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Letter to the Editor / Editöre Mektup

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The Role of Hematological Parameters in the Management of Viral Infections

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Viral Enfeksiyonların Yönetiminde Hematolojik Parametrelerin Rolü

Anahtar kelimeler: Virüsler, Virüs Hastalıkları, Biyobelirteçler.

DEAR EDITOR

We read with great interest the article titled "Platelet to Lymphocyte Ratio in Respiratory Syncytial Virus Infection", prepared by Ardıcoglu Akışın et al., and published in the first issue of the sixth volume of your journal Eurasian Journal of Health Sciences (Ardıcoglu Akışın et al., 2023). We would like to thank the authors and the editorial board for the article investigating the role of platelet to lymphocyte ratio and platelet to lymphocyte and monocyte ratio values in respiratory syncytial virus infection. However, we would like to point out a few points that may contribute to the discussion of the article.

Viral infections continue to be a significant global health concern, with a wide range of clinical manifestations and potential complications. The management of viral infections requires a multifaceted approach that includes the use of hematological parameters to assess disease severity, guide therapeutic interventions, and monitor treatment response (Özdemir and Algın, 2021; Luo and Gao, 2020). This mini review provides a comprehensive overview of the role of hematological parameters in the management of viral infections, focusing on their diagnostic, prognostic, and therapeutic implications.

The White Blood Cell (WBC) count, particularly the differential count of leukocytes, is a key indicator of the immune response to viral pathogens. Changes in the WBC count, such as leukocytosis or leukopenia, can provide valuable diagnostic information and help differentiate viral infections from bacterial infections or other inflammatory conditions. Additionally, the presence of atypical lymphocytes may suggest a viral etiology, further aiding in the diagnostic process (Shallal et al., 2020; Aydın et al., 2022).

The Red Cell Distribution Width (RDW) is a parameter measured in blood tests that reflects the variation in size of red blood cells. In the context of viral infections, RDW is often regarded as an indicator of inflammation and cellular stress (Ozdemir and Ozkan., 2022). Viral infections can increase systemic inflammation and affect the production of red

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blood cells. This can lead to an increase in the variability of red blood cell size and shape, resulting in elevated RDW levels. High RDW levels may serve as an indicator for assessing the severity of viral infections or predicting disease prognosis. However, the use of RDW alone in diagnosing viral infections is not common and is typically evaluated in conjunction with other hematological and clinical findings (Owoicho et al., 2022).

Thrombocytopenia is a common finding in viral infections and can result from direct viral-induced bone marrow suppression or immune-mediated destruction of platelets. Monitoring platelet counts and indices, such as mean platelet volume (MPV) and platelet distribution width (PDW), can provide insights into the pathogenesis of viral infections and help predict the risk of bleeding complications (Raadsen et al., 2021).

Certain viral infections, such as HIV/AIDS, CMV, or parvovirus B19, can cause hematological complications, including anemia, thrombocytopenia, or hemophagocytic lymphohistiocytosis. Recognizing these complications and addressing the underlying viral etiology are essential for optimizing patient care and improving outcomes (Zhang et al., 2023; Kalmuk et al, 2019; Dikshit et al., 2009).

Hematological parameters can also serve as prognostic markers in viral infections, helping to predict disease progression and identify patients at higher risk of developing complications. Levels of specific hematological markers may indicate a more severe disease course and the need for more aggressive management strategies (Ozkan et al., 2022; Awoke et al., 2023).

In conclusion, hematological parameters play a critical role in the management of viral infections, providing valuable diagnostic, prognostic, and therapeutic information. Understanding the dynamic interplay between viral pathogenesis and hematological alterations is essential for optimizing patient care and improving outcomes in viral infections. Further research is needed to elucidate the specific mechanisms underlying these hematological changes and their implications for the management of viral infections.

CONFLICT OF INTEREST

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