PLASMA HEPCIDIN LEVELS AND ANEMIA IN OLD AGE. THE LEIDEN 85-PLUS STUDY

Elzen, W. den; Craen, A.J. de; Wiegerinck, E.; Westendorp, R.; Swinkels, D.W.; Gussekloo, J.

Haematologica. 2013 Mar;98(3):448-54. doi: 10.3324/haematol.2012.068825. Epub 2012 Oct 12.

Plasma hepcidin levels and anemia in old age. The Leiden 85-Plus Study.

den Elzen WP, de Craen AJ, Wiegerinck ET, Westendorp RG, Swinkels DW, Gussekloo J.

Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, The Netherlands. w.p.j.den_elzen@lumc.nl

Abstract

Hepcidin, an important regulator of iron homeostasis, is suggested to be causally related to anemia of inflammation. The aim of this study was to explore the role of plasma hepcidin in anemia among older persons from the general population. The Leiden 85-Plus Study is a population-based study of 85-year olds in Leiden, the Netherlands. Eighty-five-year old inhabitants of Leiden were enrolled between September 1997 and September 1999. At the age of 86, plasma hepcidin was determined with time of flight mass spectrometry in 490 participants [160 (32.7%) male, 114 (23.3%) with anemia]. Anemia was defined according to criteria of the World Health Organization (hemoglobin level <13 g/dL for men and hemoglobin <12 g/dL for women). The median plasma hepcidin level was 3.0 nM [interquartile range (IQR) 1.8-4.9]. We found strong correlations between plasma hepcidin and body iron status, C-reactive protein and erythropoietin levels. Significantly higher hepcidin levels were found in participants with anemia of inflammation (P<0.01), in participants with anemia of kidney disease (P=0.01), and in participants with unexplained anemia (P=0.01) than in participants without anemia. Participants with iron-deficiency anemia had significantly lower plasma hepcidin levels than participants without anemia (P<0.01). In conclusion, older persons with anemia of inflammation have higher hepcidin levels than their counterparts without anemia. The potential clinical value of hepcidin in future diagnostic algorithms for anemia has to be explored.

PMID: 23065507 [PubMed - in process] Free full text