ABSTRACT

Metronidazole (MTZ) is an antibacterial and antiprotozoal drug used in the treatment of several infections, included those caused by *Helicobacter pylori*. The present study aimed to evaluate the safety of two MTZ analogues, methanosulfonate (MTZ-Ms) and iodine (MTZ-I), that showed significant antibacterial activity even to MTZ-resistant strains, in rats through acute and subacute preclinical toxicity. In acute toxicity, 2000 mg/kg of MTZ-Ms was administered and no death was observed. 300 and 2000 mg/kg doses of MTZ-I were administered and one death was observed. In subacute toxicity, no abnormal behavior was observed with MTZ and MTZ-Ms. In the group treated with MTZ-I, it was detected a reduction in the weight gain and two death. The biochemical parameters evaluated showed a significant difference without a clinical correlation. Lymphocytes, leukocytes and red blood cells increased in the groups treated with MTZ and MTZ-Ms. Apoptose was observed in the Peyer's patches and spleen. In histophatological examination it was observed hyperplasia of Peyer's patches and degeneration of the testis and ovary in the groups treated with MTZ and MTZ-Ms. In conclusion, the raise of lymphocytes and Peyer's patches suggest imunostimmulation action; MTZ-I presented a low degree of safety, the study suggests that further investigations are needed for MTZ-Ms since it presents a greater degree of safety.

Key words: metronidazole analogues, acute toxicity, subacute toxicity, imunostimmulation action.