

Letter to the Editor

Respiratory Syncytial Virus infection is Strongly Correlated with Decreased Mean Platelet Volume

Ergenekon Karagoz¹, Vedat Turhan¹

Received: March 04, 2014

Accepted: April 08, 2014

Dis Mol Med 2014;2: 15-16

DOI:10.5455/dmm.20140408050313

Key words: respiratory syncytial virus, illness severity, mean platelet volume

Dear Editor,

We have read the recently published article entitled “Respiratory Syncytial Virus infection is strongly correlated with decreased Mean Platelet Volume” by Renshaw et al in International Journal of Infectious Diseases with great interest (1). They aim to evaluate the relationship between MPV and respiratory syncytial virus infection (RSV), and they concluded that RSV is associated with the decreased MPV levels; this conclusion might be useful in children undergoing bronchoscopy. The ready availability of this parameter at no additional cost may encourage its utilization in clinical practice. We would like to thank the authors for their contribution.

It has been known that MPV is a measurement describing the average size of the platelets. It is also a sign of inflammation and its various intensity (2).

MPV has recently been seen to be highly associated with short and long-term outcomes in different clinical settings. For instance, elevated MPV levels have been found to be related to thrombocytopenia, autoimmune disorders, congestive heart failure, acute pulmonary emboli whereas, lower MPV values have been described in patients with anemia, chronic renal failure, ulcerative colitis, and Crohn’s disease (3).

In the literature, there are only a few studies examining the relationship between infections and MPV. For example, tuberculosis infection has been associated with higher MPV values which decrease with anti-biotherapy(4). In addition, elevated MPV was found to be associated with Crimean Congo Hemorrhagic Fever (CCHF), hepatitis B and C (5-7). On the other hand, it is

also reported that low MPV levels are related to some other infections including sepsis, HIV and trichinellosis(1,8).

RSV is a common viral infection and most children have had this infection by two years of age. It usually causes lower respiratory tract infections in children younger than 2 years old presented as bronchiolitis (9). As we see, this is an inflammatory condition and should be evaluated as other inflammatory illnesses. In this view, it is reported that when there is an active inflammatory disease such as rheumatoid arthritis, inflammatory bowel diseases, platelet counts increase due to increased inflammatory cytokine activity, and breakdown of these increased larger young platelets in inflammation area lowers MPV. When such diseases are inactive, the breakdown of newly produced large platelets declines, so MPV are observed higher (10). The low MPV levels in this study may be related to high levels of active inflammation in RSV cases. In a previous study, it was identified that novel inflammatory markers including IL-1B, IL-1-RA, IL-7, Epidermal growth factor (EGF), and Hepatocyte growth factor (HGF) are associated with severe RSV infection(11). According to our knowledge, severity of RSV is related with young age, prematurity, heart and lung disease and infection with RSV group A. In this study, it would be better if the authors categorized or made a comparison of the cases according to the conditions affecting the severity of this illness. In addition, it would also be better, if they would specify how much time elapsed between the taking of the blood samples and the administration of the test measuring MPV levels because the delaying blood sampling may cause abnormal results in MPV value.

Author affiliations: ¹ GATA Haydarpaşa Training Hospital, Department of Infectious Diseases and Clinical Microbiology, Istanbul, Turkey

Correspondence to: ergenekonkaragoz@hotmail.com (E.Karagoz)

In conclusion, we strongly believe that these findings which are obtained from this study will lead to further scale studies examining the relationship between MPV levels and RSV and other infections. Nevertheless, we should keep in mind that MPV itself alone without other inflammatory markers (such as C-reactive protein, procalcitonin) may not give certain information about the inflammatory status of the patient. Therefore, we are of the opinion that MPV should be accompanied by other serum inflammatory markers.

Conflict of Interest statement

We have no competing interests to declare.

References

1. Renshaw AA, Drago B, Toraya N, Gould EW. Respiratory syncytial virus is strongly correlated with decreased mean platelet volume *Int J Infect Dis.* 2013;17:678-80.
2. Gasparyan AY, Ayvazyan L, Mikhailidis DP, Kitis GD. Mean Platelet Volume: A link between Thrombosis and Inflammation? *Curr Pharm Des.* 2011;17:47-58.
3. Ekiz O, Balta I, Sen BB, Rifaioglu EN, Ergin C, Balta S, Demirkol S. Mean platelet volume in recurrent aphthous stomatitis and Behçet's disease *Angiology.* 2014;65:161-5.
4. Tozkoparan E, Deniz O, Ucar E, Bilgic H, Ekiz K. Changes In Platelet Count Indices In Pulmonary Tuberculosis. *Clin Chem Lab Med.* 2007;45:1009-13.
5. Ekiz F, Gürbüz Y, Basar Ö, Aytekin G, Ekiz Ö, Sentürk ÇŞ et al. Mean Platelet Volume In Diagnosis And Prognosis of Crimean Congo Hemorrhagic Fever *Clin Appl Thromb Hemost.* 2013;19:441-4
6. Ekiz F, Yüksel O, Koçak E, Yılmaz B, Altınbaş A, Çoban S et al. Mean Platelet Volume As A Fibrosis Marker In Patients With Chronic Hepatitis B. *J Clin Lab Anal.* 2011;25:162-5.
7. Purnak T, Olmez S, Torun S, Efe C, Sayilir A, Ozaslan E et al. Mean Platelet Volume Increases In Chronic Hepatitis C Patients with Advanced Fibrosis. *Clin Res Hepatol Gastroenterol.* 2013;37:41-6.
8. Qadri S, Holman S, Dehovitz J, Crystal H, Minkoff H, Lazar J. Mean platelet volume is decreased in HIV-infected women. *HIV Med.* 2013;14:549-55.
9. Dawson-Caswell M, Muncie HL Jr. Respiratory syncytial virus infection in children. *Am Fam Physician.* 2011;83:141-6.
10. Tabarani CM, Bonville CA, Suryadevara M, Branigan P, Wang D, Huang D et al. Novel inflammatory markers, clinical risk factors, and virus type associated with severe respiratory syncytial virus infection. *Pediatr Infect Dis J.* 2013;32:e437-42.