

Iron Loss as Observed by Whole-Body Counting; The Effect of Iron Chelating Agent

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Iron loss is large when a large amount of iron is deposited. There are two main routes in the loss; via bleeding and exfoliation of mucous epithelial cells. This is to report the effect of desferrioxamine on the loss of iron to obtain the information on the diagnosis and therapy of iron overload.

Radioiron was injected intraperitoneally to the normal and iron loaded mice. For whole body counting, a body fixing device was used to keep the animal in the same geometry. Whole body counting was performed for 70 days. The mice were sacrificed then, and blood, liver, and spleen activity was counted respectively. The excretion of storage iron in urine was observed in the patient of hemochromatosis as well.

The effect of chelating agent for radioiron removal was greatest when it was injected before the administration of radioiron. The loss

of radioiron in the mouse was marked by way of gastrointestinal bleeding, and it was less marked by the exfoliation of the mucous epithelial cells. The loss of radioiron was very small in iron loaded mice as compared to those without iron loading. However there observed distinct increase in the excretion of radioiron in the group received daily injection of desferrioxamine.

Iron was removed from the top soil of storage by the use of desferrioxamine. The excretion of radioiron was increased by the daily injection of desferrioxamine and this was largest when it was used before the injection of radioiron. The loss was smaller when the use of desferrioxamine started later; 3 hours, 1 day, 45 days in this order. The hemorrhage of radioiron incorporated red cells did not increase the loss markedly.

Secondary Hemochromatosis Caused by the Increased Iron Absorption Due to Hemolysis

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Among the 10 cases of hemochromatosis we have experienced, 3 were idiopathic, and 7 were secondary, in which 3 were caused by continuous daily iron drug ingestion, and 4 were patients with hemolysis. These patients showed normal iron absorption, despite severe iron overload. There is a course of pathogenesis due to increased iron absorption as a result of hemolysis. We have shown that the

existence of the pathway of iron absorption though hemosiderin formation, which is hardly blocked as compared to ferritin formation.

Hemolysis increases iron absorption and some of hemolytic patient resulted in hemochromatosis as proved by iron absorption study.