Is Red Cell Distribution Width a Marker for the Presence and Poor Prognosis of Cardiovascular Disease?

Kırmızı Kan Hücre Dağılım Genişliği Kardiyovasküler Hastalık Varlığı ve Kürt Gidişati için Bir Gösterge midir?

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Abstract

Red cell distribution width (RDW) is an indices heterogeneity of cell size in the peripheral blood and has been shown to be an independent correlate of adverse outcomes in healthy subjects and in some cardiac conditions. Additionally, RDW is associated with both the presence and the complexity of vascular disease. In this review we investigate the importance of RDW in vascular disease in the light of recent information.

Key Words: Acute cardiovascular events, Cardiovascular disease, Red cell distribution width

Introduction

Red cell distribution width (RDW) is a measure of the variability in the size of circulating erythrocytes (anisocytosis) [1]. Elevated RDW levels can be observed in many clinical conditions, such as hemolysis, after blood transfusions and in response to ineffective red cell production, which can be caused by deficiencies in iron, vitamin B12 or folate. RDW is also increased in certain clinical states, such as pregnancy, thrombotic thrombocytopenic purpura and inflammatory bowel disease. Due to a lack of knowledge regarding its historical prognostic significance, RDW has previously been ignored beyond the evaluation of anemia.

Recently, many studies have revealed that the baseline RDW value has been shown to be associated with long term adverse events in both acute and chronic conditions, such as acute myocardial infarctions (MI), heart failures, stable angina, stroke, and peripheral artery disease, as well as in patients who are free of coronary disease [2-8]. These results were observed even after adjusting for multiple potential confounders, including anemia. Additionally, RDW is associated with both the presence and complexity of coronary artery disease (CAD) [9]. In this review, we investigate the importance of RDW in vascular disease by considering the recent literature.

Healthy subjects and RDW

Previous studies reported that RDW was associated with poor prognosis rather than simply with vascular disease. Chen et al. [8] concluded that elevated RDW values were associated with an increased risk of all-cause mortality in patients without known heart disease. Furthermore, Perlstein et al. [7] showed that RDW strongly predicted all-cause and cardiovascular mortality. Similarly, Patel et al. [10] demonstrated that RDW was a powerful predictor of mortality in older adults with and without major age-associated diseases.

Stable vascular disease and RDW

Red cell distribution width is a significant prognostic marker for stable vascular disease. Lappe et al. [11] demon-
In conclusion, as an inexpensive index that is routinely reported as a part of the complete blood count, RDW is an important marker for both diagnostic and prognostic purposes in various clinical cardiovascular settings.

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References


