



## Red blood cell distribution width is worthwhile when interpreted with other inflammatory markers

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### To the Editor

In a recent issue of *Journal of Geriatric Cardiology*, we read the article by LIU, *et al.* with interest.<sup>[1]</sup> They aimed to investigate whether red cell distribution width (RDW) had a relationship with mortality in elderly patients after percutaneous coronary intervention (PCI). The authors concluded that, RDW is an independent predictor of the increased intermediate-term all-cause mortality in elderly patients after PCI. The easy availability of testing for RDW at no additional cost may encourage its broader use in clinical practice. We would like to thank the authors for their comprehensive contribution.

Red blood cell distribution width is a quantitative measure of red blood cell anisocytosis and can be easily determined by routine complete blood counts.<sup>[2]</sup> Previous studies showed that increased RDW values are associated with poor prognosis in various diseases including coronary artery diseases.<sup>[3–5]</sup> Red blood cell distribution width has an important caveat that many conditions can affect it. We can enlist these conditions as ethnicity, neurohumoral activation, renal dysfunction, thyroid disease, hepatic dysfunction, nutritional deficiencies (i.e., iron, vitamin B12 and folic acid), bone marrow dysfunction, inflammatory diseases and chronic or acute systemic inflammation.<sup>[6]</sup> It deserves special attention, because inflammatory status is directly associated with increased RDW values. RDW itself alone especially without other inflammatory markers may not give healthy information to clinicians. Adding other parameters such as mean platelet volume, neutrophil/lymphocyte ratio, C-reactive protein, procalcitonin, etc., would make this study more precise.

Secondly, as the authors conducted the study retrospec-

tively, the time elapsed between sampling and measuring the RDW levels were unknown. As shown in previous studies, delaying blood sample may cause to abnormal results in RDW values.<sup>[7]</sup>

RDW has become popular in recent studies because of its easy assessment. LIU, *et al.*<sup>[1]</sup> showed that we can use that easy laboratory test as a prognostic marker in elderly patients after percutaneous coronary intervention. But clinicians must keep in mind that RDW values can be affected by many disease states and blood sampling errors.

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## Author's Reply

Red cell distribution width (RDW) had been widely used for the differential diagnosis of anemia. Recently the elevation of RDW was found to be correlated with poor prognosis of percutaneous coronary intervention (PCI).<sup>[1-4]</sup> However, the underlying mechanism was not yet determined. Some studies found that the elevation of RDW was closely correlated with the elevation of C-reaction protein (CRP) and neutrophil/lymphocyte ratio, while other studies found no statistically significant correlation between RDW and CRP.<sup>[5-8]</sup> Some PCI researches didn't include inflammatory factors such as CRP for analysis.<sup>[9-10]</sup> The correlation of elevated RDW and poor prognosis of PCI might be influenced by multiple factors including inflammation. Still, further researches were needed.

All the patients recruited in our study received elective PCI,<sup>[11]</sup> and all the fasting blood samples were collected before operation and sent to the lab without delay.

Elevated RDW was influenced by many clinical factors and represented the independent risk factor for poor prognosis of PCI. Clinicians should consider the indicator while caring for patients receiving PCI.

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