Relationship between the Red Cell Distribution Width and One-year Outcomes in Chinese Patients with Stable Angina Pectoris

Key words: RDW, angina pectoris, hepcidin


To the Editor We read with interest the recent article in Internal Medicine (1), reporting that an elevated red cell distribution width (RDW) value is associated with an increased risk of one-year adverse outcomes in patients with stable angina pectoris. The authors mentioned that the mechanism underlying this phenomenon remained unknown.; however, they speculated that inflammation plays a pivotal role, as an elevated RDW value is significantly correlated with an elevated high-sensitivity C-reactive protein (hs-CRP) level.

The increased synthesis of hepcidin in the liver, a key regulator of body iron homeostasis, induced by inflammatory stimuli, such as acute-phase proteins of CRP and interleukin-6, is implicated in the pathogenesis of anemia of chronic disease (ACD) and inflammation (AI) (2). An increased serum level of hepcidin inhibits the absorption of iron from the intestinal epithelium and the release of stored iron from macrophages into the circulation (2). These effects result in functional iron deficiency anemia (IDA) in patients with ACD and AI (2, 3).

The value of RDW indicates anisocytosis or variation in the size of red blood cells. In patients with IDA, RDW values are high and mean red cell volume (MCV) is low.

An elevated RDW value possibly indicates functional IDA in patients with coronary disease (1, 4). Measuring the serum level of hepcidin and red blood cell indices, including MCV, is recommended in order to clarify the mechanisms underlying the elevated RDW values observed in these patients.

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References