Correspondence

Response to Letter Regarding Article, "Optimal Duration of Dual Antiplatelet Therapy After Drug-Eluting Stent Implantation: A Randomized, Controlled Trial"

We thank Dr Sardar and colleagues for their interest in our recent article¹ and appreciate the opportunity to reply. We agree that medication adherence is associated with clinical outcomes and remains an important issue in clinical drug trials. Unfortunately, there are no definite methods for assessing adherence to medications. In our study, pill count was used to determine medication adherence, and pharmacy data were electronically checked by medical insurance system. Medical adherence in this type of study is considered generally poor. Even in the Platelet Inhibition and Patient Outcome (PLATO) trial, medical adherence was ≈80%.² In this context, we believe that medical adherence in our study seems to be acceptable.

Time from index procedure to randomization was rather variable, but most patients were enrolled between 12 and 18 months after the index procedure. Furthermore, clinical outcomes were not different after adjusting for the duration before the randomization process. As described in the study limitations, however, our findings may not be extrapolated to high-risk populations, such as those with recurrent events within 12 months after the index procedure. Bleeding risk is known to be increased in patients with chronic kidney disease. In our study, however, only a small number of patients (0.8%) had significant renal dysfunction (serum creatinine ≥ 2 mg/dL), making it difficult to analyze the association between kidney dysfunction and bleeding complication.

Finally, we agree that clopidogrel is a prodrug requiring activation in the liver, and its antiplatelet effect can be enhanced in current smokers. In our study, however, there were no significant differences of clinical outcomes in dual antiplatelet therapy group according to smoking status. Further studies may be needed to demonstrate whether there is a clopidogrel–smoking interaction in patients receiving long-term clopidogrel therapy.

Disclosures

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References

- 1. Lee CW, Ahn JM, Park DW, Kang SJ, Lee SW, Kim YH, Park SW, Han S, Lee SG, Seong IW, Rha SW, Jeong MH, Lim DS, Yoon JH, Hur SH, Choi YS, Yang JY, Lee NH, Kim HS, Lee BK, Kim KS, Lee SU, Chae JK, Cheong SS, Suh IW, Park HS, Nah DY, Jeon DS, Seung KB, Lee K, Jang JS, Park SJ. Optimal duration of dual antiplatelet therapy after drugeluting stent implantation: a randomized, controlled trial. Circulation. 2014;129:304-312.
- 2. Mahaffey KW, Wojdyla DM, Carroll K, Becker RC, Storey RF, Angiolillo DJ, Held C, Cannon CP, James S, Pieper KS, Horrow J, Harrington RA, Wallentin L; PLATO Investigators. Ticagrelor compared with clopidogrel by geographic region in the Platelet Inhibition and Patient Outcomes (PLATO) trial. Circulation. 2011;124:544-554.

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