

lymphocytes has been measured in terms of the incorporation of ^{75}Se -selenomethionine (^{75}Se) into the globulin protein. Lymphocytes culture in medium contained ^{75}Se with and without PHA were incubated for 96 hr at 37°C . Globulin was separated by adding ammonium sulfate and radioactivity of ^{75}Se incorporated into globulin of 10^6 lymphocytes was measured in a gamma well scintillation counter. The ratio of radioactivities of stimulated to unstimulation cells represents an index of lymphocyte stimulation by PHA.

In lymphocytes of normal subject incorporation of ^{75}Se into globulin was demonstrated in unstimulated cells (basal synthesis) and was well stimulated by PHA. Index of stimulation of PHA was 4.4 ± 2.8 .

In Hodgkin's disease basal synthesis was nor-

mal but PHA reactivity was suppressed in 3 of 4 cases. In chronic lymphatic leukemia (CLL) basal synthesis and PHA reactivity were remarkably suppressed in 3 cases but were high in one case. In 3 cases of IgG myeloma and 2 cases of Bence-Jones myeloma basal synthesis was normal but synthesis was not stimulated by PHA except one case of IgG myeloma.

In SLE PHA reactivity was suppressed in 5 cases but was high in 2 cases as well as one case of scleroderma. In one case of dermatomyositis, one case of scleroderma and one case of autoimmune hemolytic anemia PHA reactivity was suppressed.

Decreased response to PHA was seen in 3 cases of hypogammaglobulinemia and 4 cases of hypoplastic anemia.

Thrombokinet Studies (II)

Platelet Labeling Method by $^{99\text{m}}\text{Tc}$ -pertechnetate and Visualization of the Site of its Sequestration and Destruction

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Introduction: It is said that spleen and/or liver are the principal site of platelet sequestration and destruction. In this study, platelets were labeled by $^{99\text{m}}\text{Tc}$ -pertechnetate and ^{51}Cr . Visualization of the site of platelet sequestration and destruction was evaluated by means of the scintillation camera.

Method:

Sixteen patients with various hematological

disorders gave consent for this study. The labeling procedure for platelets is as follows;

1. Centrifuge 250 ml of ACD blood at 1,500 rpm for 15 min and transfer platelet rich plasma (PRP) into a transfer pack.
2. Centrifuge the PRP at 2,300 rpm for 15 min and resuspend the concentrated platelets into 5 ml of physiologic saline.
3. Add 1-3 mCi of $^{99\text{m}}\text{Tc}$ -saline solution and

300–500 μCi of $\text{Na}_2^{51}\text{CrO}_4$ and incubate for 15 min at room temperature.

4. Add 10 μg of $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$ and 50 mg of ascorbic acid as reducing agents and mix gently for 5 min.
5. After washing with 20 ml of saline, resuspend the platelets in 20 ml of patient's plasma and transfuse to the subjects.

Organ distribution of $^{99\text{m}}\text{Tc}$ -labeled platelets was observed by means of scintillation camera. Platelet survival and body surface counting were done in the usual way.

Results: Labeling percent of platelets by $^{99\text{m}}\text{Tc}$ was 50–60%. No evidence of cell damage or re-utilization of $^{99\text{m}}\text{Tc}$ was obtained. No significant

elution of the label was recognized by repeated washes of labeled platelets.

In normal subjects, platelets were accumulated in spleen and liver. Platelet survival was 8–10 days. Organ distribution of $^{99\text{m}}\text{Tc}$ -labeled platelets was coincident with the results of body surface counting by ^{51}Cr . In one group of patients with idiopathic thrombocytopenic purpura, platelets were destructed in the spleen and in the other group, spleen and liver were the sites of cell destruction. Platelet survival shortened characteristically. In patients with congestive splenomegaly, polycythemia vera and primary thrombocythemia, platelets were sequestered into the spleen but lifespan was normal.

Study on Aging and Reticuloendothelial System's Function Due to the Intravenous Injection-method of Radioactive Fe^{59} Chondroitin Sulfate Colloid

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The authors have previously reported at the First Nuclear Medical Society's Local Meeting of Kanto District, that the intravenous administration of Fe^{59} chondroitin iron sulfate resulted in a little lower or normal uptake-function of colloid-iron in the aged persons or those having severe arteriosclerosis as compared with normal subjects (persons), while the disposing function was lowered about 2.1 times as compared with the normal group.

In the present study, quantitative determination was performed on radioactive Fe^{59} taken up into the reticuloendothelial system's organs after

intravenous injection of chondroitin iron sulfate, at the same time, quantitative determination was made with systemic Autoradiograms, and also, experiment was performed for the estimation of the function of the reticuloendothelial system's organs with aging.

As the method of experiment, the experimental animals (young and old mice fed with lanolin) were intravenously injected with chondroitin iron sulfate 0.5mg, 1 μCi per 20g body weight of mouse at the tail, and were left to the boldd-letting death in the progress of time, then by employing the method of Copp et al, the sub-