Comment on “The relationship between atherogenic index of plasma and no-reflow in patients with acute ST-segment elevation myocardial infarction who underwent primary percutaneous coronary intervention”

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Received: 18 January 2020 / Accepted: 29 January 2020 / Published online: 18 February 2020
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Abstract

We read with great pleasure the interesting study evaluating “The relationship between atherogenic index of plasma (AIP) and no-reflow in patients with acute ST-segment elevation myocardial infarction who underwent primary percutaneous coronary intervention” by Süleymanoğlu M et al. The most important problem in the study was that they miscalculated their patients’ AIP values. As a result of this miscalculation, all patients seemed to be at high cardiac risk. When calculating AIP, the unit of both triglyceride (TG) and high-density lipoprotein (HDL) levels should be taken in mmol. In calculating the AIP value, Süleymanoğlu et al. used the units as mg/dl and found the median values as 0.50 (patients with noreflow, high cardiac risk) and 0.39 (patients without noreflow, high cardiac risk), respectively. When we calculate the estimated AIP by converting units to mmol, it is 0.15 (patients with noreflow, intermediate cardiac risk) and 0.03 (patients with noreflow, low cardiac risk), respectively. Interestingly, their patients’ cholesterol levels such as total cholesterol, TG, low-density lipoprotein, and HDL were very lower than those of healthy individuals in their country. We believe that the authors should explain this situation.

Keywords Atherogenic index of plasma · ST-segment elevation myocardial infarction · Percutaneous coronary intervention

Dear Sir,

We read with great pleasure the interesting study evaluating “The relationship between atherogenic index of plasma (AIP) and no-reflow in patients with acute ST-segment elevation myocardial infarction (STMI) who underwent primary percutaneous coronary intervention” by Süleymanoğlu et al. [1]. Interestingly, their patients’ cholesterol levels such as total cholesterol (TC), triglyceride (TG), low-density

lipoprotein (LDL), and high-density lipoprotein (HDL) were very low. The most important problem in the study was that they miscalculated their patients’ AIP values. As a result of this miscalculation, all patients seemed to be at high cardiac risk. We would like to mention that how to calculate the AIP level correctly and that the cholesterol levels of the patients cannot be such low.

AIP is the logarithmic transformation of TG/HDL values. The AIP value increases with increasing the TG level and decreasing the HDL level. TG level reflects the serum small dense LDL level, the most atherogenic type of LDL. TG level is an independent risk factor for cardiac disease. HDL shows a strong antioxidant and cardioprotective effect. There are many LDL subtypes, and most of the serum LDL is buoyant LDL which has little atherogenic potential. Small dense LDL has a potent atherogenic potential. Therefore, AIP has been reported to be a stronger marker than the classical atherogenic index (TC/HDL). Cardiac risk classification according to AIP level; <0.11 low risk, 0.11–0.21 intermediate risk, 0.21 < high risk. When calculating AIP, the unit of both TG and HDL levels should be taken in mmol.

This comment refers to the article available online at <https://doi.org/10.1007/s10554-019-01766-8>.

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Although patients have a major cardiac event, their cholesterol levels such as TC, LDL, and TG are lower than expected. Compared to the values found in the dyslipidemia prevalence studies in Turkey, their acute STMI patients' cholesterol levels were lower (about TC 19%, TG 21.3%, LDL 15.5%, HDL 30%) than those of healthy individuals in Turkey [2]. Half of their patients were active smokers. Smoking increases the TG value and lowers the HDL level. If the patients' low HDL levels were due to smoking, why did not TG values increase? Also, smoking has been reported to increase the AIP value. One-third of their patients had hypertension and one-fifth had diabetes. The prevalence of dyslipidemia is known to increase in patients with hypertension and diabetes. Some patients' TG levels may likely to be postprandial. Postprandial TG values are higher. It is interesting that their cholesterol levels are low, although their patients do not receive lipid-lowering therapy. We believe that the authors should explain this situation.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest with respect to this research, authorship, and/or publication of the articles.

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