Serum Immunogloblin E in the Various Liver Diseases

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The authors studied on value of the serum Ig-E levels in the various liver diseases used by radioimmunossay technique (Phadebas Ig-E test). Results obtained as follows.

1) In the recovery or dilution tests, the measured Ig-E concentrations were higher than expected values when the serum were added.

And the Ig-E concentrations were kept unchanged after freezing for along time.

2) Serum Ig-E levels in 35 healthy adults were ranged from 35 to 780 u/ml (mean; 196±30 u/ml)

In the various liver disease, serum Ig-E levels were higher values than those of the normal subjects.

Particulary, serum Ig-E levels in the patients with cirrhosis or hepatoma were more higher levels.

3) Serum Ig-E levels in the patients with positive Au-antigen were relatively high levels compared with negative cases.

In a case of acute hepatitis with positive Au-antigen, the elevated Ig-E values lowered following the improvement of the disturbved liver function tests.

Studies on Lymphostatic Diseases of the Liver using R 131ISA

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The purpose of this investigation is to clarify the mechanism of lymphatic congestion of the liver by the tissue clearance method, utilizing R 131ISA.

30–40 μCi/0.1 cc of RISA was injected percutaneously into the liver. Radioactivity over the injected area was then measured for 48 hours by a scintillation counter with NaI crystal.

The disappearance curve was expressed in logarithmus.

The radioactivity rapidly decreased in the first 3 hours and then after the ratio of decrease became more slowly than before.

The T(1/2) of the second phase was used as an index of lymphodynamics of the liver.

In the case of chronic hepatitis, the mean value of T(1/2) was 21 hours, whereas in normal liver function it was 17 hours.

The average half time in case of cirrhosis and metastatic tumor was about 31 hours.

Decrease of the absorption rate of RISA was much correlated with that of the effective hepatic blood flow which was calculated from the index value measured by the external counting method.
using 198Au-Colloid. It is revealed in this result that the lymphatic flow is reduced in case of decreased KL value and high splenic and the bone marrow uptake, which usually seen in the fibrotic

This result might lead to our concept that the degree of prolongation of T(1/2) of RISA indicates the degree of fibrotic lesions in the liver. changes in the liver histological findings.

T(1/2) value is closely correlated with the decrease of cholinesterase level and the increase of the γ-globulin level.

Dynamic Studies on the Functions of the Hepatobiliary System using I-131 Rose Bengal

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To assess hepatic parenchyma and biliary functions, I-131 Rose Bengal was applied to measure the regional hepatic hemodynamics using the external counting method.

A total of 47 patients, both with diffuse liver disease and without it, had the following diagnoses: cholecystitis with or without choledolithiasis in 29, acute hepatitis in 4, chronic hepatitis in 3, liver cirrhosis in 4 and no liver disease in 7. Each case was injected intravenously with 300 μ Ci of I-131 Rose Bengal while fasting condition.

The information from the liver was recorded with a gamma camera (Toshiba, Japan) to the Videotape for 100 minutes after the injection through the VTR on line system. At 600 minutes after the injection, two tablets of Yolk were administered as a stimulus to the gall blader. Two separate regions of interest were selected at the right lobe of the liver and the gall blader zone.

The uptake and excretion curve from the right lobe of the liver was analysed as the serum of exponential components.

The averages of the half-time of each component were as follows: 4.3, 12.2, 78.2 min. in no liver disease; 4.3, 119, 75 min. in cholecystitis with or without choledolithiasis; 4.5, 11.0, 100 min. in acute hepatitis; 6.5, 17.1, 219 min. in chronic hepatitis; and 6.5, 17.1, 134 min., in liver cirrhosis. The relationship of half-time of the first component to the liver uptake rate constant of Au-198 colloid was significant (r=0.71, p<0.05). The half-time of the second component was well correlated with the injection to peak time in the curve of I-131 Rose Bengal (r=0.61, p<0.01).

In conclusion, the first component of the uptake and excretion curve would appear to indicate the liver blood flow, and the second component the function of the liver polygonal cells.