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Titel des Beitrags: Noninvasive measurement of liver iron concentration at MRI in children with acute leukemia: initial results.

Abstract: Routine assessment of body iron load in patients with acute leukemia is usually done by serum ferritin (SF) assay; however, its sensitivity is impaired by different conditions including inflammation and malignancy. To estimate, using MRI, the extent of liver iron overload in children with acute leukemia and receiving blood transfusions, and to examine the association between the degree of hepatic iron overload and clinical parameters including SF and the transfusion iron load (TIL). A total of 25 MRI measurements of the liver were performed in 15 children with acute leukemia (mean age 9.75 years) using gradient-echo sequences. Signal intensity ratios between the liver and the vertebral muscle (L/M ratio) were calculated and compared with SF-levels. TIL was estimated from the cumulative blood volume received, assuming an amount of 200 mg iron per transfused red blood cell unit. Statistical analysis revealed good correlation between the L/M SI ratio and TIL (r = -0.67, P = 0.002, 95% confidence interval CI = -0.83 to -0.34) in patients with acute leukemia as well as between L/M SI ratio and SF (r = -0.76, P = 0.0003, 95% CI = -0.89 to -0.52). SF may reliably reflect liver iron stores as a routine marker in patients suffering from acute leukemia.

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