Red Blood Cell Distribution Width for Heart Failure

Key words: RDW, HF, elderly person

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To the Editor  We read with interest the recent article in Internal Medicine (1), reporting that a red blood cell distribution width (RDW) >16.5 and CRP are significantly associated with fatal heart failure (HF) in super-elderly patients.

The RDW is the electronic equivalent of anisocytosis or variation in the size of red blood cells. It is the coefficient of variation, i.e., (Standard deviation ÷ MCV) × 100, where MCV indicates the mean corpuscular volume. The RDW is useful in classifying nutritional deficiency anemia, especially in patients with iron deficiency anemia (IDA). IDA presents with a high RDW and a low MCV. Folic acid and vitamin B12 deficiency anemia usually presents with a high RDW and a high MCV. Anemia of chronic disease (ACD) or anemia of inflammation (AI) are typically characterized by normal RDW and MCV values, while ACD complicated by IDA presents with a high RDW and a low MCV.

In addition to blood loss/nutritional deficiencies, diseases associated with ACD in the elderly include infections (viral, bacterial, fungal), malignancies (hematological, solid tumors), autoimmune disease (rheumatoid arthritis, etc.), renal diseases and HF (2).

Increased synthesis of hepcidin, a key regulator of body iron hemostasis that is induced by inflammatory stimuli and acute phase proteins such as interleukin-6, is implicated in ACD and AI (2, 3).

The present report by Nishizaki et al. might represent the hematological states of ACD or AI complicated by nutritional deficiencies, especially IDA. Using MCV in combination with RDW is recommended in order to identify the precise cause of anemia, since these parameters are simultaneously determined by automated hematology analyzers.

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References