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IRON ABSORPTION AND LOSS IN IRON DEFICIENCY ANEMIA. H.Saito, D.Nishimura and T.Ohya. Nagoya University School of Medicine, Nagoya.

Although the in vitro radioassays as TIBC, UIBC and ferritin are useful for a sure diagnosis of iron deficiency anemia (IDA), more informations are needed for the therapy of IDA. Iron absorption and loss are studied by whole body and stool counting with Fe-59 and Cr-51. Iron absorption was evaluated in reference to erythropoietic function. Iron absorption was similar in normal female and male. It was increased in IDA; higher in the simple IDA than in IDA with complication. Iron absorption was higher in the subjects with storage iron deficiency than the subjects without storage iron deficiency. Iron absorption was low in patients after gastrectomy. Iron deficiency was caused by increased blood loss mostly, and by decreased iron absorption in part. The existence of a complication is suggested when response is poor to a sufficient amount of intravenously administered iron, that the amount is determined from the informations on iron absorption and loss. The informations on iron absorption and loss are not only important for clarifying the cause of IDA, but also useful for choosing the route of iron administration, and determining the adequate amount of iron required for the complete recovery of IDA and maintenance thereafter.

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SIMULTANEOUS MEASUREMENT OF Tc-99m-ANTI-D SERUM TREATED RBC CLEARANCE WITH THAT OF Cr-51-HEAT OR -NEM-TREATED RBC. Y.Takahashi, A.Ishihara, K.Akasaka and C.Uyama. RI Center, Tenri Hospital. Tenri, Nara.

A mixture of Tc-99m labeled RBCs treated with anti-D serum (Tc-D-R, in a concentration of 50 $\mu$ g and 25 $\mu$ g per ml RBC, D<sub>2</sub> and D<sub>1</sub> respectively) and Cr-51 labeled heat-damaged RBCs (Cr-H-R) or NEM-treated RBCs (Cr-N-R) was administered intravenously for simultaneous measurement of their respective clearance in the circulation. Their blood disappearance curve was bi-exponentially analysed in correspondence to respective radiosplenogram. The initial (maximum) slope,  $\lambda_0$ , of H-R disappearance was assumed to be the splenic blood flow per blood volume,  $\lambda_f$ . The ratio of  $\lambda_0$  of N-R and of D-R to  $\lambda_f$  was assumed to be the partition ratio of these denatured cells to the splenic slower path,  $\beta_2$ N and  $\beta_2$ D respectively. Their splenic extraction ratio, ER, was represented by the ratio of the reciprocal of the area between the disappearance curve in a fractional amount and 0-line to  $\lambda_f$ . Thus were represented their hemodynamics alteration and trapping efficiency by these indices.

These denatured cells were selectively sequestered in the spleen. Both the values of  $\beta_2$  and ER increased in the order, N-R, D<sub>1</sub>-R, D<sub>2</sub>-R. The D-Rs are assumed to undergo Fc-receptor-mediated cell destruction, the different mechanism of destruction which N-Rs are subjected to and D-R clearance is expected to reflect another aspect of splenic function related to disimmune state.

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BONE MARROW SCINTIGRAPHY WITH In-111-CHLORIDE IN 3 CASES OF APLASTIC ANEMIA SHOWING APLASTIC, HYPOPLASTIC AND HYPERPLASTIC MARROW. N.Saijo, K.Maeda, K.Uranami, U.Ebina and U.Hamabayashi. Department of Internal Medicine and Radiology. Rumoi City General Hospital.

We investigated the usefulness of bone marrow scintigraphy with In-111-Chloride for the diagnosis of blood disease. In this report, we studied the finding of bone marrow scintigraphy with In-111-Chloride in the cases of aplastic anemia showing aplastic, hypoplastic and hyperplastic marrow. Imaging was performed after the injection of 2 mCi by DYNA 4C type Gammacamera as reported previously. It was found that the accumulation of radioactivity in central marrow was correlated well with results of bone marrow biopsy in the case of aplastic anemia. Namely, the accumulation of radioactivity was poor in the case showing aplastic and hypoplastic marrow. On the other hand, accumulation of radioactivity was good in the case of hyperplastic marrow. And also, the accumulation of radioactivity to the kidney was observed markedly in those 3 cases in early stage. Plasma disappearance of In-111-Chloride of those cases were prolonged approximately 3 times compared with that of iron deficiency anemia.

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CLINICAL EVALUATION OF BONE MARROW IMAGING IN PATIENTS WITH HEMATOLOGICAL DISEASE -COMPARISON BETWEEN THE TWO IMAGES USING Tc-99m Sn COLLOIDS AND In-111 CHLORIDE-S.Hasegawa, T.Inoue, T.Ando and K.Yoshimura. Kantoteishin Hospital, Tokyo.

In patients with various hematological disease, the bone marrow images using Tc-99m Sn colloids and In-111 chloride had been analyzed for the differences of bone marrow uptake between the two  $RA_{15}$ . Materials included 3 normal controls and patients with leukemia (11), malignant lymphoma (5), multiple myeloma (4), anemia (5) and others (5). Evaluation of bone marrow uptake had been performed by a radiologist who had no acknowledgment of other clinical information and diagnosis. Bone marrow uptake was evaluated with 3 grades (absent, poor and high uptake).

15 out of 33 cases (45%) have showed the differences of bone marrow uptake between the two  $RA_{15}$ . Especially in patients with CML, In-111 uptake was superior than Tc-99m Sn colloids, while converse relation was shown in patients with hematopoietic dysplasia (RAEM).

Cases with peripheral expansion showed good central bone marrow uptake and had no significant differences between the two  $RA_{15}$ .

These data indicated that combined study using Tc-99m Sn colloids and In-111 was available to evaluate the marrow function of hematological disease.