

Ferrokinetics of the patients with Hypoplastic Anemia, Especially Regarding Splenectomy

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There are many reports on ferrokinetics of the patients with hypoplastic anemia. The data of these reports are elevated serum iron level, decreased unsaturated iron-binding capacity of the serum, decreased uptake of ^{59}Fe into the bone marrow, and decreased red blood cell ^{59}Fe utilization rate.

On the other hand, there are splenectomy as the treatment of the patients with hypoplastic anemia as well as blood transfusion, ACTH and adrenocorticosteroid hormone. The clinical entity for indications of splenectomy is not established yet. This presentation is made to discuss the indications of splenectomy for the patients with hypoplastic anemia.

Ferrokinetics of the six patients with hypoplastic anemia were studied with Hoff and Polycove's method. The splenectomy was done two patients out of six. Two patients out of four patients without splenectomy showed characteristic pattern of hypoplastic bone marrow failure; relatively lower uptake of ^{59}Fe into the bone marrow, prolonged disappearance of radioactivity from bone marrow, lower level of red blood cell ^{59}Fe utilization, and elevated uptake of liver and spleen.

One of the splenectomized case who did not take a improved clinical course after splenectomy showed little change of red blood cell

utilization rate, of plasma iron disappearance time and of ^{59}Fe uptake of bone marrow. This case had an aplastic bone marrow.

The other case of the splenectomized hypoplastic anemia, whose clinical course was obviously improved after splenectomy, was observed normal range life span of ^{51}Cr labelled red blood cell, improved red blood cell ^{59}Fe utilization rate and plasma iron disappearance time as well as improved bone marrow picture, bleeding tendency and no necessity of blood transfusion after splenectomy. From these data, hypoplastic anemia could classify into two groups from ferrokinetics. The first group had a relatively higher uptake of ^{59}Fe into bone marrow, prolonged disappearance of radioactivity from bone marrow, decreased red blood cell ^{59}Fe utilization rate, and hypererythroblastic maturation arrest form bone marrow. The second group had a lower uptake of ^{59}Fe into bone marrow. The second group had a lower uptake of ^{59}Fe into bone marrow, higher uptake of ^{59}Fe into liver and spleen, extremely decreased red blood cell ^{59}Fe utilization rate, and hypo- or aplastic bone marrow. The indication of splenectomy for the patients with hypoplastic anemia was considered to be on the first group.

The ^{59}Fe Ferrokinetics in the Mice Developed Experimental Hematological Disorders

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It is known that the chloramphenicol (CP) induces the hematological disorders such as hypoplastic anemia, however, the etiology of this mechanism is not clear. The ferrokinetics in the mice received massive chloramphenicol,

were studied in this paper.

Female ICR mice, weighing 20 to 24 gm, were used for all experiments. Five mg of chloramphenicol was administered intraperitoneally twice a day for three days (CP three