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Dysmetabolic iron overload syndrome: a mild but unquestionable iron overload is identified by MRI

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Dear Editor,

Castiella et al claim that liver iron concentration (LIC) is not increased in patients with hyperferritinemia and metabolic syndrome on the basis of a study¹ where LIC was measured using MRI in 54 patients referred for hyperferritinemia. This study has a major limitation since 5% of patients had viral hepatitis and 35% were excessive drinkers (>40g/day), two conditions that can induce hyperferritinemia without iron overload.

Dysmetabolic Iron Overload Syndrome (DIOS) is a well-defined condition where usual causes of hyperferritinemia (alcohol, viral hepatitis, genetic hemochromatosis...) have been excluded. Hyperferritinemia is associated with proven hepatic iron overload and one or more features of the metabolic syndrome. In the initial description of DIOS, the reality of hepatic

iron excess was demonstrated by histology, determination of biochemical LIC and calculation of iron removed ².

In our study ³, LIC was determined by MRI according to the widely used method of Gandon et al ⁴. The threshold of 50 $\mu\text{mol/g}$ was chosen as inclusion criterion because it was previously demonstrated to ensure hepatic iron excess with good specificity. Moreover, in our randomized study, the number of grams of iron subtracted by phlebotomy, the gold standard for the determination of body iron stores, was calculated in 126 patients. A mean of 12 ± 4 bi-monthly phlebotomies, corresponding to 4.9 ± 1.6 l of blood removed, i.e. 2.45 ± 0.8 g of iron, were necessary to obtain low ferritin levels in these patients. This was in line with results of Jezequel⁵ et al who showed in a prospective matched-controlled study that patients diagnosed as having DIOS on the basis of hyperferritinemia and LIC > 50 $\mu\text{mol/g}$ at MRI had four times higher total body iron stores ($2.5\text{g}\pm 0.7\text{g}$) than overweight controls with normal serum ferritin ($0.8\pm 0.3\text{g}$).

In conclusion, our study included a large sample of strictly selected patients representative of DIOS. These patients had mild but unquestionable iron overload.

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