## 2609

RELATIONSHIP BETWEEN IRON ABSORPTION AND STORAGE IRON. H.Saito, T.Ohya, D.Hayashi,and T.Abe. Department of Radiology and Radioisotpe Laboratory, Nagoya University Hospital, Nagoya.

As the indices of storage iron, serum ferritin was radioimmunoassayed, and total iron-binding capacity(TIBC), serum iron(SI), and transferrin saturation(TS) were radioassayed. Iron absorption was measured by the Ring-type whole body counter with Fe-59. Normal subjects (male 3, female 8), iron deficiency anemia(IDA)(male 5, female 8), hemosiderosis(Hsd)(male 4, female 1), alcoholic chronic liver damage(AD)(male 5, female 1), liver cirrhosis(LC)(male 3), and hemochromatosis(Hc)(male 4) were studied. In addition, the effect of alcohol to iron absorption was studied. The results showed a good correlation between iron absorption and TIBC. However the correlations between iron absorption and SI,TS, and Ferritin were limited in the group of IDA, normal and Hsd. Addition of alcohol to radioiron enhanced the iron absorption. Hemochromatosis showed a quite different attitude from other groups in correlation pattern.The use of the above indices of storage iron ensures the diagnosis of disorders of iron metabolism, especially that of hemochromatosis. TIBC,SI and TS are useful for higher iron stores and serum ferritin are useful for lower iron stores.

## 2610

ANALYSIS OF SIMULTANEOUS MEASUREMENT OF RED CELL SURVIVAL AND FERROKINETICS. S.Nobezawa,t.Fujii,Y.Eguchi and T.Kanno. Ddpartment of Radiology, Hamamatsu Medical Center. Hamamatsu.

We investigated the simultaneous measurement of red cell survival(by the use of Cr-51) and ferrokinetics(by the use of Fe-59),by reason of shorten the period for the examination and decrease the patient's complain. In our several analysis of counts by Cr-51 and Fe-59 to same samples at same time. In consequence relationship between energyrange of Cr-51(320±60)KeV = Xcpm and energyrange of Fe-59(1190±240)KeV = Ycpm shoud be estimated truely Cr-51 = (X-0.46Y) cpm and Fe-59 = Ycpm.
Our clinical method:
1) Collecting 15 to 20ml blood of patient with haparin coated syringe and doing centrifugalization.
2) Red cell were laveled by Cr-51 for it's survival examination.
3) Serum were laveled by Fe-59 for his ferrokinetics.
4) Leveled red cell and serum were used for injected intravenously at the same time.
5) Blood's samplings over the period of 3 weeks.
Results:
The period and the blood's sampling times of this new method was a half shorter than original old method.
And evaluation of total examination error is not remarkable.

## 2611

LYMPHOCYTE KINETICS IN CHRONIC LYMPHOCYTIC LEUKEMIA,MALIGNANT LYMPHOMA AND ADULT T CELL LEUKEMIA. (continued). S.Matsuda,T.Uchida,R.Kokubun,T.Yui,T.Sato and S.Kariyone. First Department of Internal Medicine, Fukushima Medical Collage, Fukushima.

Lymphocyte survival and organ distribution were studied by using In-111-oxine or Cr-51 labeled autologous lymphocytes in a normal subject,7 patients with chronic lymphocytic leukemia(CLL),9 with malignant lymphoma(ML) and 2 with adult T cell leukemia(ATL). Disappearance curve of the labeled lymphocytes showed two exponential components in all cases. The half time of the first component was within 1 hour in all cases except a patient with splenectomy. That of the second one was 58.3 hours for a normal subject,109±60.9 hours for CLL, 54.9 ±25.9 hours for ML and 72.7 and 10.8 hours for two cases of ATL, respectively. The recovery of labeled lymphocytes in the blood were 25.1 % for a normal subject, 23.9 ± 3.5 % for CLL, 11.9 ± 9.1 % for ML and 78.5 and 57.5 % for two cases of ATL. According to the observation on the organ distribution with scintillation camera, the labeled cells were accumulated markedly in the spleen immediately after the infusion and in the bone marrow after 1 hour in all cases. The radioactivity over the lungs and liver in ML and ATL were higher than that of CLL immediately after the infusion. Lymph nodes were clearly seen in patients with T cell type CLL and T cell type ML from 18 hours after the infusion and ina patient with B cell type CLL the lymph nodes were seen from 68 hours. However they were not seen in a patients with B cell type ML.

## 2612

IN VIVO KINETICS STUDY OF LYMPHOCYTES LABELED WITH In-111-OXINE OR Cr-51 Takahashi,Y. Akasaka,K. and Okamoto,A. Hematology, Internal Medicine,Tenri Hospital

In vivo kinetics of lymphocytes were studied by labeling them with In-oxine or Cr-51 and subsequent autologous reinfusion. The cells,separated by ficoll-isopaque gradient, were labeled in PBS suspension of 50 times concentration. After reinfusion of the cells rapid decrease in the circulation and acute increase over the spleen of radioactivity were coincidentally observed,which were followed by slow phase of these changes.
The blood disappearance curve was approximately analyzed in two exponential components in portal congestive splenomegalies and two compartmental kinetics model was adopted. In a case of chronic lymphatic leukemia, difference was observed in the kinetics between the spleen and the liver and three-compartmental analysis was performed. T and B lymphocytes were separated in subsequent blood samples by rosette formation for separate kinetics analysis of the respective cells.
Circulating lymphocyte counts were correlated to the reciprocal of transit rate constant from the circulation,X-1,to the second compartment,X-2, and also to the dilution ratio within rapidly miscible space, X-1/( X-1 +X-2) , in these splenomegalies. The transit constant was also correlated with the spleen size and its blood-flow rate. This kinetics alteration was improved after the splenectomy with recovery of lymphocytopenia. In-111 labeling was superior for kinetics study for 48 hours