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Red cell distribution width and nonalcoholic steatohepatitis

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Abstract

Red cell distribution width is a measure of deviation of the volume of red blood cells. It is a marker of anisocytosis and often used to evaluate the possible causes of anemia. Elevated red cell distribution width levels are also associated with acute and chronic inflammatory responses. In nonalcoholic steatohepatitis, inflammation is accompanied with steatosis. For assuming red cell distribution width as a marker of nonalcoholic steatohepatitis, intervening factors such as levels of inflammatory markers should also be evaluated.

Key words: Red cell distribution width; Steatohepatitis; Inflammatory markers; Steatosis; Fibrosis

Core tip: Red cell distribution width is a marker of anisocytosis and often used to evaluate the possible causes of anemia. Elevated red cell distribution width levels are also reported to be associated with acute and chronic inflammatory responses. In nonalcoholic steatohepatitis, hepatic steatosis is associated with hepatic inflammation. As red cell distribution width is not a specific marker, for assuming it as an indicating marker of nonalcoholic steatohepatitis and fibrotic stage, other confounding factors such as levels of inflammatory markers might be evaluated.

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TO THE EDITOR

Cengiz *et al*[1] reported the role of red cell distribution width (RDW) as an indicating marker of nonalcoholic steatohepatitis and fibrotic stage in a recent issue of *World Journal of Gastroenterology*. This study provides scientific information on the clinical utility of RDW for indicating the presence of nonalcoholic steatohepatitis (NASH). Although there are some papers indicating a relationship between RDW and NASH[2] and fibrosis[3], we think that some points should be discussed in this article. First, the progression of NASH is strongly associated with lobular inflammation in liver and chronic systemic inflammation[1]. It has been reported that acute and chronic inflammatory responses are associated with elevated RDW levels[4]. There is no information regarding the inflammatory status of all subjects, such as levels of C-reactive protein, tumor necrosis factor-alpha, and interleukin 6 in the study. Second, medication (for example antihypertensive drugs including selective β1 receptor blockers) in the patients with NASH is not stated in the text. RDW is a marker of anisocytosis (red cell size variation), which is usually evaluated with a fully automated hematology analyzer, as part of the complete blood count[5]. The RDW levels may also reflect neurohumoral activation, thyroid disease, acute or chronic inflammation and the use of selective β1 receptor blockers such as nebivolol and metoprolol[6,7]. Therefore, in our opinion,

assessment of RDW could not provide reliable information. Finally, the authors investigated the relationship between the RDW levels and the presence of NASH and also fibrotic score in patients with NASH[1]. Assuming RDW as an indicating marker of NASH and fibrotic stage needs evaluation of other intervening factors such as levels of inflammatory markers. The findings of this article would be more valued if additional data for major metabolic confounders have been mentioned.

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