A 72-Year-Old Woman with Markedly Increased Ferritin

Waseem Anani,1 Colleen Fox,1 and Octavia M. Peck Palmer1,2*

CASE DESCRIPTION

A 72-year-old woman with a history of adult-onset Still disease and congestive heart failure was transferred from an outside hospital. She had a 2-week history of fevers, diarrhea, nausea, sore throat, and myalgias. At presentation, she had a markedly increased plasma ferritin concentration [238,380 ng/mL (reference intervals shown in Table 1)], low hemoglobin (7.2 g/dL), hypertriglyceridemia (245 mg/dL), hypofibrinogenemia (94.7 mg/dL), thrombocytopenia (500 × 10⁹/L), and severe neutropenia (<0.01 × 10⁹/L). A bone marrow aspirate confirmed erythrophagocytosis and rare hemophagocytic cells.

QUESTIONS

1. Abnormally increased ferritin concentrations are observed in what clinical settings?
2. Does ferritin have diagnostic sensitivity and specificity for hematologic syndromes associated with erythrophagocytosis?

The answers are on the next page.

1 University of Pittsburgh Medical Center, Pittsburgh, PA; 2 Department of Pathology, University of Pittsburgh, Pittsburgh, PA.
* Address correspondence to this author at: 3477 Euler Way, Room 3014, Pittsburgh, PA 15221. E-mail palmerom@upmc.edu.

Received August 18, 2014; accepted September 25, 2014.
DOI: 10.1373/clinchem.2014.231993
© 2014 American Association for Clinical Chemistry
Ferritin is increased in acute inflammation, iron overload, malignancy, and excessive alcohol consumption. Our patient’s ferritin was >200,000 ng/mL. Ferritin concentrations >10,000 ng/mL have been reported to be diagnostic (90% sensitivity/96% specificity) for hemophagocytic lymphohistiocytosis in a cohort comprising neonates and adults (≤30 years of age) (1). Diagnosis of hemophagocytic lymphohistiocytosis—a rare, often fatal inflammatory syndrome—includes erythrophagocytosis and hemophagocytic cells in the bone marrow, fever, hyperferritinemia, cytopenias, and hypofibrinogenemia (2, 3) (Table 1).

Author Contributions: All authors confirmed they have contributed to the intellectual content of this paper and have met the following 3 requirements: (a) significant contributions to the conception and design, acquisition of data, or analysis and interpretation of data; (b) drafting or revising the article for intellectual content; and (c) final approval of the published article.

Authors’ Disclosures or Potential Conflicts of Interest: No authors declared any potential conflicts of interest.

References