Platelets

ISSN: 0953-7104 (Print) 1369-1635 (Online) Journal homepage: informahealthcare.com/journals/iplt20

Whether or not the association of MPV with coronary collateral development is independent of hs-CRP level?

Ozgur Gunebakmaz, Mustafa Duran, Mahmut Akpek & Mehmet G. Kaya

To cite this article: Ozgur Gunebakmaz, Mustafa Duran, Mahmut Akpek & Mehmet G. Kaya (2014) Whether or not the association of MPV with coronary collateral development is independent of hs-CRP level?, Platelets, 25:2, 138-139, DOI: 10.3109/09537104.2012.718384

To link to this article: https://doi.org/10.3109/09537104.2012.718384

Published online: 29 Aug 2012.

Platelets, March 2014; 25(2): 138–139
© 2014 Informa UK Ltd.
ISSN 0953-7104 print/ISSN 1369-1635 online
DOI: 10.3109/09537104.2012.718384

informa
healthcare

LETTER TO THE EDITOR

Whether or not the association of MPV with coronary collateral development is independent of hs-CRP level?

Ozgur Gunebakmaz, Mustafa Duran, Mahmut Akpek & Mehmet G. Kaya

Department of Cardiology, Erciyes University School of Medicine, Kayseri, Turkey

We have read the article reported by Ege et al. [1] with great interest. The authors reported higher mean platelet volume (MPV) levels in patients with inadequate coronary collateral development (CCD). The authors have emphasized that there is not a casual interest between MPV and CCD. According to the authors, higher MPV reflects activated inflammatory state which is associated with inadequate coronary collateral vessels.

High-sensitive C-reactive protein (hs-CRP) is a well-established marker of inflammation. In the literature, there are three studies which examine the association of hs-CRP with CCD [2–4]. In all these studies, elevated hs-CRP levels were found to be associated with poor CCD. It is well known that coronary collateral flow protects the myocardium against ischemia. So, the presence and adequacy of coronary collateral vessels is closely associated with better prognosis in patients with coronary artery disease [5]. Based on these aforementioned data, the authors of these studies claimed that one of the mechanisms responsible for bad cardiovascular outcomes in higher inflammatory state may be impairment in coronary collateralization. Furthermore, MPV has been shown to be associated with atherosclerosis, coronary events, and bad prognosis in numerous studies [6–9]. Similarly, based on the article of Ege et al. [1], it can be speculated that the association between higher MPV and bad prognosis may be partly due to poor collateral development. This hypothesis must be tested via further studies.

In addition, recently, some studies have suggested that MPV can be used as marker of inflammation and disease activity [10, 11]. Interestingly, it has been noted by Gasparyan et al. [11] that the intensity of systemic inflammation determines the size of circulating platelet size. In that, while high-grade inflammation leads to lower MPV levels, low-grade inflammation is associated with higher MPV levels. However, there is no study in the pertinent literature evaluating the simultaneous effect of both hs-CRP and MPV on CCD. Since Ege et al. hypothesize that higher MPV is related to poor collateral because of higher inflammatory state, hs-CRP may help clarify the relation between inflammation and MPV. If MPV is found independently related to CCD regardless of hs-CRP levels, then, another hypothesis will be required to explain the results of Ege et al.'s study.

Ege et al. studied neither serum levels of hs-CRP nor the MPV–hs-CRP relation in the study population. We think that further studies are needed to clarify this issue.

We hope that the above-mentioned items would add to the value of the well-written manuscript of Ege et al., which reveals – for the first time in the literature – the association of higher MPV values with inadequate CCD.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

References

1. Ege MR, Acıkgoz S, Zorlu A, Sıncer I, Guray Y, Guray U, Demirkan B, Kisacik H. Mean platelet volume: An important predictor of coronary collateral development. Platelets 2012 [Epub ahead of print].
2. Gulec S, Ozdemir AO, Maradit-Kremers H, Dincer I, Atmaca Y, Erol C. Elevated levels of C-reactive protein are associated with impaired coronary collateral development. Eur J Clin Invest 2006;36:369–375.
3. Kadı H, Ceyhan K, Karayakalı M, Koç F, Celik A, Onalan O. The relationship between coronary collateral circulation and blood high-sensitivity C-reactive protein levels. Turk Kardiyol Dern Ars 2011;39:23–28.
4. Kerner A, Gruberg L, Goldberg A, Roguin A, Lavie P, Lavie L, Markiewicz W, Beyar R, Aronson D. Relation of C-reactive protein to coronary collaterals in patients with stable angina pectoris and coronary artery disease. Am J Cardiol 2007;99:509–512.
5. Meier P, Gloekler S, Zbinden R, Beckh S, de Marchi SF, Zbinden S, Wustmann K, Billinger M, Vogel R, Cook S, et al. Beneficial effect of recruitable collaterals: A 10-year follow-up study in patients with stable coronary artery disease undergoing quantitative collateral measurements. Circulation 2007; 116:975–983.
6. Chu SG, Becker RC, Berger PB, Bhatt DL, Eikelboom JW, Konkle B, Mohler ER, Reilly MP, Berger JS. Mean platelet volume as a predictor of cardiovascular risk: A systematic review and metaanalysis. J Thromb Haemost 2010;8:148–156.
7. Wang RT, Li Y, Zhu XY, Zhang YN. Increased mean platelet volume is associated with arterial stiffness. Platelets 2011;22:447–451.

Correspondence: Ö. Günebakmaz, Department of Cardiology, Erciyes University School of Medicine, 38039 Kayseri, Turkey. Tel: 90 506 6709701. Fax: 90 352 4377634. E-mail: drgunebakmaz@yahoo.com

(Received 25 July 2012; revised 28 July 2012; accepted 1 August 2012)

8. Jung DH, Lee HR, Lee YJ, Kim JK, Park BJ, Shim JY. The association between coronary artery calcification and mean platelet volume in the general population. Platelets 2011;22:567–571.
9. Azab B, Torbey E, Singh J, Akerman M, Khoueiry G, McGinn JT, Widmann WD, Lafferty J. Mean platelet volume/platelet count ratio as a predictor of long-term mortality after non-ST-elevation myocardial infarction. Platelets 2011;22:557–566.
10. Gasparyan AY, Sandoo A, Stavropoulos-Kalinoglou A, Kitas GD. Mean platelet volume in patients with rheumatoid arthritis: The effect of anti-TNF-α therapy. Rheumatol Int 2010;30:1125–1129.
11. Gasparyan AY, Ayvazyan L, Mikhailidis DP, Kitas GD. Mean platelet volume: A link between thrombosis and inflammation? Curr Pharm Des 2011;17:47–58.