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**Histological effect of iron supplementation on bone marrow and peripheral blood cells of rabbits**

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**Abstract**

The aim of this study is to evaluate iron deficiency and iron overload on the structure of the bone marrow as well as the peripheral blood cells of rabbits (*Oryctolagus cuniculus*) as a model of experimental animals. For this purpose twenty four premature rabbits were divided into four groups, two control groups, sex-well fed animals and sex starved animals, and two experimental and supplemented groups, sex-well fed animals and sex starved animals were daily supplemented with therapeutic dose of iron as Fumarate tablets. Smears from bone marrow and peripheral blood were prepared. The bone marrow of the starved without iron supplementation showed normal appearance. However, the stem cell progenitors were predominantly in the last stage of development the reticulocytes were appeared with clear cytoplasm. By continuous iron supplementation the bone marrow cells restored their normal distribution and shapes. By time stainable materials were deposited within the cytoplasm and nuclei of the pro- erythroblasts. The reticulocytes become irregular in shape. These abnormalities took place in the red blood cells. In the well fed and iron supplemented groups the stainable materials were badly accumulated in the bone marrow cells from the first week of administration. These results concluded the severe need of iron to treats iron deficiency in a limited time. However, long duration of iron supplementation will introduce certain types of abnormalities in bone marrow and peripheral blood cells.

**Author Keywords**

Blood cells; Bone marrow; Histological effect; Peripheral; Rabbits

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