Readers' Comments 147

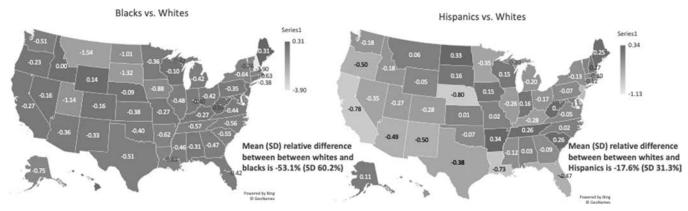


Figure 1. Heat map demonstrating the relative difference* in prevalence of internet use among Blacks and Hispanics compared to Whites. *The relative difference in prevalence of internet use was calculated as prevalence of internet use among Blacks or Hispanics minus the prevalence in Whites and then divided by the corresponding prevalence in Blacks or Hispanices. These estimates are among patients with atherosclerotic cardiovascular disease.

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- Khera A, Baum SJ, Gluckman TJ, Gulati M, Martin SS, Michos ED, Navar AM, Taub PR, Toth PP, Virani SS, Wong ND, Shapiro MD. Continuity of care and outpatient management for patients with and at high risk for cardiovascular disease during the COVID-19 pandemic: a scientific statement from the American Society for Preventive Cardiology. *Am J Prev Cardiol* 2020:100009. https://doi.org/10.1016/j. ajpc.2020. 100009.
- Hilary D, Sulmasy LS. Policy recommendations to guide the use of telemedicine in primary care settings: an American college of physicians position paper. *Ann Intern Med* 2015;163(10):787–789. https://doi.org/10.7326/M15-0498.

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Multiarterial Versus Single-Arterial Grafting



We thank Dr. Kurlansky and Dr. Gaudino for examining our work in detail and their insightful comments. 1,2 Our recent meta-analysis in coronary artery bypass showed multiarterial grafting (MAG) does not have mortality benefit compared to single-arterial grafting (SAG). MAG has better revascularization rates, but more sternal wound complications. 1 We do not

disagree with their approach to metaanalyses. We intend to assuage the readers' concerns as follows.

In our meta-analysis, we have already performed the analysis with methods that address their concerns. We want to emphasize that our meta-analysis must be read with the supplementary material provided, to fully understand the methods and results.¹

The first concern raised is about the inclusion of the study by Thujis et al.³ The readers object to its inclusion because it is a post hoc analysis of a randomized controlled trial (RCT) and not an RCT per se. Although we agree that the trial is a post hoc analysis, this was a well-conducted study that used multivariable Cox regression to adjust for differences in baseline covariates. In this study, compared to patients treated with SAG, those receiving MAG were younger, were less commonly female, had less medically treated diabetes and peripheral vascular disease, and presented less frequently in a critical preoperative state.³ Therefore, the results would be expected to be skewed in favor of MAG, but this was not the case. Besides, we conducted a sensitivity analysis by leaving out this study and none of the outcomes changed (see Tables 3 and 4 in the supplementary file of the study). This study was used to increase the power of the meta-analysis and there are precedents for this approach in the literature. For example, SURTAVI was a post hoc analysis of low-risk patients who underwent transcatheter versus surgical aortic valve replacement.4

The second concern is that a fixedeffect model was used instead of a random-effect model. We conducted a thorough risk of bias assessment and found an acceptable risk of bias without significant methodological heterogeneities. All studies were RCTs, using a standard CABG procedure, with comparable baseline co-morbidities. For only those outcomes that were statistically homogenous, the fixed-effect model was used. Moreover, all outcomes were also analyzed using a random-effect model, and the results did not change. This is reported in the main manuscript and detailed in the supplementary file.

The third concern is regarding the ART trial. In our meta-analysis, we have detailed the problem of crossover in the ART trial. We thus utilized the intention-to-treat data in our primary meta-analysis and repeated the results with the as-treated data. The results were not different. Mortality outcomes showed the same effect when a random-effect model was used in the astreated group. We repeated the analysis by leaving out the ART trial and the outcomes did not change significantly (supplementary file of the main manuscript). Thus, we believe that the shortcomings of the ART trial were adequately addressed. Although ART trial has been criticized, it cannot be overlooked as it is the largest available trial with the longest follow-up available on the subject. The authors point to their post hoc analysis of ART trial which showed as-treated MAG to have mortality benefit compared with SAG and cite it as evidence to believe in the superiority of MAG. This post hoc analysis uses as-treated data which violates the principle of randomization and thus prone to measured and unmeasured bias. In another analysis, the authors have themselves pointed out that unmeasured confounders rather than biological superiority may explain the survival advantage of MAG in non-randomized series.

