

Bone marrow in patients with visceral leishmaniasis

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Abstract:

Ultrastructural studies were performed on bone marrow aspirates from three patients with visceral leishmaniasis. The patients were moderately anaemic but showed a suboptimal increase in the absolute reticulocyte count. Serum and red cell folate concentrations and serum vitamin B12 concentrations were normal in all three cases, and serum ferritin concentrations were normal or increased. The bone marrows were hypercellular and showed erythroid hyperplasia; a high proportion of the erythroblasts showed dyserythropoietic changes. Amastigote forms of *Leishmania donovani* were found within bone marrow macrophages and within occasional neutrophil and eosinophil granulocytes. Electron microscopy showed the presence of many abnormal cells, which probably represented immature erythroblasts with giant lysosomes. These cells were often large, usually contained immature nuclei with relatively little condensed chromatin, had 1-20 electron dense cytoplasmic granules with an average diameter of 0.5 micron, and regularly displayed substantial rhopheocytotic activity. A few abnormal cells and intermediate and late erythroblasts appeared to have been phagocytosed by macrophages. The data indicate that dyserythropoiesis and ineffective erythropoiesis have a role in the pathogenesis of the anaemia of at least some cases of kala-azar.