□ LETTERS TO THE EDITOR □

Red Blood Cell Distribution Width for Heart Failure

Key words: anemia, heart failure, mean corpuscular volume, red blood cell distribution width

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The Authors Reply We appreciate Shinohara's highly suggestive letter regarding our study (1). He recommends evaluating the mean corpuscular volume (MCV) upon examination of the red blood cell distribution width (RDW) in order to obtain a precise understanding of the cause of anemia. He presumes that our study population exhibited clinical features of the super-elderly and that RDW values can be influenced by the hematological state of anemia of chronic disease (ACD) or anemia of inflammation (AI) induced by nutritional deficiencies.

In our study, we used serum albumin values as an index of nutritional status. These values did not show any significant differences between the heart failure and non-heart failure groups. In addition, in the statistical analyses, we selected the hemoglobin concentration as a variable in the multivariate logistic model in order to minimize the influence of anemia. Therefore, we paid considerable attention to the influence of nutritional deficits and anemia; however, assessing MCV would have surely improved the thoroughness of our study.

As for MCV, Myojo et al. recently reported that macrocytosis, defined as an MCV >100 fL, is a predictor of cardiovascular events in postpercutaneous coronary intervention

patients (2). They further reported that, in their study, the values of MCV in the statin therapy group were significantly lower than those in the non-statin therapy group. It is assumed that MCV is related to red blood cell morphology and the stability of erythrocyte membranes. Because erythrocyte membranes deliver oxygen and carbon dioxide, they function as antioxidants and can potentially be exposed to oxidative stress. Based on these background factors, the authors considered that oxidative stress plays a certain role in the relationship between macrocytosis and cardiovascular events. Because it has been reported that statins exhibit not only lipid-lowering effects, but also protective effects against oxidative stress, the authors pointed out that the antioxidant effects of statins could be a reason for the low MCV values observed in the statin therapy group.

As mentioned above, the relationship between heart failure and MCV is very important and has attracted attention from various angles. We hope that the mechanisms underlying the relationship between red blood cell morphology and cardiovascular events will be clarified by further studies.

The authors state that they have no Conflict of Interest (COI).

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References

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