

B-40. FUNDAMENTAL STUDIES ON LINEAR SCANNING METHOD APPLIED FOR RI DIGESTION AND ABSORPTION METHOD

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For Clinical requirement of establishing an easy and precise test procedure of digestion and absorption, the linear scanning method using I-131 Triolein was investigated. We performed the test on 80 cases and studied its possibility as a clinical test.

50 and 100 Ci capsule of I-131 Triolein are used. Thyroid blocking agent of NaI solution 50 mg are given at the night before the test. The capsule is given in the morning of the test. The main test is the linear scanning at 4 and 8 hours after the intake of the capsule. Blood level and fecal excretion rate are examined at the same time for evaluating the interrelationship between them.

In linear scanning, the basis for interpretation on the result are the changes in the profile peaks of breast, epigastric, abdominal, and pelvic area. The precise interpretation is due to the result of area scanning.

We classify the rate of disorder in groups of (-), (+), (++) and (x). (x) means a disordered excretion of stomach. (-) means a normal digestion and absorption of intestine, showing a lowered peak in intestinal area and rather elevated of breast and bladder area. (+) means a disordered digestion and absorption, showing rather elevated peak of intestinal area. (++) is a exaggerated form of (+).

Interrelation between the result of linear scanning, and blood level and fecal excretion rate exists anyhow. But the blood level is influenced by so many factors, the blood level measurement seems to be very indirect method sometimes. Fecal excretion rate is rather precise, but gathering stool is very difficult in constipated and diarrhoetic cases. In linear scanning all these conditions are to be analyzed.

B-41. THE ROLE OF LYMPHATIC SYSTEM IN INTESTINAL ABSORPTION (I) PHYSIOLOGICAL STUDY IN PROTEIN ABSORPTION

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This study was performed to evaluate the role of the lymphatic system in the intestinal absorption of protein. Cannules were placed in the thoracic duct, portal vein and femoral vein in the adult dogs and ¹³¹I- and/or ¹²⁵I-labeled human albumin, ¹²⁵I-Na and/or ¹³¹I-tyrosine were administered into the stomach or femoral vein, respectively. The results are as follows:

1. The albumin is transported via lymphatic system as well as portal system.
2. Tyrosine was found in the thoracic duct lymph 3 to 4 minutes after the intragastric administration, whereas it is observed in the portal vein blood right after the administration. This suggests the lymphatic transportation of tyrosine considering the speed of the flow of the blood and lymph as well as immediate appearance of ¹²⁵I-Na in the thoracic duct lymph when administered into the stomach.
3. A portion of albumin administered into the stomach appears to be absorbed in a form of polypeptide, because less than 10% of the tyrosine administered into the stomach is found in the thoracic duct lymph and portal vein blood in a form of protein compared to the fact that about 30% of radio-active-albumin administered in the same way is found in the portal vein blood and 40 to 50% of it in the thoracic duct lymph.