

Hemogram parameters for predicting pulmonary embolism in patients with deep venous thrombosis

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Dear editor

We read the article of Sevuk et al,¹ published in the August 2015 issue of your journal, with great interest. The authors concluded that percentage change in serial measurements of mean platelet volume (MPV) and platelet-distribution width (PDW) is valuable in predicting the development of pulmonary thromboembolism in patients with a previous history of deep venous thrombosis (DVT). In a similar study conducted by Braekkan et al² (Tromsø Study), MPV on admission was shown to predict pulmonary thromboembolism.

In a study by Zorlu et al,³ red cell-distribution width (RDW) values $>14\%$, which is another parameter included in complete blood count, were associated with increased risk of mortality in the early period after pulmonary thromboembolism. RDW can be easily measured in routine hemograms, and indicates changes in erythrocyte-distribution width.⁴ Certain inflammatory cytokines released in response to acute heart failure occurring in acute pulmonary embolism may cause an increase in RDW values through inhibition of erythrocyte maturation by affecting bone marrow.⁵⁻⁷ It is realized that the study by Sevuk et al¹ did not include RDW in statistical analysis. Considering the fact that RDW has been previously documented to increase mortality in pulmonary thromboembolism,³ we suggest that RDW may be increased in patients with DVT due to acute pulmonary embolism and associated acute right heart failure and thus play a role in predicting the development of pulmonary embolism.

In conclusion, RDW, which is measured in routine hemograms together with MPV and PDW, is an easy parameter to access, so authors might include RDW in statistical analysis. We think that if RDW levels were used for this study together with MPV and PDW, RDW might change the results of multivariate analysis and might be one of the predictors of pulmonary embolism in patients with DVT.

Disclosure

The authors report no conflicts of interest in this communication.

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Authors' reply

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Dear editor

We read with great interest the letter to the editor written regarding our article, and appreciate the opportunity to respond to the letter.¹

Red blood cell-distribution width (RDW) is an easily available and affordable laboratory test that measures variation in red blood-cell size or red blood-cell volume. Recent studies have shown that elevated RDW was associated with

the mortality rate of many disease states. Zorlu et al found that high RDW was associated with worse hemodynamic parameters and increased risk of mortality in patients with acute pulmonary embolism (PE).² In a study by Cay et al, RDW was reported to be associated with the presence and severity of deep venous thrombosis (DVT).³ Additionally, a recent report by Bucciarelli et al associated elevated levels of RDW with risk of venous thromboembolism.⁴

We agree that RDW may be associated with PE in patients with DVT, and may play a role in predicting the development of PE in patients with DVT. In future research, we plan to include RDW in our experimental design.

Disclosure

The authors report no conflicts of interest in this communication.

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