To conclude, RCTs have shown that while MAG is associated with a better revascularization rate, it is not associated with mortality benefit compared with SAG. Also, MAG is associated with higher sternal complications.

Disclosures

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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- Changal K, Masroor S, Elzanaty A, Patel M, Mir T, Khan S, Nazir S, Soni R, Oostra C, Khuder S, Eltahawy E. Meta-analysis comparing multiple arterial grafts versus single arterial graft for coronary-artery bypass grafting. *Am J Cardiol* 2020;130:46–55.
- Kurlansky P, Gaudino M. Multiple arterial grafting: a critical analysis. Am J Cardiol 2020;S0002-9149.
- 3. Thuijs DJ, Head SJ, Stone GW, Puskas JD, Taggart DP, Serruys PW, Dressler O, Crowley A, Brown WM III, Horkay F, Boonstra PW. Outcomes following surgical revascularization with single versus bilateral internal thoracic arterial grafts in patients with left main coronary artery disease undergoing coronary artery bypass grafting: insights from the EXCEL trial. Eur J Cardiothorac Surg 2019;55:501–510.
- Kolte D, Vlahakes GJ, Palacios IF, Sakhuja R, Passeri JJ, Inglessis I, Elmariah S. Transcatheter versus surgical aortic valve replacement in low-risk patients. *J Am Coll Cardiol* 2019;74:1532–1540.
- Taggart DP, Benedetto U, Gerry S, Altman DG, Gray AM, Lees B, Gaudino M, Zamvar V, Bochenek A, Buxton B, Choong C. Bilateral versus single internal-thoracic-artery grafts at 10 years. N Engl J Med 2019;380:437–446.
- 6. Taggart DP, Gaudino MF, Gerry S, Gray A, Lees B, Dimagli A, Puskas JD, Zamvar V,

- Pawlaczyk R, Royse AG, Flather M, Benedetto U, ART investigators ART investigators. Effect of total arterial grafting in the Arterial Revascularization Trial. *J Thorac Cardiovasc Surg* 2020. https://doi.org/10.1016/j.jtcvs. 2020.03.013. S0022-5223(20)3091-2.
- Gaudino M, Di Franco A, Rahouma M, Tam DY, Iannaccone M, Deb S, D'Ascenzo F, Abouarab AA, Girardi LN, Taggart DP, Fremes SE. Unmeasured confounders in observational studies comparing bilateral versus single internal thoracic artery for coronary artery bypass grafting: a meta-analysis. *J Am Heart Assoc* 2018;7:e008010.

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Extensive Arterial Thrombosis in Covid-19



A 70-year-old woman with hypertension and type 2 diabetes presented to the hospital with a cold, pulseless, and pale left leg. On examination, her left leg was found to have mottling and pallor to the level of the proximal left calf. There were absent left femoral, popliteal, or pedal pulses. In contrast, there were palpable pedal pulses on the right side.

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) reverse transcription polymerase chain reaction was positive. Computed tomography

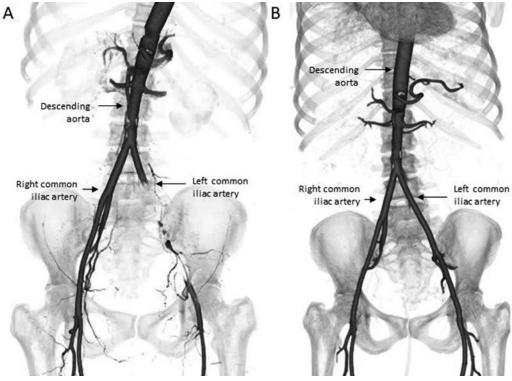


Figure 1. Computed tomography angiogram at initial presentation (*left panel*) and after emergent thrombectomy and thrombolysis (*right panel*). Consent for publication was obtained from the patient.