

عنوان مقاله:

The therapeutic potential of amifostine on cyclophosphamide-induced testicular dysfunction in rats: An experimental study

محل انتشار:

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خلاصه مقاله:

Background: Cyclophosphamide (CP) is a well-known alkylating anticancer agent used in the treatment of various malignant and non-malignant tumors. CP may also cause a variety of adverse effects, including reproductive toxicity. Amifostine is known as a cytoprotective drug having antioxidant properties. **Objective:** To evaluate the possible beneficial effects of amifostine on testicular toxicity induced by CP in rats. **Materials and Methods:** A total of 35 Sprague-Dawley rats were used in this experimental study. The CP group animals received a single dose of 200 mg/kg CP on Day 8 by intraperitoneal injection and were left untreated for the following seven days. The two remaining groups of animals were treated with 200 mg/kg/day amifostine (AMF 200) and 400 mg/kg/day amifostine (AMF 400) for seven days prior to and following a single intraperitoneal injection of CP. Morphometrical analysis and histological examination of testicular tissue were performed. Serum testosterone, luteinizing hormone, and follicle-stimulating hormone levels were measured in serum using commercial ELISA kits. The epididymal sperm count was determined. **Results:** The tubular epithelial height in the testis was significantly higher in the AMF400 group compared to other groups ($p < 0.001$). Animals in the AMF400 group showed minimal debris in the tubules, no Sertoli cell damage, and the Johnsen scores were slightly higher in the AMF400 group. The epididymal sperm count was significantly lower in the CP-administered animals compared to the control animals and was significantly higher in the AMF200 and AMF400 groups compared to the CP group ($p = 0.006$, and $p = 0.019$ respectively). **Conclusion:** Amifostine, at a dose of 400 mg/kg, may have a protective effect on testicular damage induced by CP in rats.

کلمات کلیدی:

Amifostine, Cyclophosphamide, Rat, Testis

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