Letter to the Editor

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Is the Duration of Dual Antiplatelet Therapy after Implantation of Drug-Eluting Stents the Longer the Better?

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Dear Editor,

On the basis of its significant effect in preventing stent thrombosis and subsequent ischemic complications, dual-antiplatelet therapy (DAPT) combining aspirin and a P2Y12 receptor antagonist has been suggested to be the mainstay of treatment for patients receiving drug-eluting stents (DES) [1]. In clinical practice, however, it may be difficult to make informed decisions on the optimal duration of DAPT because of the inconsistencies among the latest recommendations and studies [2, 3]. According to the current American College of Cardiology guidelines, aspirin should be continued indefinitely and P2Y12 inhibitor therapy should be given for at least 12 months after DES implantation [2], whereas the European Society of Cardiology guidelines recommend the continuation of DAPT for 6–12 months [3].

Recently, Mauri et al. [4] reported the results of the Dual Antiplatelet Therapy Study, which is a large randomized trial designed to test the benefits and risks of DAPT beyond 1 year for patients implanted with DES. As compared to aspirin use alone, continuing DAPT beyond 1 year could significantly mitigate the risks of stent thrombosis (hazard ratio 0.29; 95% CI 0.17–0.48) and major cardiovascular and cerebrovascular adverse events (hazard ratio 0.71; 95% CI 0.59–0.85). However, that does not mean that DAPT should be used indefinitely or such benefits could be generalized to all DES-implanted patients. This is because there is an increased risk of moderate or severe bleeding with the extension of DAPT (2.5 vs. 1.6%, p = 0.001) and some limitations still existed in this study. As clarified by the authors themselves, the study was limited by excluding those patients with a high risk of late adverse events, such as stent thrombosis and bleeding, and including four types of DES and two platelet P2Y12 inhibitors only. Taking these above limitations into account, it is still less clear whether the benefits outweigh the risks in the period of extended DAPT.

DES is currently well established as a medical device for percutaneous coronary intervention to treat patients with coronary artery disease. Concerns over the possibility of coronary stent thrombosis have led to a call for a longer duration of DAPT [5]. However, quite a few studies suggest the extension of DAPT beyond 1 year has the same effect on mitigating the risk of stent thrombosis or subsequent thrombotic events [6–8], but still increases the bleeding risk [9, 10] as compared with a shorter duration of DAPT of 6 or even 3 months, especially with the advent of new-generation DES and potent antiplatelet agents such as prasugrel and ticagrelor. Besides, because bleeding among patients prescribed DAPT is quite difficult to control, even an episode of moderate trauma can be lethal.

Therefore, on the basis of available evidence, we do not agree with the routine extension of DATP beyond 1 year for patients after DES implantation, unless there is a very high risk of late stent thrombosis. Further studies are needed to confirm the feasibility of shorter DAPT durations of 3–6 months. Moreover, the optimal duration and cessation of DAPT after DES implantation should be guided by a careful assessment of the balance between thrombotic and hemorrhagic risks at an individual patient level.

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