Comment on: Red blood cell distribution width as a surrogate biomarker of damage and disease activity in patients with systemic lupus erythematosus

Sirs,

We have read with great interest the recently published article by Mercader-Salvans *et al*. (1). This study evaluated the role of red blood cell distribution width (RDW) as a marker of both damage and disease activity in systemic lupus erythematosus (SLE). As the authors stated, this is the largest study studying the usefulness of this interesting parameter in SLE. Moreover, the authors described the RDW association with the individual items of both the SLEDAI-2K score and the SLICC Damage Index after adjustment, confirming its high value in the setting of SLE.

Our group has extensively studied the role of RDW in inflammatory conditions such as sepsis and severe COVID-19, in addition to SLE (2-4). In parallel, we tried to unveil the molecular mechanisms underlying the increased anisocytosis in a systemic inflammation environment (5). In this line of work, we showed that RDW is an independent prognostic marker of death in septic patients admitted to the ICU, improving SOFA, LODS, APACHE-II and SAPS-II scores discrimination ability. Similarly, we confirmed that RDW values were higher in deceased patients from severe COVID-19 than in survivors, even after adjustment by haemoglobin levels or tocilizumab exposure. In both studies, RDW displayed a better discrimination ability for mortality than other markers such as C-reactive protein, procalcitonin or ferritin. In SLE, likewise the study from Mercader-Salvans *et al*., RDW in our smaller cohort was associated with serological activity and correlated with SLEDAI-2K and SLICC/ACR scores (1). However, our investigation also showed that interleukin-6 (IL-6), key in both COVID-19 and SLE pathogenesis, was the determinant of the higher RDW values seen in these settings (5-7). Therefore, in SLE, RDW presented a linear correlation with IL-6 levels after adjustment by age and haemoglobin values. Accordingly, we believe that our research complements the study by Mercader-Salvans *et al*.

Altogether, it seems that RDW could indeed be a reliable parameter monitoring SLE activity due to IL-6 systemic and pleiotropic effects on haematopoiesis (8). However, further studies are needed in order to validate the findings from our colleagues and to understand RDW activity-monitoring ability in patients under immunosuppressant drugs and other haematological conditions.

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