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Impact of mean platelet volume on the occurrence and severity of sudden sensorineural hearing loss

Dear Sirs,

We read the above article by Sagit *et al*. with great interest.[1] These authors investigated whether mean platelet volume was elevated in patients with sudden sensorineural hearing loss (SNHL), compared with healthy controls, and whether it was related to severity of hearing loss. They found that mean platelet volume was significantly greater in the sudden SNHL group compared with the control group. However, there was no significant correlation between mean platelet volume and hearing loss severity. This is an interesting study. However, we wish to make a minor criticism of some methodological aspects of this study.

The method used for mean platelet volume assessment is basically correct. It should be kept in mind, however, that mean platelet volume is significantly associated with smoking, obesity, coronary artery disease, metabolic syndrome, statin use and atrial fibrillation.[2] Sagit *et al*. did not state the body mass index, smoking status, or metabolic syndrome status of the patients and controls in their study. They stated that they excluded individuals with diabetes mellitus; however, the reported mean blood glucose level in the patient group was 123 ± 52 mg/dl, significantly higher than that in the control group (95 ± 16 mg/dl). This would seem to indicate that a number of pre-diabetic and diabetic individuals had in fact been included in the patient group. Previous reports have shown that mean platelet volume is strongly and independently associated with the presence and severity of pre-diabetes and diabetes.[3,4] Thus, the higher mean platelet volume values observed in the patient group might be due to higher blood glucose levels. Regression analysis is needed to eliminate the effect of blood glucose on mean platelet volume. Similarly, data on body mass index, metabolic syndrome and smoking status should have been reported and adjusted for during analysis, as all three parameters are known to increase mean platelet volume.[2,5]

Mean platelet volume values are universally available via routine blood count testing performed by automated haemograms. This provides a simple, easy method of assessing platelet function. In comparison to smaller platelets, larger ones have more granules, aggregate more rapidly with collagen, have higher thromboxane A2 level, and express more glycoprotein Ib and IIb/IIIa receptors.[2,6] We believe that mean platelet volume can be affected by many inflammatory and cardiovascular risk factors. Therefore, all possible confounding factors must be taken into account.

Recent reports have shown that inflammation is an important factor in the pathophysiology of idiopathic SNHL.[7] Platelet activation plays a major role in the pathophysiology of diseases affected by thrombosis and inflammation; accordingly, mean platelet volume might represent a link between thrombosis and inflammation.[8] It might be speculated that inflammation exists in patients with SNHL, and that this in turn causes increased platelet reactivity, reflected in increased mean platelet volume, in these patients.

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Authors' reply

Dear Sirs,

We thank Varol and Ozaydin for their valuable comments. In our study, we investigated the relation of mean platelet volume and sudden SNHL, and found elevated mean platelet volume in patients with sudden SNHL, compared with controls.[1]

In their letter, Varol and Ozaydin mention that obesity, smoking, coronary artery disease, metabolic syndrome, statin use and atrial fibrillation might have an impact on mean platelet volume.[2,3] However, as stated in the methods section of our paper, patients with coronary artery disease and hypercholesterolaemia were not included in our study. We have subsequently extracted data from our patient database regarding body mass index (BMI) and smoking