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عنوان مقاله:

Oral Administration of Vitamin C, Cimetidine and Famotidine on Micronuclei Induced by Low Dose Radiation in Mouse Bone Marrow Cells

محل انتشار:

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خلاصه مقاله:

Background: In many studies, chemicals and natural materials were tested to reduce the harmful effects of radiation. It is known that Famotidine and vitamin C reduce DNA damage.Objective: The aim of this study was to evaluate the radioprotective effect of vitamin C, Cimetidine and Famotidine on gamma-radiation-induced damage on mouse bone marrow. Methods: Six-to-seven week male NMRI mice (۲۸ g ±۳) were randomly divided into fourteen groups: control, ۲Gy irradiation, six group drugs without irradition (Famotidine, Cimetidine, vitaminC, Fam-Cim, Fam-Vit, Cim-Vit), six groups received drugs and ۲Gy radiation with a ۶۰Co |γ|-ray source at room temperature ۲۲ ± ۲ °C. The mice were killed ۴۸ hours after irradiation by cervical dislocation. Slides were prepared from bone marrow cells and stained in May-Granwald and Giemsa. Finally, the cells were counted with microscope, frequencies of polychromatic erythrocyte (PCE), normochoromatic erythrocyte (NCE) and their micronuclated cell were recorded. PCE / PCE + NCE were calculated. Results: There were significant differences of MNPCE/۱۰۰۰PCE, MNNCE/۱۰۰۰NCE and PCE/PCE+NCE among different groups with similar radiation doses (p≤۰.۰۱). Moreover, there were significant differences of MNPCE/ ۱۰۰۰PCE and PCE/PCE+NCE among different doses of radiation (p≤۰.۰۱). While considering MNNCE/۱۰۰۰NCE, there were no significant differences among silimar groups with radiation dose (p ۰.۰۵).Conclusion: Oral administration of

Famotidine, vitamin C and Cimetidine demonstrate reliable and similar radioprotective effects. Additionally, the protective effect of single use of these drugs was similar to the combination form. Thus, the oral use of combination, ۴۸ hours after irradiation cannot induce more radioprotective effect.

کلمات کلیدی:

Micronuclei, Radiation, Radioprotection, Cimetidine, Vitamin C, Famotidine

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