

REFERENCES

1. Baber U, Chandrasekhar J, et al. Associations between chronic kidney disease and outcomes with use of prasugrel versus clopidogrel in patients with acute coronary syndrome undergoing percutaneous coronary intervention: a report from the PROMETHEUS study. *J Am Coll Cardiol Intv* 2017;10:2017-25.
2. Gurm HS. P2Y12 Inhibitors in patients with chronic kidney disease: the known unknown. *J Am Coll Cardiol Intv* 2017;10:2026-8.
3. James S, Budaj A, Aylward P, et al. Ticagrelor versus clopidogrel in acute coronary syndromes in relation to renal function: results from the Platelet Inhibition and Patient Outcomes (PLATO) trial. *Circulation* 2010;122:1056-67.
4. Basra SS, Tsai P, Lakkis NM. Safety and efficacy of antiplatelet and antithrombotic therapy in acute coronary syndrome patients with chronic kidney disease. *J Am Coll Cardiol* 2011;58:2263-9.

REPLY: Chronic Kidney Disease and Antiplatelet Therapy

A Worrying Gap Between Evidence Based Medicine and Clinical Practice



We thank Lozano and colleagues for their interest in this subject, and agree that the limited use of potent antiplatelet therapies in high-risk patients with chronic kidney disease (CKD) is a concern. In the PROMETHEUS study, prasugrel was not superior to clopidogrel, very likely on account of the selection bias for prescription of potent therapies (1). This bias in observational studies also obscures the ability to detect therapeutic toxicity with respect to bleeding, which contrasts with findings from randomized trials (2,3). In the PLATO (Platelet Inhibition and Patient Outcomes) trial, patients with CrCl <30 ml/min had significantly greater bleeding with ticagrelor than clopidogrel (23.6% vs. 14.1%) (4).

We also concur with the commentary from Gurm, especially his views regarding ticagrelor (5). However, cautious interpretation is necessary because although consistent treatment effects were observed with ticagrelor versus clopidogrel in CKD and non-CKD patients when using creatinine clearance, a treatment interaction was noted when using the more robust Modification of Diet in Renal Disease equation definition, both for the primary endpoint as well as for all-cause mortality (6). Whether or not these differences reflect a biological mechanism versus selection of higher-risk patients with renal impairment remains unclear.

Although the morbidity of bleeding cannot be underestimated, improved selection for potent therapies is warranted. This may be done with the usage of thrombotic and bleeding risk scores (7), and plausibly with a case-by-case decision for assessment of platelet reactivity for identification of CKD patients at lower risk of bleeding (8), who may then be selected for potent therapies. Future studies are necessary to

examine the uptake and impact of risk scores on long-term outcomes in CKD patients.

Usman Baber, MD, MS

Jaya Chandrasekhar, MBBS, MS

*Roxana Mehran, MD

*The Zena and Michael A. Wiener Cardiovascular Institute
The Icahn School of Medicine at Mount Sinai

One Gustave L. Levy Place

Box 1030

New York, New York 10029-6574

E-mail: Roxana.mehran@mountsinai.org

<https://doi.org/10.1016/j.jcin.2017.12.009>

© 2018 by the American College of Cardiology Foundation. Published by Elsevier.

Please note: The PROMETHEUS study was sponsored and funded by Daiichi-Sankyo and Eli Lilly. Dr. Mehran has received institutional grant support from AstraZeneca, The Medicines Company, Bristol-Myers Squibb/Sanofi, and Eli Lilly/Daiichi-Sankyo; and is a consultant to Abbott Vascular, AstraZeneca, Boston Scientific, Covidien, Janssen Pharmaceuticals, Regado Biosciences, Maya Medical, Merck, and The Medicines Company. All other authors have reported that they have no relationships relevant to the contents of this paper to disclose.

REFERENCES

1. Baber U, Chandrasekhar J, Sartori S, et al. Associations between chronic kidney disease and outcomes with use of prasugrel versus clopidogrel in patients with acute coronary syndrome undergoing percutaneous coronary intervention: a report from the PROMETHEUS study. *J Am Coll Cardiol Intv* 2017;10:2017-25.
2. Wallentin L, Becker RC, Budaj A, et al. Ticagrelor versus clopidogrel in patients with acute coronary syndromes. *N Engl J Med* 2009;361:1045-57.
3. Wiwiot SD, Braunwald E, McCabe CH, et al. Prasugrel versus clopidogrel in patients with acute coronary syndromes. *N Engl J Med* 2007;357:2001-15.
4. James S, Budaj A, Aylward P, et al. Ticagrelor versus clopidogrel in acute coronary syndromes in relation to renal function: results from the Platelet Inhibition and Patient Outcomes (PLATO) trial. *Circulation* 2010;122:1056-67.
5. Gurm HS. P2Y12 inhibitors in patients with chronic kidney disease: the known unknown. *J Am Coll Cardiol Intv* 2017;10:2026-8.
6. Montalescot G, Silvain J. Ticagrelor in the renal dysfunction subgroup: subjugated or substantiated? *Circulation* 2010;122:1049-52.
7. Baber U, Mehran R, Giustino G, et al. Coronary thrombosis and major bleeding after PCI with drug-eluting stents: risk scores from PARIS. *J Am Coll Cardiol* 2016;67:2224-34.
8. Baber U, Mehran R, Kirtane AJ, et al. Prevalence and impact of high platelet reactivity in chronic kidney disease: results from the Assessment of Dual Antiplatelet Therapy with Drug-Eluting Stents registry. *Circ Cardiovasc Interv* 2015;8:e001683.

RESEARCH CORRESPONDENCE

MitraClip in High- Versus Low-Volume Centers



An Analysis From the German TRAMI Registry

Previous studies have suggested lower rates of operative mortality for elderly patients >65 years of age undergoing mitral valve surgery in hospitals with higher annual volumes and increasing repair rates (1). Transcatheter mitral valve repair using the MitraClip