Giving post hoc a good name

Verdi J. DiSesa, MD, MBA

From the Lewis Katz School of Medicine at Temple University, Philadelphia, Pa.

Disclosures: Author has nothing to disclose with regard to commercial support.

Received for publication March 12, 2016; accepted for publication March 14, 2016; available ahead of print April 19, 2016.

Address for reprints: Verdi J. DiSesa, MD, MBA, Lewis Katz School of Medicine, Temple University, Philadelphia, PA 19140 (E-mail: verdi.disesa@gmail.com).

J Thorac Cardiovasc Surg 2016;152:277

0022-5223/\$36.00

Copyright © 2016 by The American Association for Thoracic Surgery

<http://dx.doi.org/10.1016/j.jtcvs.2016.03.037>

Post hoc ergo propter hoc is Latin for an often incorrect proposition: After this, therefore because of this. This could give post hoc studies a bad name.

The well-done and clearly written article by Benedetto and colleagues¹ offers a vivid counter example that demonstrates the potential utility of after-the-fact (ie, post hoc) inquiry. The study uses a robust set of data from the Arterial Revascularization Trial. It describes a post hoc analysis of sternal wound complications in more than 2000 patients undergoing coronary artery bypass grafting surgery who were randomized to single or bilateral internal thoracic artery grafts harvested with either a pedicled or a skeletonized surgical technique. Using propensity score matching, the authors demonstrate that harvesting of both pedicled thoracic arteries was associated with an increased risk of sternal wound problems, whereas use of both arteries as skeletonized grafts was not.

This study has disadvantages associated with its post hoc design. For example, surgical technique was determined by the preference of the surgeon and not randomized. However, its message is believable and important and clinicians who care for patients who are candidates for coronary artery bypass grafting surgery will find the authors' conclusions compelling. The advantages of multiple arterial grafts have been established by previously published work. This study provides evidence for more widespread application of this approach to myocardial revascularization and will require that surgeons master the

Verdi J. DiSesa, MD, MBA

Central Message

Harvesting of both pedicled thoracic arteries for CABG was associated with an increased risk of sternal wound problems, whereas use of both arteries as skeletonized grafts was not.

See Article page 270.

surgical techniques needed to harvest both the left and the right thoracic arteries as skeletonized grafts expeditiously and reliably.

Post hoc ergo propter hoc often may not be true, but do not be fooled. There are real and important conclusions to be drawn from a post hoc analysis like this.

Reference

1. Benedetto U, Altman DG, Gerry S, Gray A, Lees B, Pawlaczyk P, et al. Pedicled and skeletonized single and bilateral internal mammary artery grafts and the incidence of sternal wound complications: Insights from the Arterial Revascularization Trial. *J Thorac Cardiovasc Surg*. 2016;152:270-6.