mia, clearance is prolonged regardless of marked splenomegalia, and so it is suggested splenic sequestration functions is decreased.

(3) In one case of chronic lymphatic leukemia clearance is shortened with marked splenomegalia, and its red survival time is also shortened.

(4) In all cases of Banti's syndrome clearance is more shortened than normal subjects, but it is suggested there is no relation between clearance and a degree of splenomegalia.

(5) As regards of relation between clearance and white blood cell count it is suggested that the shorter clearance is, the less white blood cell count is.

Measurement of Splenic Blood flow Using ^{133}Xe, ^{131}I HSA and ^{51}Cr RBC

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With washing out or dilution technique of radiotracers splenic blood flow was measured in order to investigate the relationship between its change and manifestation of portal hypertension of hypersplenism.

After the sudden injection of ^{133}Xe, ^{131}I-HSA and ^{51}Cr erythrocytes through a catheter selectively into the celiac artery, radioactivity over the spleen and the liver was continuously measured and recorded.

Radiosplenogram of ^{133}Xe was analized on semilogarithmic scale into one or sum of two exponentical components and the clearance rate was calculated.

In 7 normals this rate constant was between 0.890 and 1.647 min^{-1}.

In 8 cases with hepatic cirrhosis this value was from 0.502 to 1.520 and in 4 cases with so called Baniti's syndrome this was from 1.38 to 2.16.

This value is generally thought to reflect blood flow rate through the organ expressed as ml. per minutes per unit weight of splenic tissue. The difference among these three groups, which had been previously suspected, was not statistically significant.

In hepatic cirrhosis this value appeared to be inversely correlated with splenic volume estimated by scintigram, although this correlation did not stand the statistical analysis. Considering much expanded volume of the spleen in cases with chronic congestive splenomegaly, total blood flow must be taken significantly increased, the result which coincides with the previously reported findings.

In analysis of radiosplenogram of ^{131}I HSA and ^{51}Cr erythrocytes radioactivity of the tracers in recirculation was eliminated in following ways.

Asuming the initial circulation character to be expressed in one or sum of two exponentical components and recirculation character to become constant level 60 seconds later concering ^{131}I HSA, the former was determined and from the difference the latter was then obtained.

With the same recirculation character initial circulation character of ^{51}Cr erythrocytes

was obtained, which was disclosed to be expressed in sum of two expotential components.

Mean transit time for both radiotracers, representing the plasma and erythrocytes respectively, was calculated.

In normals the time was between 8 and 32 seconds and significant difference between both tracer was not observed.

In splenomegalic cirrhosis of the liver and "Baniti's syndrome" the time was evidently prolonged and especially so for erythrocytes, being three or four times normals and twice or more of that for the plasma.

From the results above described remarkable increase in total splenic flow as well as significant hemoconcentration and stagnation were indicated, in which phenomenon some cause and effect relationship with manifestation of portal hypertension and hypersplenism must be considered.

Studies on the Function of REC with ^{51}Cr Labelled Heat Damaged Erythrocytes in the Mice Developed Experimental Hematological Disorders

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RES function of mice which were induced bone marrow failure by chloramphenicol, splenectomy and sensitization with human gamma globulin and chlorabulin, were studied with sequestrated ^{51}Cr-labelled heat damaged erythrocytes.

ICR female mice (20 to 24 g of body weight) were used for all experiments. Heparinized iso-erythrocytes were incubated with ^{51}Cr. at 37°C for 20 minutes. These tagged erythrocytes were damaged at 49.5±0.5°C for 20 minutes, and were injected into mice tail vein.

Half disappearance time of radioactivity in blood, which is called clearance (T 1/2), was calculated in each mouce. Percent uptake of radioactivity in each organ was observed in decapitated mice on two hours after ^{51}Cr injection. Five mg of chloramphenicol was administered intraperitoneally two times daily for three consecutive days (CP three days group), or five mg of chroramphenicol was administered intraperitoneally once a day for thirty days (CP 30 days group). One point two five mg of human gamma globulin were administered intraperitoneally three times in each other day (H.G.G. group) or injected with Freund's complete adjuvant for six weeks (H.G.G. & F.C. Adj. group). Splenectomy was done to the mouse aseptically. Splenectomized mice were used for experiments after 10 days (Spx 10 days group), and 20 days (Spx 20 days group).

Normal mice were used for control in each experiment.

Normal mice showed slight changes of ^{51}Cs organ distributions during 30-120 minutes after administratioi, and showed 7 times radioactivity per unit of organ weight of spleen than that of liver. The uptake of each organ was decreased in order of liver, spleen and bone marrow in normal mice.

CP 3 days group showed normal range of clearance, decreased uptake of bone marrow, and increased uptake of liver and spleen.

CP 30 days group showed increased uptake of liver and normal range uptake of spleen and bone marrow.

Spx 10 days group showed extremely prolonged clearance (T 1/2), and increased uptake of liver and bone marrow without a compensation of spleen function. Two splenectomized mice out of four were observed prolonged clearance and two mice showed normal range of clearance following three days CP administrations. Spx 20 days group showed significantly prolonged clearance and increased bone marrow uptake. Their clearance got into a normal range, and increased liver uptake and decreased bone marrow uptake were followed after CP three days administration.

H.G.G. & F.C.Adj. group which were observed ascitic fluide and splenomegaly, showed