The Study on Uptakes of ^{131}I Labelled-Linoleic Acid by Intestinal Absorption Method and Lipid Fractions Method

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In 20 patients which consisted of 3 of control group, 10 of postgastrectomy group, 4 of pancreatic disease group and 3 of intestinal disease group, determination of the intestinal absorption and the uptake to the lipid fractions used ^{131}I labelled-linoleic acid was performed. Radioactivity in blood showed the most highest levels in the control group. On the ther hand, the excretion ratio in feces showed 5.4% in control group, 16.4% postgastrectomy group, 29.8% in pancreatic disease group and 21.0% in intestinal disease group.

Statistical significance was observed between in control group and in the other groups in the excretion ratio in feces.

The next problem was to investigate how changed the fatty acids in serum by the hour and how they exsisted in any types were. The serum was incubated as same as body temperature. The serum lipids were devided into 5 fractions by silic acid columns, modified as Fillerup method in 2 cases. The serum in 2 cases as normal control was tested by this method. In this result, radioactivity of each fractions was shown the same patterns. The first fraction showed the peaks. The third and fourth fractions showed the constant value untill 24 hours after incubation in 2 cases indicated the highest value at 24 hours.

The above indications suggested that the linoleic acid was well combined with cholesterol ester during 2 to 6 hours after incubation. After all, linoleic acid was combined with phospholipid easily.

In our results, we understood that the incubation method was entirely appropriate by gass-chromatographic method.

Intestinal Absorption of ^{35}S Labelled Thiamine and Its Derivative and a Basic Study of Measurement of ^{35}S Containing Materials

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Absorption of ^{35}S-thiamine and ^{35}S-dicarbethoxythiamine with specific activities of 95 μCi/mg and 20 μCi/mg, respectively, was investigated in rats dogs and man. The materials included feces, intestinal contents, urine, blood and tissue homogenate, and the instrument was a liquid-scintillation counter of Shimadzu LSG-3.

The solvent system of dioxane-nephthalen was found to be superior to others particularly in its capacity to hold aqueous solution. 15 ml of the solvent containing 3% Car-O-Sil gel was used throughout. The counting efficiency was 54.7% as determined with standard ^{35}S-lithium sulfate, at 10-1000V pulse height. Hydrogen ion gave significant quenching but the effect of alkali in the presence of proteins was negligible. Plasma and tissue homogenate could be added to the solvent with only 10-30% quenching. Feces were digested with NHO_3 and H_2O_2 and then diluted and neutralized for measurement. Precipitation procedure gave poor recovery.

B_{12} and the derivative were given in the dose of 25 mg per so and urinary excretion and blood levels were determined, as well as net absorption from 4 day fecal excretion. It was found that DCET was absorbed much