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Splenic Scanning and Splenic Clearance in Our Clinic

M. HASEGAWA, I. IWASAKI, K. HYODO, Y. OZAKI and H. NAWA

Department of Internal Medicine, Okayama University Medical School, Okayama

Splenic scanning, splenic clearance and external counting over the spleen, liver, heart and sacrum were performed by ^{51}Cr labeled heated red cell method and ^{203}Hg MHP method in 21 patients and 14 respectively.

Following venipuncture of labeled red cell, serial blood samples were taken, clearance, half time of radioactivity of blood was calculated. After one hour of venipuncture scintiscanning and then external counting

was done successively.

As to scanning, by ^{51}Cr method spleen is demonstrated in 17 cases of 20 and liver in 7 cases. But by ^{203}Hg MHP method, spleen is demonstrated in all the cases and liver is in 13 cases. Therefore ^{203}Hg MHP is superior to ^{51}Cr on scanning.

By ^{51}Cr method, clearance is 16~30 minutes in normal patients. In our case of hypoplastic anemia it is 180 minutes and in other cases also, it is prolonged. In the case of Hodgkin's disease, septicemia and leukemia it is prolonged. The ratio of liver to spleen counted externally is 0.08~0.55 in normal patients. But in hypoplastic anemia liver/spleen is higher because spleen uptake is low and liver is high. Therefore liver scanning as well as spleen is taken in three cases of six. In one case of acute lymphatic leukemia and also in one case of septicemia spleen uptake is low and liver uptake is relatively high.

By ^{203}Hg MHP method, clearance is 52~62 minutes in normal patients. In one case of hypoplastic anemia and also in one case of

chronic myeloid leukemia it is remarkably prolonged. But in the other cases it is within normal limits. In hypoplastic anemia all the cases including the above cases of prolonged clearance, liver uptake is high and liver/spleen is high. Therefore liver scanning is taken in three cases of six and in two of the three cases liver uptake is higher than spleen. In other diseases liver scanning is not taken even in a single case. In the case of chronic myeloid leukemia above mentioned whose clearance is prolonged, liver uptake is also low, so the function of spleen as well as liver to take up labeled red cells may be affected.

Summary:

In hypoplastic anemia the function of spleen to take up damaged red cells is affected. In leukemia and Hodgkin's disease clearance is prolonged or spleen uptake is low, so the function of spleen is estimated to be affected. Further investigation is warranted to determine the possibility of a method of evaluating splenic function by scanning, external counting and clearance etc.

Placental Scanning with $^{99\text{m}}\text{Tc}$ -Albumin

N. YUI, H. KAKEHI, and G. UCHIYAMA

Department of Radiology, Chiba University School of Medicine, Chiba

T. WAKEBAYASHI and Y. SUGISAWA

Dainabot Radioisotope Laboratory, Ltd.

Diagnosis of placental localization is very important to differentiate placenta praevia from other causes of bleeding in pregnancy. Using $^{99\text{m}}\text{Tc}$ -albumin, placenta is visualised by scintillation scanning. Two hundred to 500 microcuries of the sterile $^{99\text{m}}\text{Tc}$ -albumin is administered intravenously to the patient with supine position, then immediately conventional scanning is performed over lower

abdominal region extending upwards from symphysis pubica. Placenta is identified in ovoid shadow of uterine wall, with faint concentration in the bladder. The result is objective and is easy to interpret. The radiation dose delivered from $^{99\text{m}}\text{Tc}$ -Albumin to the material body and fetus (200 μCi of) is far less than that from ^{131}I -albumin or from ^{51}Cr -labelled red cell.