The Relationship Between Red Cell Distribution Width, Absolute Lymphocyte Count, and Rheumatoid Arthritis

To the Editor:

We read with interest the recent publication by Lange and colleagues on the red cell distribution width (RDW) and absolute lymphocyte count (ALC) associated with biomarkers of inflammation and subsequent mortality in rheumatoid arthritis (RA). The authors concluded that RDW and ALC before disease-modifying antirheumatic drug (DMARD) therapy are associated with biomarkers of monocyte/macrophage inflammation and subsequent mortality. We support and appreciate the authors’ work and agree with their conclusions but have some concerns about some of the details in the article.

First, although the authors discussed limitations of this study, which is that the cohort analysis was retrospective and they were “unable to directly comment on quantitative indicators of RA activity” such as Disease Activity Score in 28 joints (DAS28) or DAS28–C-reactive protein (CRP), the disease activity of RA is closely related to RDW, ALC, and multiple inflammatory markers. Studies have shown that for patients with moderate to high RA disease activity, as disease activity increases, RDW and inflammatory markers also become significantly positively correlated, and the prognosis is poor. Although DAS28 or DAS28–CRP is one of the widely used standards for the clinical evaluation of RA disease activity, previous studies have found that the DAS28 standard is relatively loose and may cause delayed evaluation of the disease condition for patients who cannot obtain laboratory test results in a timely manner; therefore, it is no longer recommended for the evaluation of RA disease activity. Other standards for evaluating RA disease activity, such as the Simplified Disease Activity Index (SDAI) and Clinical Disease Activity Index (CDAI), evolved from the DAS standard and are easy to calculate and also correlate well with joint damage and physical function. Therefore, the authors may consider adding composite disease activity indexes such as SDAI and CDAI as direct quantitative indicators for determining RA activity.

Second, RDW, ALC, and inflammatory markers measured at a single timepoint may not be sufficient to reflect the true inflammatory state of patients with RA throughout the entire follow-up period, especially when there are other diseases such as infections and cancers that can affect the above data. We strongly recommend that the authors provide the dynamic disease activity status of each visit during the entire follow-up period (e.g., at 3, 6, 9, and 12 months) and time-adjusted RDW, ALC, and inflammatory markers. Such time-adjusted data as the preferred outcome are worth considering.

Third, in the real world, disease activity and inflammatory status in patients with RA are influenced by numerous variables, especially changes in the treatment regimen with DMARDs and biologics that alter disease activity. DMARDs can directly affect the inflammatory status in patients with RA and variables such as RDW and ALC that indirectly reflect magnitude of the DMARDs. Were all patients on a fixed treatment regimen throughout the 10-year follow-up? If not, how did the authors account for the effect of medication regimens on inflammatory marker levels in patients in the complex practice setting?

In conclusion, before these issues are clarified, this study’s findings should be interpreted cautiously.

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The authors declare no conflicts of interest relevant to this article.

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REFERENCES