^{131}I-BSP uptake by the liver and excretion into bile duct showed marked delay at acute stage of hepatitis with jaundice, however, improvent was found at recovery from the disease.

Hepatitis without jaundice showed no delay of ^{131}I-BSP uptake and excretion even at acute stage.

^{131}I-BSP retention ratio (30 min) from the hepatitis cases with jaundice showed significant correlation with GPT value ($\gamma=0.83$), whereas no correlation was found in cases without jaundice.

Along the course of recovery both ^{131}I-BSP retention rate, GPT and jaundice index showed parallel improvent.

In one case who showed marked increase in GPT (1300) with less remarkable ^{131}I-BSP retention (12.3%) revealed rapid improvement of the disease.

In conclusion, ^{131}I-BSP clearance showed close relationship with the bilirubin level of hepatitis. This fact could be evaluated only by the introduction of ^{131}I-BSP instead of BSP colorimetry. It is suggested that ^{131}I-BSP test might be useful for the determination of prognosis of the disease.

A Clinical Experience with ^{131}I-BSP (2)
—^{131}I-BSP Test Loaded with Non-radioactive BSP—

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An external counting over the liver and the head was carried out using ^{131}I-BSP, and clearance (K) in the blood and Hepatic Uptake Index (H.U.I.) were studied, then their clinical significances were discussed in the 1st report.

However, ^{131}I-BSP contained in tracer amounts is extremely small in comparison with routine BSP (5.0 mg/kg), and probably due to this reason K volue shows very high as compared with BSP-clearance. (Ratio of the both: 1.91 ± 0.71).

In case of obvious liver disease is out of question, but each obtained value was within normal range in the mild liver disease. Hence, it is considered that ^{131}I-BSP test with ^{131}I-BSP alone is not adequate for diagnosis of patient with mild liver disease.

In this report, a dose of 5.0 mg/kg of BSP was injected previously as a hepatic loading substance, and then 40 μCi of ^{131}I-BSP was administered intravenously. And these obtained value were compared with the value of ^{131}I-BSP without use of such BSP loading.

Using four scintillation counters set on the liver, the head, the gallbladder, and the umbilicus, the recording is continued simultaneously.

K value is obtained from the radiogram of the head and blood sampling data by means of the extrapolation method.

Blood retention ratio of ^{131}I-BSP was determined according to the method of Yamada et al.

After counting ^{131}I-BSP Hepatogram H(t) and back ground curve B(t) respectively from what we call RISA-^{131}I-BSP-Hepatogram contrived in our laboratory, then H.U.I. is calculated in accordance with the following formula.

$$\text{H.U.I.} = \frac{[\text{Hepatogram H(t)} - \text{Back Ground B(t)}]}{[\text{Back Ground B(o)}]}$$

As the result, it is known that the obtained value in case of the administration of ^{131}I-BSP only is effective for diagnosis of patients with obvious liver disease, but not so ade-

quate in the mild cases. However, it has been made possible to diagnose even mild liver disease when 5.0 mg/kg of BSP was loaded before ^{131}I-BSP was administered. Moreover, it is considered exceedingly that depressing mechanism of these value obtained when BSP is loaded is due to competitive phenomenon of the both substances.

^{131}I BSP Scans for Differential Diagnosis of Jaundice

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In order to investigate the mechanism of jaundice in constitutional hyperbilirubinemia, sequential liver-abdominal scans were performed using ^{131}I BSP and ^{131}I Rose Bengal in 3 cases of Dubin-Johnsons syndrome, each case of Rotor's syndrome and Gilbert disease.

In Dubin-Johnson's syndrome, both ^{131}I BSP and ^{131}I RB were rapidly taken up by the liver. Excretion of ^{131}I BSP into intestine was markedly delayed and the dye seemed confined in the liver. On the other hand, considerable excretion of ^{131}I RB was observed 4 hours after injection.

In Rotor's syndrome delayed blood clearance of both dyes was the most characteristic feature. However the dye once taken up by the liver was rather rapidly excreted into the intestine. There is no difference between the biliary function using ^{131}I BSP and ^{131}I RB.

In Gilbert's disease sequential scans with ^{131}I BSP and ^{131}I RB showed normal biliary kinetics.

Disturbance of canalicular excretion is the conspicuous feature in Dubin-Johnson's syndrome, while sinusoidal uptake was mainly impede in Rotor's syndrome. Difference of excretory phase between ^{131}I BSP and ^{131}I RB suggested the probable presence of different excretory mechanism of both dyes. There is much similarity as a test substance for the liver function among dyes including Bilirubin, BSP, ^{131}I BSP, ^{131}I RB etc. However differences among them must be carefully studied in order to know the mechanism of biliary excretion.