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Hypoferremia predicts treatment response to IFN-α

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(HealthDay) -- For patients with hepatitis C virus (HCV), hepcidin, a regulator of iron homeostasis, is induced following a single dose of pegylated interferon-α (PEG-IFNα), and may be a surrogate marker of immediate efficacy of IFN-α, according to a study published online Feb. 15 in *Hepatology*.

John D. Ryan, M.D., of the Mater Misericordiae University Hospital in Dublin, and associates analyzed blood samples of HCV patients to assess the clinical importance of the changes in iron homeostasis during the first 24 hours of treatment with PEG-IFNα.

The researchers found that a single dose of PEG-IFNα triggered a significant increase in serum hepcidin that peaked at 12 hours. This coincided with a 50 percent drop in serum iron and transferrin saturation over 24 hours. Significantly lower levels of serum iron and transferring saturation were seen at 12 and 24 hours in patients with a ≥2 log decrease in HCV viral load over the first 24 hours. Serum iron levels at 24 hours were an independent predictor of immediate HCV viral decline. Direct induction of hepcidin by IFN-α was seen in cell culture, and was controlled by the STAT3 transcription factor.

"Hepcidin induction occurs following the initiation of PEG-IFNα treatment for HCV, and is mediated via STAT3 signaling," the authors write. "The subsequent hypoferremia was greatest in those with the most significant decline in viral load, identifying systemic iron withdrawal as a marker of immediate IFN-α efficacy in HCV patients."

More information: Abstract
Full Text (subscription or payment may be required)