

Effect of dietary polyunsaturated fatty acids on the content and metabolism of glutathione in rat kidney

Contenido de glutation en riñon de ratas: efecto del aumento de los acidos grasos poliinsaturados dieteticos.

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The effect of dietary polyunsaturated fatty acids (PIFA) upon the content of reduced glutathione (GSH) of the kidney was studied in 32 male Wistar rats. Two equal size groups were fed diets supplemented with either 10% or 18% corn oil. Sixteen hours before death, half of each experimental group was submitted to fasting. The content of GSH and the activity of gamma glutamyl transpeptidase (GGTP) and gamma glutamyl cysteine synthetase was determined in kidney tissue. Fasting led to a reduction of GSH from 3.21 ± 0.54 to 1.25 ± 0.20 $\mu\text{mol per gm}$ in the group fed 10% PIFA. Equivalent figures for the group fed 18% PIFA were 3.49 ± 0.54 and 0.49 ± 0.08 , respectively. GGTP activity increased significantly after fasting but no differences were observed according to level of PIFA intake. The exaggerated reduction of GSH during fasting after a high PIFA intake may expose the animals to risk of cell damage induced by peroxides or other oxidating agents.