Analysis of Liver Scintigram and Dynamic Study in Patients with Malignant Lymphoma and Leukemia

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It is very difficult to diagnose the diffuse hepatic infiltration of malignant lymphoma by the liver scintigram alone, except for cases showing marked hepatomegaly or focal defects.

As the comprehensive RI liver examination using $^{99m}$Tc-phytate, we have quantitatively analyzed the size of the liver, spleen/liver count ratio and hepatic accumulation index (K-value) using a minicomputer, associated with the routine (naked eye) evaluation of RI angiogram and static liver scintigram. The purpose of the present study is to evaluate the usefulness of those parameters for the diagnosis of hepatic involvement of malignant lymphoma and leukemia.

Thirty two patients with malignant lymphoma (Reticulum cell sarcoma; 26 patients, Hodgkin’s disease; 6 patients) and 6 patients with leukemia were studied.

On the liver scintigram, they were divided into three groups, 1) normal group without evidence of enlargement of liver and spleen, uneven distribution of radioactivity or focal defects, 2) evident group with marked enlargement of liver and spleen or focal defects and 3) equivocal group.

Mean K-value in these groups were 0.261 in normal group, 0.432 in evident group and 0.334 in equivocal group. K-values of the patients with hepatic involvement proven by biopsy or autopsy were higher than the m ± 25.8 of the normal control cases (0.255 ± 0.048). Seven out of 8 cases in which follow up studies were performed after chemotherapy revealed a decrease of K-value associated with a reduction of hepatosplenomegaly.

S/L ratio demonstrated no significant differences between cases with and without hepatic involvement, even though the splenomegaly was noted.

On the basis of these results we concluded that increased hepatic accumulation index (K-value) may indicate diffuse hepatic infiltration of malignant lymphoma and leukemia. The cause for the increased K-value remains to be studied.

A Study of the Diagnostic Usefulness of Serial Scintigraphy with $^{131}$I-BSP in Choledocal Cyst

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The serial scintigraphy with $^{131}$I-BSP (Bromsulphalein) is useful method for diagnosis of hepatobiliary diseases, especially the retention images give valuable informations. We reported 5 cases of choledochal cyst or dilatation of the common bile duct diagnosed by this method. The chief complaints of these patients were jaundice, abdominal pain and abdominal mass.

The serial scintigraphy was performed and compared with cholangiography.

After IV injection of $^{131}$I-BSP (5-8 μCi/kg), scan was usually performed at the time of 15 minutes, 60 minutes, 2-3 hours, 5-6 hours and 24 hours.

Case 1) 3.6/12 years old male. Congenital intrahepatic ductal cyst.

In the 15 minutes image, the vertical focal defect was seen in the middle portion of the liver,