

The Red Cell Distribution Width May Be Affected by Many Factors in the Clinical Practice

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Dear Editor,

We have read with great interest, the recently published article which was entitled, "The Red Cell Distribution Width as a Sensitive Biomarker for Assessing the Pulmonary Function in Automobile Welders- A Cross Sectional Study" which was written by Subhashree and coworkers [1]. In that very well-presented article, they had aimed at evaluating the strength of the relationship between the RDW and the FEV1/FVC ratio % in automobile welders. They concluded that an increased RDW could be used as a biomarker to identify the pulmonary compromise in automobile welders.

The red cell distribution width is a measure of the variabilities in the sizes of the circulating red blood cells and it is a part of the Complete Blood Count (CBC) panel. Determination of the RDW is frequently used as a method for the differential diagnosis of anaemia and it may be elevated in any conditions where reticulocytes are released into the circulation. The RDW has a standard laboratory parameter that shows the variations in the red blood cell sizes on a standard haemogram and it is usually determined for assessing blood diseases. It is associated with the mortality, both in the general population and in patients with certain diseases. The RDW has recently been defined to highly correlate with the short- and long-term outcomes in different clinical settings. However, the conditions in the differential diagnosis of the anaemias may affect the RDW and so, this parameter might be changed in the presence of any abnormalities such as thyroid disease, renal or hepatic dysfunction (creatinine of >1.5 mg/dl, aspartate aminotransferase and alanine transaminase levels which are more than twice the upper limit of the normal level, respectively), inflammatory diseases, and the use of any medications which may possibly interfere the RDW. On the other hand, it has also been reported that an increased RDW is associated with a nutritional deficiency (i.e., iron, vitamin B₁₂, and folic acid) genetic factors, gender differences and the ethnicity [2]. For these reasons, if the authors had mentioned these factors, it would be better.

Welders have performed to build the auto-body parts, equipment, and equipment repair or maintenance for a long time. Welding may cause physical and chemical health hazards. Many components of the welding gases can probably affect the lung function. Restrictive and obstructive lung abnormalities, and airway irritation symptoms are associated with spot and arc welding exposures [3]. The welding

exposures are considerably associated with the white blood cell count, the blood neutrophil count, the eosinophil count, and the interleukin-6 level after adjusting for other factors [4]. Additionally, the determination of not only RDW, but also that of the neutrophil lymphocyte ratio, uric acid, a gamma-glutamyltransferase [5] and MPV are easy methods which can be used for assessing the pulmonary function in automobile welders [6]. These markers may be useful in the clinical practice [7]. Finally, the RDW was measured by using a Sysmex KX-21 haematology analyzer, within 4 hours of the sample collection in the present study. This is important, because the delaying blood sampling can cause abnormal results in the RDW measurements.

In conclusion, we strongly believe that the findings which were obtained from the current study will lead to further large-scale studies which examine the relationship between the RDW and the pulmonary compromise in automobile welders. However, one should keep in mind that the RDW itself, without other inflammatory markers, may not give accurate information to the clinicians about the inflammatory statuses and the prognostic indications of the patients. So, from that point of view, we think that it should be evaluated, being accompanied by other serum inflammatory markers.

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