

EFFECTS OF 2-NITROIMIDAZOLE AND LEVAMISOLE ON RADIATION RESPONSE OF MICE *

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Agents which are able to modify radiation response are of immediate practical interest to the radiotherapist. Among them, several imidazole derivatives have been claimed to increase radiation response of radioresistant hypoxic cells. The effects of two imidazole compounds, 2-nitro-1H-imidazole and L(-) 2,3,5,6-tetrahydro-6-phenylimidazole (2,1-6) thiazole (levamisole), were tested systematically in order to determine the radiomodifying behaviour in the whole organism. The drugs were administered ip 0.8 mg/0.5 ml two hours and 0.1 mg/0.1 ml one hour respectively, prior a single 9 Gy dose ^{60}Co irradiation. The 30-day survival data were recorded and qualitative and quantitative peritoneal cell analysis (macrophages, monocytes, lymphocytes, polymorphonuclear and mast cells) were performed. The results showed some radioprotective action for nitroimidazole at the whole body level (65% treated and irradiated survivors against 40% control only irradiated) and a mild sensitizer capacity for levamisole (30% against 50%). The peritoneal cell analysis showed also that radiation interfered in a differential way in the kinetics of the various peritoneal cell populations.

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