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LETTER TO THE EDITOR

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# Lipoprotein(a): an important consideration for DAPT therapy after PCI

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The interest in the letter is much appreciated for the study assessing the effect of extended dual antiplatelet therapy (DAPT) on clinical outcomes in invasively treated acute coronary syndrome (ACS) patients with different lipoprotein(a) [Lp(a)] concentrations [1]. Previous in vivo and in vitro studies revealed that Lp(a) has a pro-aggregatory effect through proteinase-activated receptor 1 (PAR1) via thrombin-mediated activation and CD36 via OxPL-mediated activation [2–3] and an anti-aggregatory effect through platelet-activating factor acetylhydrolase (PAFAH), collagen and αIIbβ3 integrin [4–5]. Although the net in vivo effect of Lp(a) on overall platelet function remains unknown, the preponderance of evidence suggests a net pro-aggregatory effect. For example, Zhu et al. reported that high plasma Lp(a) levels were significantly associated with increased platelet aggregation determined by thromboelastography in patients undergoing percutaneous coronary intervention (PCI) [6].

According to available research, for the first time, it was demonstrated that DAPT with aspirin plus clopidogrel > 1 year was significantly associated with lower risk of ischemic events without increasing the risk of clinically relevant bleeding in ACS patients with elevated Lp(a) levels after PCI, whereas the beneficial effect of extended DAPT was not detected in individuals with normal Lp(a) levels. Notably, there are two points to declare. First, clopidogrel, rather than ticagrelor or prasugrel, was predominantly used as a $P2Y_{12}$ inhibitor for the DAPT regimen. Second, the conclusions drawn from the study may not be generalized to other than Asian ethnicities. Therefore, studies using a more potent $P2Y_{12}$ inhibitor or in non-Asian ethnicities are needed to evaluate the prognostic effect of extended DAPT in ACS patients with elevated Lp(a) levels after PCI. In addition, further studies evaluating the role of aspirin and $P2Y_{12}$ inhibitors on platelet function will help us understand why prolonged DAPT had different effects in patients with different Lp(a) concentrations.

We totally agree with what was indicated in the letter which said that more complex assessment of lipid parameters including Lp(a) should be performed in clinical trials aimed at assessing DAPT modification, especially de-escalation and prolonged treatment. For example, the ongoing ELECTRA-SIRIO 2 (Evaluating Safety and Efficacy of Two Ticagrelor-based De-escalation Antiplatelet Strategies in Acute Coronary Syndrome — a randomized clinical trial) is being conducted to assess the influence of ticagrelor dose reduction with or without the continuation of aspirin versus DAPT with standard dose ticagrelor in reducing clinically relevant bleeding and maintaining antiischemic efficacy in ACS patients [7]. In addition to

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the main results of the study, we also expect what role Lp(a) plays.

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