To the Editor,

Red cell distribution width (RDW) has traditionally been considered useful in the differential diagnosis of anemia. RDW, which is routinely reported in complete blood counts as a statistical concept, is a measure of the variation in red blood cell volume. The use of RDW for follow-up and intervention setting, and the secondary prevention of the problems associated with substance use. We agree with these authors that this course of action is an exercise in professionalism and should not be limited to emergency departments and inpatients, but should be extended systematically to all health care settings.

REFERENCES


3. See related article: http://dx.doi.org/10.1016/j.rec.2014.07.002

In recent years, interest has significantly increased in RDW as a risk marker in cardiovascular research. Several studies have shown that high RDW levels are associated with higher mortality among patients with heart failure, coronary artery disease, myocardial infarction, and in those undergoing percutaneous coronary intervention.

In a recent study published in Revista Española de Cardiología, Sánchez-Martínez et al showed that in non-ST-segment elevation acute coronary syndrome patients, elevated RDW values were predictive of increased major bleeding risk and provided additional information to the CRUSADE scale. The authors studied 293 consecutive patients with an established
final diagnosis of high-risk unstable angina or non-ST segment elevation myocardial infarction.

The authors measured RDW values only at admission and did not collect data on bleeding events or stent thrombosis during hospitalization. Increased RDW levels are also associated with aging, sex, genetic factors, thyroid diseases, renal or hepatic dysfunction, inflammatory disease, nutritional deficiency, and medications.7

Sánchez-Martínez et al6 grouped anemic and nonanemic patients together in the analysis. However, in patients with acute coronary syndrome, functional iron deficiency anemia can be seen as a result of increased synthesis of hepcidin in the liver.8 Hepcidin, a peptide hormone, is also found in the heart and its expression is regulated by hypoxia and inflammation. An increased level of hepcidin inhibits the absorption of iron from the intestinal epithelium and blocks iron release from macrophages.8,9 As iron has detrimental effects in arteriosclerosis and ischemia/reperfusion,10 an elevated RDV value in patients with coronary artery disease possibly indicates functional iron deficiency anemia rather than worse clinical outcomes. It can be speculated that elevated RDW values are a reflection of reduced iron-toxicity in the infarcted myocardium.

In addition, a recent study by Meroño et al11 showed that nosocomial anemia without apparent bleeding in patients with acute coronary syndrome was a frequent complication (25%) and a predictor of mortality and cardiovascular complications during the first year of follow-up. Nosocomial anemia was associated with a marked inflammatory state, indicated by increased C-reactive protein levels.

Finally, the authors suggest that future research should assess the potential role of including RDW values in bleeding risk scales to improve the stratification of non-ST-segment elevation acute coronary syndrome patients, especially after hospital discharge. Should physicians be alerted to a higher risk of major bleeding by the presence of a higher RDW without a universally accepted cut-off value and a single measurement of RDW alone without taking into consideration other inflammatory indicators? If so, while the imprecision values are not defined, is it useful to follow RDW as a surrogate marker of subsequent adverse outcomes, much as a diabetologist follows glycated hemoglobin? More importantly, how can we manipulate the RDW to improve outcomes? Thus, when a mechanism explaining the association of RDW with adverse outcome is developed and definitive interventions to reduce RDW are identified, it will become a member of the standard evaluation test panel for our patients. Currently, the only clear thing about RDW is its ability to predict adverse outcomes.

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REFERENCES