follows;

20μC of ^{131}I RB in 1 cc of physiological saline solution was injected into the marginal ear vein of adult male rabbit, weighing ca. 2 Kg. After the injection of ^{131}I RB, radioactivity in the liver was measured by γ-spectrometer with the lead collimator for rabbit liver measurement.

Uptake and excretion curves of ^{131}I RB of the rabbit liver consisted of two phases, the initial phases by ^{131}I RB uptake and the followed phase by excretion of ^{131}I RB as described by Lowenstein (1956).

The excretion curve consisted of the first phase curve (E_1) and the second phase curve (E_2) in any case.

The ^{131}I RB uptake curve were differentiated into three expornetial curves, uptake line (U), the second phase excretion line (E_2) and the excretion line of the difference between the first and second phase (E_1-E_2).

On the non-irradiated rabbits, the mean time of Tu, T_{E_2} and T(E_1-E_2) were 5.0, 62 and 16 minutes respectively.

The mean excretion time of the second phase T_{E_2} of liver irradiated animals was clearly prolonged after 200 R irradiation and the excretion time recovered to the normal state in 6 hours after irradiation. By 500 and 1000 R irradiation, the T_{E_2}, was markedly prolonged and returned to normal state in 24 hours after irradiation. Tu and T(E_1-E_2) were independent of the irradiation dose. The second phase excretion time (T_{E_2}) and its recover time depended on the dose irradiated.

The uptake curve (U) related to the translation of the ^{131}I RB from blood to liver and the (E_1-E_2) curve was concerned with the excretion of the ^{131}I RB from blood to the excretion systems, such as urine secretion. The second phase (E_2) of the excretion curuve showed the excretion fnction of the liver cells.

Diagnosis of the Infantile Jaundice by ^{131}I-Rose Bengal Test

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The differential diagnosis between the congenital biliary atresia and the infantile hepatitis with obstructive jaundice is perplexing only by usual laboratory diagnostic manouver.

In case of the atresia, the clear-cut differential diagnosis from the infantil hepatitis is essentially cardinal, because the delay of the diagnosis gives serious damage upon the progress of the disease.

In this report, we discussed the value of the clinical application of the ^{131}I-Rose Bengal test to the cases of the infantile jaundice admitted to Dept. of Keio Univ. Hospital.

Comparing with the other diagnostic procedures such as usual liver function test, the liver biopsy, the diagnostic operation or the clinical pictures, ^{131}I-Rose Bengal method is verified to have a most advisable diagnostic value to attain a clear-cut diagnosis.

Clinical Studies with ^{131}I-Labeled Rose Bengal in Hepatobiliary Diseases

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Besides the external counting over the liver, the disappearance curve of intravenous-