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Editorial

Importance of platelet and red blood cell indices place in predicting the illness severity

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For assessing the severity of illness and treatment progress, the platelet and red blood cell indices have a significant role. Any deviation of serum platelet indices like platelet distribution width (PDW) is reported in the sequence of clinical diseases and inflammatory reaction. Low levels of PLT, high value of MPV and PDW value is linked with a severe form of illness. Additionally, patients suffer from a high death risk when they show a low PLT and PCT count or increased levels of MPV and PDW in comparison to the patients having normal PLT indices. Red cell distribution width (RDW) is a quantitative technique being used for measuring anisocytosis. A rise in the rate represents a high level of heterogeneity in the red blood cells (RBCs) size. A significant correlation is observed between RDW and the morbidity and mortality risk in patients having multiple ailments.

An inexpensive and suitable measurement of the size variation of RBCs is the Red cell distribution width (RDW). This is the index of heterogeneity which is commonly being used together with various laboratory investigations for making the differential diagnosis of diseases of hematological system, bone marrow dysfunction and iron deficiency anemia.¹ The flow cytometric and impedance counters is calculated directly from the RBC histogram. The RDW is assessed using pulse-height analysis

and is revealed as coefficient of variation (CV) in the percentage of measurements of the red cell volume or as standard deviation (SD) in femtoliters (fL).

RDW value below the standard value is not common and is meaningless clinically, whereas values which are above the normal value reflects the anisocytosis presence. This might be related to the incidence of large and small red blood cells (RBCs), or presence of both.² Recently data reveals that values of RDW are common in patients having different ailments, mainly in patients who are critically ill and suffering with cardiovascular diseases (CVDs), diabetes, cancer and infection.³ The RDW is considered as an independent and strong risk parameter for mortality rate in the common population. It is not proved that whether a raised RDW level is considered as a risk factor or as a phenomenon of imbalance between underlying metabolic and biological factors. It is suggested that by evaluating RDW, one can make the differential diagnosis of anemia and it can be considered as a “non”-innocent parameter.⁴

Platelet (PLT) is an essential and main blood component that plays a significant function in pathological and physiological processes like thrombosis, coagulation, inflammation and maintaining the vascular endothelial cells integrity. PLT indices are different parameters being utilized to determine the total platelet count, proliferation kinetics and morphology of platelets. Various studies have advocated that platelet indices are associated with the illness severity

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and prognosis of patients. A decrease in the count of platelet is an autonomous risk factor for crucially ill patients. Platelet distribution width (PDW) is a routine parameter used in routine blood examination, reflecting disparity in the distribution of platelet size in a range of 8.3–56.6%. When platelet is activated, a morphological change is observed in the setting of inflammation. PDW is used as an activated platelet sign in various diseases of inflammation. Authors have revealed that changes in PDW level under particular circumstances in comparison to healthy adults. Erez et al.⁵ stated that thrombin activation was raised in some significantly ill conditions due to which morphological alterations are seen in platelets: they get larger by attaining spherical shape and forming pseudopodia. This result in platelets having increased size and number of pseudopodia having different sizes causing variations in PDW.

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