Abstract

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Choline-deficiency fatty liver: impaired release of hepatic triglycerides.

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OBJECTIVE AND METHODS: After intravenous injection of palmitate-1-(14)C to rats fed a choline-deficient (CD) or choline-supplemented (CS) diet for 15-18 hr, liver triglycerides became labeled very rapidly.

RESULTS: In CS, but not in CD rats, there was a considerable loss, with time, of radioactivity from liver triglycerides. At the same time, significantly less radioactivity appeared in plasma triglycerides of CD rats than of CS animals. No difference was seen in the triglyceride content of microsomes isolated from the liver of rats fed the two diets. The lower radioactivity in plasma triglycerides of CD rats was essentially due to a lower level and specific activity of very low density lipoprotein triglycerides. After intravenous injection of Triton and labeled palmitate, considerably less radioactivity accumulated in plasma triglycerides and phospholipids of CD rats than of CS animals. Post-Triton hyperphospholipidemia was also less pronounced in CD rats.

CONCLUSION: It was concluded that the fatty liver observed in CD rats results from an impaired release of hepatic triglycerides into plasma.

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