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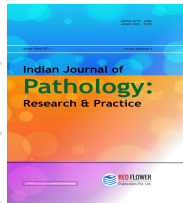
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Indian Journal of Pathology: Research and Practice

Volume 6, Issue 1, January - March 2017, Pages 83-87

Original Article

Bone Marrow Iron Stores among Various Hematological Disorders

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DOI: <http://dx.doi.org/10.21088/ijprp.2278.148X.6117.13>

Abstract

Background: Nutritional anemia, particularly iron deficiency, continues to be a major public health problem worldwide, particularly in the developing countries like India. Although mass spectrometry has been recently used to give a definitive determination of iron in tissue, microscopic examination of Prussian bluestained bone marrow aspirate has been considered the practical "gold standard" for determining iron depleted states. Aim: To assess the bone marrow iron stores among the various haematological disorders. Materials and Methods: A cross sectional observational study was conducted by the department of pathology at Shri B.M. Patil Medical College, Hospital and Research centre, Vijayapur for a period of one year. A total of 110 cases of various hematological disorders were studied to assess the bone marrow iron stores. Bone marrow aspirate was obtained after written informed consent from the posterior superior iliac spine observing strict asepsis, spread onto slides, air dried, fixed with methanol, and stained with Giemsa Stain, observed microscopically and also simultaneously one smear stained with Prussian blue stain. Equal volumes of 2% of potassium ferrocyanide and 2% hydrochloric acid solution are mixed in staining jar and slides are immersed in the solution for 1520 min. Then removed and rinsed with tap water. Counterstaining was done with 1% neutral red

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disorders and 69% of the combined disorders had shown decreased bone marrow iron store, whereas among WBC disorders and platelet disorders it was 45% and 33.3% respectively and there was no statistically significant association ($p=0.461$) between any of the haematological disorder and the reduced bone marrow iron stores. Conclusion: Performing a bone marrow study in all patients with haematological disorders should be made routine before starting iron replacement therapy.

Keywords: Bone marrow; iron stores; haematological disorder.

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