

which showed histological evidence of infarct and elevated ^{99m}Tc activity. Yet, there was no consistent relationship between ^{99m}Tc and ^{201}Tl activity. (3) Relationship between ^{99m}Tc -PYP activity and Ca: Ca increased in the segment which showed elevated ^{99m}Tc activity. However, there was no linear relationship between ^{99m}Tc activity and Ca.

In summary, none of these three factors appears

to be solo determinant of ^{99m}Tc -PYP distribution. It seems likely that not only the absolute value of Ca but also composition and physicochemical properties of tissue calcium is important for the accumulation of ^{99m}Tc -PYP. Further study is warranted to make better understanding of relationship between ^{99m}Tc -PYP accumulation and calcium kinetics in infarcted myocardium.

Technetium-99m: 3-Hydroxy 4-Formyl Pyridine: Glutamic Acid Complex. A New Rapid Cholescintigraphic Agent

Tatsuo MAEDA*, Hiroyuki SHIOKAWA*, Akira KONO*, Hiroshi OGAWA**

*Kyushu Cancer Center, **Daiichi Radioisotope Lab.

Scintigraphic imaging of the hepatobiliary system has been significantly improved with development of Tc-99m labelled compounds.

Tc-99m; 3-hydroxy 4-formyl pyridine (HFP): glutamic acid (G) is a non-toxic radiopharmaceutical that was found to undergo rapid biliary excretion in normal rabbits. A new Tc-99m-HFPG was prepared by heating an aqueous solution (PH 6.5–7.5) of HFP, G, and pertechnetate-99m for 15 min. at 100°C. The yield of Tc-99m-HFPG was in the order of 90–100%. The simple method may be applicable for a kit preparation.

A safety assessment in mice (20 g) was made using HFPG complex without added Tc. In the mice a single intravenous dose of 187 mg/kg was non-toxic and caused no gross behavior or pathologic changes. These doses represent a 1,000–2,000 times excess over the probable human dose in the intended diagnostic application. The biliary trees

and gallbladder were seen within 20 min. of Tc-99m-HFPG injection and by 25 min. marked accumulation of radioactivity was noted in the gallbladder and intestinal tract. While the gallbladder was clearly visualized by 15 min using Tc-99m-HIDA, 40 min: Tc-99m-pyridoxylideneglutamate (PG), 30 min: Tc-99m-pyridoxylideneisoleucine (PI). Blood clearance in the rabbits: The Tc-99m HIDA have lower blood levels than another complexes. The rabbits weighing approximately 2.5–3.0 kg were surgically prepared to allow bile samples to be collected. The cumulative per cent dose in the bile at 1 hour were 38.8% of the injected Tc-99m-HFPG, 42.2% of Tc-99m-PG, 56% of Tc-99m-HIDA, 57.8% of Tc-99m-PI.

In summary, Tc-99m-HFPG appears to be one of the suitable agent of low toxicity for the investigation of biliary tract disorder.

Effect of the Chemical Structure and Plasma Lipoprotein Binding Properties on Adrenal Accumulation of Radiohalogenated Sterols

Tadashi NOZAKI*, Kiyoshi FUKUSHI**, Toshiaki IRIE**, Teruko YAMANE**,
Nobuo FUKUDA** and Tatsuo IDO**

*Institute of Physical and Chemical Research

**National Institute of Radiological Sciences

The properties of rapid incorporation and long-term retention in adrenal make 19-iodocholesterol (CL-19-I) (Counsell et. al.) and 6 β -iodomethyl-19-norcholest-5(10)-en-3 β -ol (NCL-6-I) (Kojima

et.al.) to be successful adrenal scanning agents. We have undertaken to prepare the following radiohalogen derivatives of cholesterol and to compare their behaviours in animal body: (1) CL-19-