drug used for the treatment of inflammatory bowel diseases. SASP causes testicular damage. The aim of this study was to verify whether or not an additional supply of vitamin E or C or together prevent the toxic effect of SASP on the rat spermatogenesis.

Materials & methods: Adult male wistar rats (150-200 gr) were divided into five groups (n=8) control and four experimental groups. The experimental groups were treated with SASP (600 mg/kg/day by gavage feeding) for 14 successive days. Additionally the experimental group 2 were treated with the vitamin C (20 mg/kg/body weight/daily), the experimental group 3 received vitamins E (200 mg/kg body weight/daily) and the experimental group 4 received daily vitamin C and vitamin E 20 and 200 mg/kg body weight, respectively through the same route. At the end of the experimental period the mean body weight growth and the ratio between body and testis weight were calculated and compared with the control groups, Spermatogenesis Parameters such as, daily Sperm count, percent of motility, viability, Daily sperm production (DSP), testicular histopathology, serum testosterone levels and the level of Malondialdehyde (MDA) were evaluated. The data were analyzed using Duncan and one way variance test and the $P \leq 0.05$ were considered significant.

Results: Sperm count, percent of motility, viability and DSP were decreased in SASP treated animals. A significant decrease in the number of sertoli cells, Leydig cells, spermatogonia and spermatid were seen in the testis of SASP treated animals. The level of MDA was increased in the SASP treated group. However, Co-administration of vitamin E and C with SASP reduced the level of MDA and deleterious effects of SASP on the sperm parameters and testicular histology. Finally, the Co-administration of vitamin E and C had the most protective effects when compared with the control groups.

Conclusion: The results suggested that additional supply of vitamin E and C protect against SASP-induced oxidative stress in the rat testis.

Keywords: Sulfasalazine, Vitamin C and E, Spermatogenesis

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