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Glutathione Peroxidase Activity and Selenium Concentration in the Hearts of Doxorubicin-Treated Rabbits

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Abstract

Doxorubicin-treated cardiotoxicity was studied in the rabbit. Rabbits given intravenous injections of 1.5 mg doxorubicin/kg body weight (3 times per week for 3 weeks) developed morphological and histological alterations in their hearts. In addition to these changes, both glutathione peroxidase activity and selenium concentration were significantly reduced in the hearts of the doxorubicin-treated rabbits. The decrease in glutathione peroxidase activity is probably related to the decrease in the concentration of selenium, since this enzyme requires selenium for activity and, furthermore, since *in vitro* studies failed to show any effect of doxorubicin on glutathione peroxidase. Although the mechanism responsible for the observed decrease in selenium is not known, an alteration in the selenium flux in the myocardial cell may account for the observation.

The results of the present studies suggest that the observed increase in lipid hydroperoxides in the hearts of doxorubicin-treated animals may be the result of a decrease in glutathione peroxidase activity.

References*

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