1. Protective action of peanut oil in rats exposed to gamma-rays

Edrees, GMF (Edrees, M. F.)\textsuperscript{1}11; El-Kholy, WM (El-Kholy, W. M.)\textsuperscript{1}11; El Habiby, EM (El Habiby, E. M.)\textsuperscript{1}11; El-Sherbiny, SA (El-Sherbiny, S. A.)\textsuperscript{1}11


E-mail Address: gamaledrees600@yahoo.com

Abstract

The present study aims to clarify the role of peanut oil as a radioprotector in male albino rats against oxidative stress and bone injury induced by A-radiation. Rats were subjected to a dose of 5Gy, over an exposure time of 133 sec, at a dose rate 3.759 rad/sec. Prior to irradiation, rats received peanut oil subcutaneously, (0.75 mL/kg) over a one month period, oil three days/week. Serum and bone mineral contents were estimated, and serum protein, cholesterol and creatinine concentrations were determined. We also investigated some enzyme activities as well as hormonal calcium control. It seems that the deleterious effects of exposure to (a) over tilde - radiation on most estimated parameters affecting Ca metabolism can be controlled to some extent by peanut oil administration prior to irradiation.

Keywords: radiation; peanut oil; calcium metabolism

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2. BLADDER DAMAGE IN MICE AFTER COMBINED TREATMENT WITH CYCLOPHOSPHAMIDE AND X-RAYS

STEWART, F (STEWART, F); EDREES, G. (EDREES,G); LUTS, A (LUTS, A)

[ 1 ] NETHERLANDS CANC INST,1066 CX AMSTERDAM,NETHERLANDS

E-mail Address: gamaledrees600@yahoo.com

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3. BLADDER DAMAGE IN MICE AFTER COMBINED TREATMENT WITH CYCLOPHOSPHAMIDE AND X-RAYS - THE INFLUENCE OF TIMING AND SEQUENCE

EDREES, G (EDREES, G) (1); LUTS, A (LUTS, A); STEWART, F (STEWART, F)(2)

(1) Zoology Department, Faculty of Science, Mansoura University, Mansoura, Egypt
(2) Fiona Stewart, Division Experimental Therapy, Department of Experimental Radiotherapy, H6, The Netherlands Cancer Institute (Antoni van Leeuwenhoekhuis), 121 Plesmanlaan, 1066 CX Amsterdam, The Netherlands.

E-mail Address: gamaledrees600@yahoo.com

Abstract

The response of the mouse bladder to single doses of cyclophosphamide (CY), X-rays, or their combination was assessed from the development of functional damage (haematuria and increased frequency of urination). For the combined treatments, a single dose of CY (100 mg · kg⁻¹) was given immediately before or at intervals of up to 9 months before irradiation, or at one week to 9 months after irradiation. Damage after X-rays alone was expressed late, with no functional changes earlier than 5 months. CY alone, by contrast caused a marked increase in urination frequency and haematuria within one week. There was subsequently partial recovery although some residual damage persisted for at least one year. CY given before or after X-rays caused an early, X-ray dose-related expression of damage. These results suggest that the drug precipitated some of the latent radiation injury. There was also a second wave of damage after the combined treatments and the response at 9–12 months was always more severe than after X-rays alone. This increased late damage could be explained in terms of additive drug and radiation toxicities. Since drug given up to 9 months before or after irradiation caused more severe bladder damage than X-rays alone, CY should be avoided in clinical situations where the bladder has been irradiated.

Keywords: Mouse bladder; Radiation; Cyclophosphamide

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