

1) About 70% of ^{131}I -BSP was bound to the isolated plasma membrane when the approximately same amount of serum protein and plasma membrane existed. This observation was considered to an equilibrium process of association and dissociation of BSP and plasma membrane.

2) Strong competitive inhibition was observed between ^{131}I -BSP and carrier BSP and ICG. In contrast, cholic acid and rifampicin did not inhibit the binding of ^{131}I -BSP to the plasma membrane of the liver.

3) This specific BSP binding was decreased after trypsin treatment of plasma membrane representing suppression of the active transport.

4) Binding of ^{131}I -BSP was also observed to

kidney plasma membrane similar to that observed in the liver plasma membrane.

5) Solubilized plasma membrane protein of the liver was chromatographed on Sephadex G-75 together with ^{35}S -BSP. The peak absorbance of 280nm and peak of radioactivity of ^{35}S were coincided at the same Rf. However, this Rf corresponded to larger protein molecules and not albumin.

Those large proteins of the hepatic plasma membrane which binds organic anions could be considered to be carrier protein of the dyes. And this protein is proved to play major roles in carrier-mediated transport of organic anions through the hepatic membrane.

Study on Circulatory Dynamics in the Liver Diseases by ^{133}Xe Intravenous Injection Method

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In the series of liver cirrhosis and chronic hepatitis, established diagnosis by biopsy, study on their circulatory dynamics was carried out together with the cases of acute hepatitis and healthy controls. ^{133}Xe was injected intravenously and through the lung, when passing the spleen and the liver, the course of radioactivity was registered externally above liver and spleen, from which the following results were obtained.

(1) Specific blood flow of the liver, calculated from the wash-out curves of radioactivity was shown to be reduced in most cases of chronic hepatitis, liver cirrhosis and the extreme stage of acute hepatitis respectively.

(2) By mathematic treatment of the initial image of the liver with a digital computer, radioactivity of the input per unit time in ROI of the

liver was calculated, which had two peaks normally; the earlier was considered as due to the tracer via the hepatic artery, the later as via the portal vein. The later peaks were noted to fall in the chronic hepatitis and so drastically in the liver cirrhosis as well as the extreme stage of acute hepatitis.

(3) From combination of the specific flow of the spleen determined from the wash-out curve, the splenic weight estimated from the scintiscan image, and the disappearance coefficient of ^{198}Au colloid hepatogram, the removal coefficient of the spleen for ^{198}Au -colloid was calculated, which dispersed over a wide range in cases of chronic hepatitis and liver cirrhosis, and its elevation was suggested to be a large factor for uptake of Au colloid in the spleen in liver scintiscan.