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CLEARANCE OF HUMAN RED CELLS WITH Tc-99m AND ANTI Rh (D) ANTI-BODY IN RETICULOENDOTHELIAL - 1 SYSTEM. Katsuhiko Tobita. Department of Internal Medicine Utsunomiya Saiseikai Hospital.

We report on clearance of human red cells with Tc-99m and anti Rh (D) antibody in reticuloendothelial system. Further more, images of reticuloendothelial system are observed using computer-assisted imaging system scintillation camera in some cases. The observed patients include 2 SLE, 1 drug-induced thrombocytopenia, 12 chronic ITP, 1 Evans' syndrome and 6 splenomegaly. The half time for normal persons is 51 minutes. The results of half time for chronic ITP is almost normal in all cases except for one without any relationship between active and remission state of the disease. The one case severely resistant to all treatments shows much prolongation of it. In the case of splenomegaly, all reveal its prolongation. Usage of prednisolone or intravenous γ -globulin in much amount makes it also much prolonged. From these results, it is very useful to consider the mechanisms of these diseases and drug effects.

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ANALYSIS OF THE EXTENSION PATTERN IN ^{99m}Tc -S-COLLOID MARROW SCINTIGRAM IN CASES WITH REACTIVE ERYTHROID HYPERPLASIA. Y. Takahashi, H. Komaki, T. Miyamoto, Y. Kondoh, H. Nagashima and K. Akasaka. RI Center and Hematology, Tenri Hospital. Tenri, Nara.

Distribution of the functioning reticuloendothelial bone marrow as hemopoietic field was examined by scintigraphic imaging using ^{99m}Tc -S-colloids in 16 hereditary spherocytosis (HS), 16 autoimmune hemolytic anemia (AIHA), 33 idiopathic portal hypertension and 26 liver cirrhosis (LC). The degree of central-to-peripheral extension was classified into five ones and the pattern of distribution in both ends of the long bones did so into six ones.

Juvenile HS cases demonstrated the marrow extension up to distal end of the arms and legs (type IV) mostly with activities in the hand and foot bones with equivalent epiphysis and metaphysis activity (EM pattern) and adult cases did the extension beyond the knee and elbow joints (type III) with predominant metaphysis (M) pattern. Most IPH and LC cases demonstrated the extension up to proximal two thirds of humerus and femur (type II) with juxta metaphyseal (IM) pattern, the findings which suggested sufficient supply with hemopoietic field.

These results were referred to those of erythrokinetics study. The marrow distribution thus categorized correlated well with plasma iron turnover rate (PIT) in AIHA, IPH and LC but increase in PIT was insufficient in reference to accelerated red cell destruction or loss in some cases of AIHA, IPH and LC irrespective of iron deficiency in the latter two.

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MEASUREMENT OF FREE DIFFUSION THROUGH RED BLOOD CELL MEMBRANE AND POSSIBILITY OF ITS APPLICATION TO DIFFERENTIAL DIAGNOSIS OF ESSENTIAL HYPERTENSION.

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^{125}I -OIH has been long used for renography because it is actively transported by renal tubular cell and excreted into urine promptly. But small part of it enters red blood cell so it can not be used for exact measurement of renal function. Recently it has been reported that permeability of red blood cell membrane of the patients of essential hypertension was increased and it was postulated that essential hypertension is caused by increased cell membrane permeability. From this point of view, measurement of permeability of red blood cell membrane of SHR (spontaneously hypertensive rat) and its control WKY was performed by us using OIH and it was revealed that free diffusion of SHR is increased as compared to that of WKY. It may be possible that differential diagnosis of essential hypertension is done by measurement of permeability of red blood cell membrane with OIH.

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SPLEEN CONTRACTION MEASURED BY ECT IN PATIENTS WITH VARIOUS DISORDERS. A. Iio, K. Murase, H. Ito, Y. Watanabe, M. Kawamura and K. Hamamoto. Department of Radiology, Ehime University. Ehime.

Contraction rate of the spleen was measured on 45 patients by previously reported method using ECT. Ejection rate was also obtained from difference of total counts in the spleen before and after epinephrine injection. Mean \pm SD of the contraction rates in 12 patients without splenomegaly or spleen involvement of malignancy examined by CT scan and/or Ga-67 scintigraphy was $28.0 \pm 9.1\%$. That of the ejection rate in these patients was $10.5 \pm 9.6\%$. There was a significant difference ($p < 0.01$) of mean contraction rate in 9 patients with malignant lymphoma who had spleen involvement ($14.5 \pm 7.3\%$) and in 9 patients who had not the involvement ($28.9 \pm 8.2\%$). The contraction rates in 3 patients with leukemia were exceedingly low i.e., $5.14 \pm 0.71\%$, while those in patients with portal hypertension ($n=7$, $33.5 \pm 6.7\%$), other malignancies ($n=5$, $29.7 \pm 16.0\%$), other hematological diseases ($n=6$, $25.6 \pm 12.8\%$), and other diseases ($n=6$, $35.7 \pm 9.5\%$) were not low. There was a positive correlation ($r=0.59$, $p < 0.01$) between contraction rate and ejection rate in the 44 patients studied. The ejection rates in 8 patients with probable spleen involvement by malignant lymphoma were low ($1.78 \pm 1.65\%$), whereas those in 9 patients without the involvement were not low ($14.3 \pm 12.5\%$).