relationship between % RCU and storage iron, 100 cases were studied. The height, body weight and hemoglobin (Hb) value were used for the estimation of storage iron in most of the cases, and it was also calculated from the total amount of depleted blood in patient with hemochromatosis. The amount of storage iron to total body iron was expressed as % storage. % RCU and % storage were inversely proportional. % RCU was usually higher than the ratio of Hb iron to total body iron due to the fixation of radioiron reflux from storage.

The fixation was decreased when the amount of storage iron was increased, but the effect of storage iron to % RCU was small when the amount of storage iron was normal. The relationship between % RCU (u) and % storage (s) was expressed by the following formula

$u = 1 - s^n$ where n means the time

$s^n = 1 - u$ of partition of radioiron according to the ratio of Hb iron(r) to storage iron(s)

$r + s = 1$

$$n = \frac{\log (1-u)}{\log s}$$

According to this formula the value n was obtained in various disease group, in relation to red cell iron renewal, plasma rion turnover as well. The difference was seen in hemolytic syndrome, especially in the group of having ineffective erythropoiesis.

Ferrokinetics in Erythroleukemia —With Special Reference to Whole Body Linear Scanning

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Ferrokinetic studies with a whole body monitoring were performed in 11 patients with erythroleukemia (erythremic stage). The results were as follows: PID T1/2 72±28 (mean±S. D.) min., % RCU 10.5±10.3%, PIT 1.62±0.53 mg/kg/day and EIT 0.19±0.20 mg/kg/day. A significant correlation was observed between EIT and the numbers of circulating reticulocytes ($r = +0.938$), and between PIT and hemoglobin value ($r = -0.684$). However, no correlation was observed between serum iron and PID T1/2 value.

The distribution patterns of the erythropoietic marrows in 7 cases of erythroleukemia were evaluated with a ring-type whole body linear scanning using ^{59}Fe. In those 7 cases, the patterns longitudial scan from head to foot at 24th hour after injection of ^{59}Fe which reflect the erythropoietic marrow distribution, were classified into 3 types, that is, the type of erythroid hyperplasia and expansion of bone marrow (4 cases), the type of extramedullary erythropoiesis (2 cases) and the type of erythroid hypoplasia and deposition of ^{59}Fe in the liver (3 cases at leukemic transformation or after blood transfusion). Judging from the distribution patterns of ^{59}Fe at 10th day, the retention of ^{59}Fe in the bone marrow was observed in 5, hemolysis in 4 and the iron deposition in the liver or spleen in all 7 cases.

The ferrokinetic indices and the distribution patterns of ^{59}Fe became normalized in two cases

which acquired a complete remission at leukemic stage after chemotherapy or bone marrow transplantation.

Atransferrinemia as Determined by the Radioassay of Total Iron-Binding Capacity of the Serum (TIBC)

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By the radioassay of TIBC in 600 cases, we found a patient with acquired atransferrinemia, who was diagnosed as hypoproteinemia probablly due to protein losing gastroenteropathy (PLE).

This patient was a 24 year old female whose chief complaint was edema. She had soft stool since her childhood. Her total protein was 5.0<2.8 g/dl. Transferrin was 37<71 mg/dl by immunodiffusion method, TIBC was 50 to 91 μg/dl, and serum iron was 25<35 μg/dl.

Ferrokinetics study revealed the pattern of iron deficiency anemia and at the same time radioiron deposition in the liver.

Iron absorption was 33 % by whole body counting. ^{131}I-SA plasma disappearance rate was 41 %/day. Her anemia was alight, and hypochromic. Intestinal blood loss was normal (0.17<1.1 ml/day). Liver cirrhosis, malabsorption syndrome, and nephrotic syndrome were ruled out.

Five congenital, and 4 acquired atransferrinemia have been reported so far, and this is the first case of acquired atransferrinemia in Japan.