Correspondence

Supportive presumptive diagnosis of *Plasmodium vivax* malaria

To the Editor

I read with interest the article by Koltas et al,[1] in which they did not specify the kind of hematology analyzer that has been applied. Using laser hematological analyzers such as H1 or Sysmex with other systems may have different results in the measurement of red blood cell (RBC) indices. The degree of infection in vivax malaria does not exceed 1% erythrocytes, such as 50,000 parasites/µl blood, as the merozoites can only invade reticulocyte. In practice, the common parasitemia in acute vivax malaria is considerably less than 1% RBC or 8,000-10,000 parasites/µl, although parasitemia rates in asymptomatic patients are often quite low. In a recent study in western Thailand, the parasitemia rate in 98 *Plasmodium vivax*-positive individuals was 155 parasites/µl blood (0.003%).[2]

It is difficult to believe that enlargement of a maximum 1% of erythrocytes might have enough impact on red cell distribution width (RDW) increase. Perhaps in vivax malaria infection, there are some other unknown mechanisms, which affects RBC enlargement that leads to an increase in RDW.

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Reply from the Author

We thank Dr. Hamedi for his interest in our work, and his valuable comments on our article.[1] We agree that laser hematological analyzers may have different results in the measurement of RBC indices. However, the analyzer used in our study does not work by optical (laser) principles, it is primarily based on electrical impedance technologies. Hence, the comments of the correspondent do not target our study. The low parasitemia in vivax malaria, especially in asymptomatic cases is generally observed.[3] Our study does not cover asymptomatic cases. We do not discuss the percentage of erythrocyte invasion, but the range of changes in size of RBC, comparing the sizes among circulating RBC; regardless of their number or the invasion of reticulocytes. The aim of the study was the demonstration of RDW increase as a supportive presumptive diagnosis but not a definitive diagnosis in vivax malaria, which has been achieved. As the correspondent indicates, it opens the way to further investigations to precise the mechanism of this change of size.

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