

The comparative study of the pancreas imaging and P.S. test (pancreas-secration) and amylase values were performed in the chronic pancreatitis.

In general, only one imaging was faithfully showed for the pancreatic function. Although the imaging has slight low appraisal for the clinical evaluation only in the static image, still its serial

imaging lay the usefulness for the follow up study in the inflammed diseases especially in the acute and chronic pancreatitis.

More than, one problem should be expected more affinitic radiophamaceutical for pancreatic tissue.

Detection of Bacterial Deconjugation of Bile Salts Using ^{13}C -Breath Test

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^{14}C -breath test consisting of monitoring $^{14}\text{CO}_2$ in the breath after oral administration of glycine-1- ^{14}C -colate ($5\mu\text{Ci}$) has been known as a useful clinical test for the detection of bacterial deconjugation of bile salts. The use of stable isotope ^{13}C in place of ^{14}C -compounds can extend the applicability of the test.

With the purpose to validate the use of ^{13}C -compounds for the clinical breath test, animal experiments were carried out. Carbon dioxide in the exhaled breath was collected by neutralization of alkaline solution in a vial connected to the outlet of a respirator being applied to anesthetized rats. Isotope ratio of $^{13}\text{CO}_2/^{12}\text{CO}_2$ (45/44) was measured in a mass spectrometer. Direct continuous measurement of the isotope ratio was also performed using a quadrapole mass filter mass spectrometer and infrared spectrometer desinged for breath test. Radioactivity of $^{14}\text{CO}_2$ was measured in a liquid scintillation counter.

Rats were operated to form jejuno-colostomy

to induce ileal bypass and/or bacterial overgrowth in the small bowels.

Curves of $^{14}\text{CO}_2$ after oral administration of ^{13}C - and ^{14}C -glycine-cholate showed prominent peaks at 1-2 hours in rats with jejuno-colostomy. Excretion of $^{14}\text{CO}_2$ in five hours was $49.8 \pm 5.6\%$ ad. dose ($n=7$) in contrast to control rats which showed flat curves and low $^{14}\text{CO}_2$ excretion (5.5 ± 1.6 , $n=4$). Curves of $^{13}\text{CO}_2$ showed identical pattern to $^{14}\text{CO}_2$ curves. When trace dose of ^{14}C -glycine alone was administrated, $^{14}\text{CO}_2$ curves showed earlier and lower peaks than those obtained after loading dose of glycine. Our results suggest that ^{13}C -glycine-cholate can be used as clinical breath test for the detection of bacterial deconjugation of bile salt. The animal model should prove useful for the preliminary comparative studies of various ^{14}C - and ^{13}C -breath tests prior to their clinical application. Direct continuous measurement of $^{13}\text{CO}_2/^{12}\text{CO}_2$ isotope ratio enable easy access to clinical application of the test.