See Article page 905.

Commentary: Dr Kocher to the catheterization laboratory!

Kevin L. Greason, MD

A surgeon is a doctor who can operate and who knows when not to.

—Theodor Kocher¹

Spanneut and colleagues² present their observations on 272 patients with acute infective endocarditis. The authors studied the risks and benefits of preoperative coronary angiography in patients with acute infective endocarditis.

The main issue of preoperative coronary angiography is the risk of embolism balanced against the benefit of identifying significant coronary artery stenosis. Almost two-thirds of patients in this study received coronary angiography, of whom 20% had significant coronary artery disease. The authors conclude that preoperative coronary angiography was not associated with improved prognosis.

The authors reported in-hospital-related badness occurred in almost 40% of patients. Morbidity included embolism in 6% of patients, death in 12%, new hemodialysis in 14%, and any major adverse renal and/or cardiovascular event in 27%. The findings were consistent at 2 years. These end points were similarly distributed in patients who did or did not receive preoperative coronary angiography (all P values $> .05$).

An additional meta-analysis was done of the registry data and 2 other studies totaling 551 patients.^{3,4} My interpretation of the analysis is there was similar occurrence of new hemodialysis ($P = .18$) and all-cause mortality ($P = .92$) regardless the occurrence of preoperative coronary

Kevin L. Greason, MD

CENTRAL MESSAGE

Preoperative coronary angiography can result in embolism in the setting of infective endocarditis. Proceed cautiously. Less invasive options should be considered.

angiography. There were 2 cases of embolism after coronary angiography and before operation in the registry; however, there were no embolism events in the other 2 studies. An expanded literature review noted 5 other published embolism events after coronary angiography.

The study addresses a clinical problem of importance to surgeons who are faced with treating an ever-aging population of patients with infective endocarditis.⁵ What are the risks and benefits of preoperative coronary angiography? The authors are to be commended on bringing this manuscript to publication. This is nicely written and the data and analyses are clearly presented. The addition of the comprehensive meta-analysis adds strength to the message.

The analysis falls short in that almost 50% of patients in the no preoperative coronary angiography group had either coronary angiography within the 2 preceding years, computed tomography coronary angiography, or were at low risk of significant coronary artery disease. Furthermore, the conclusion is based on only 2 years of follow-up.¹⁻³ Is that adequate time to conclude no benefit to concomitant coronary artery bypass graft operation? I point out that in the randomized Coronary Artery Surgery Study, the subgroup survival curves diverged at 6 years after coronary artery bypass graft operation and medical management.⁶ The selection bias and short follow-up are significant limitations that are each given only a sentence of acknowledgment in the limitations section.

From the Department of Cardiovascular Surgery, Mayo Clinic, Rochester, Minn.

Disclosures: The author reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication Sept 12, 2020; revisions received Sept 12, 2020; accepted for publication Sept 14, 2020; available ahead of print Sept 18, 2020.

Address for reprints: Kevin L. Greason, MD, Department of Cardiovascular Surgery, Mayo Clinic, 200 First St, Rochester, MN 55905 (E-mail: greason.kevin@mayo.edu).

J Thorac Cardiovasc Surg 2022;164:914-5

0022-5223/\$36.00

Copyright © 2020 Published by Elsevier Inc. on behalf of The American Association for Thoracic Surgery

<https://doi.org/10.1016/j.jtcvs.2020.09.051>

The advance of technology imparts the final limitation on the study. Computed tomography with coronary artery calcium score with/without angiography offers a less-invasive method to increase the prestudy probability of finding significant coronary artery disease at the time of preoperative coronary angiography. Embolism happens. Know when to get the coronary angiogram and when not to.

References

1. Kocher T. Less is more medicine. Available at: . Accessed September 9, 2020. Kocher T. Less is more medicine. Available at: <http://www.lessismoremedicine.com/quotes>
2. Spanneut T-A, Paquet P, Bauters C, Modine T, Richardson M, Bonello L, et al. Utility and safety of coronary angiography in patients with acute infective endocarditis who required surgery. *J Thorac Cardiovasc Surg.* 2022;164:905-13.e19.
3. Hekimian G, Kim M, Passefort S, Duval X, Wolff M, Lepot C, et al. Preoperative use and safety of coronary angiography for acute aortic valve infective endocarditis. *Heart.* 2010;96:696-700.
4. Laperche C, Lairez O, Ferrieres J, Robin G, Gautier M, Lavie Badie Y, et al. Coronary angiography in the setting of acute infective endocarditis requiring surgical treatment. *Arch Cardiovasc Dis.* 2020;113:50-8.
5. Slipczuk L, Codoles JN, Davila CD, Romero-Corral A, Yun J, Pressman GS, et al. Infective endocarditis epidemiology over five decades: a systemic review. *PLoS One.* 2013;8:e82665.
6. Alderman EL, Mourassa MG, Cohen LS, Davis KB, Kaiser GG, Killip T, et al. Ten-year follow-up of survival and myocardial infarction in the randomized coronary artery surgery study. *Circulation.* 1990;82:1629-46.

See Article page 905.

Commentary: Do we always need to look at the coronaries in infective endocarditis?

Derrick Y. Tam, MD, Malak Elbatarny, MD, and Stephen E. Fremes, MD, MSc

Infective endocarditis (IE) is becoming more common, particularly in North America, where there is growing endemic of intravenous drug use.^{1,2} As such, understanding regarding the optimization of perioperative care for these often sick and unstable patients becomes increasingly relevant. The perioperative management of patients with IE includes preoperative coronary imaging according to both 2015 American and European guidelines (Class I, Level of Evidence: C)^{3,4}; however, the rationale for these guidelines was based on all patients undergoing valvular heart surgery, which may not be applicable to those with

CENTRAL MESSAGE

Routine coronary angiography is unnecessary in most patients undergoing surgery for infective endocarditis and should be reserved for selected patients.

IE. Patients with IE tend to be younger and less likely to have significant coronary artery disease (CAD) than older patients with degenerative valve disease. Furthermore, there are concerns for embolization risk among patients with aortic valve vegetations—aortic vegetations actually represent a relative contraindication to catheterization in the European guidelines. Given these population-specific considerations, the benefit-to-risk ratio for preoperative coronary angiography may be altered in those undergoing surgery for IE.

In this issue of the *Journal*, Spanneut and colleagues⁵ challenge the recommendations of the guidelines by examining outcomes from their single-center registry of 272 patients with acute IE undergoing surgery and compared

From the Division of Cardiac Surgery, Schulich Heart Centre, Department of Surgery, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Ontario, Canada.

Disclosures: The authors reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication Aug 29, 2020; revisions received Aug 29, 2020; accepted for publication Aug 31, 2020; available ahead of print Sept 3, 2020.

Address for reprints: Stephen E. Fremes, MD, MSc, Schulich Heart Centre, Sunnybrook Health Sciences Centre, 2075 Bayview Ave, Room H4 05, Toronto, Ontario, M4N 3M5 Canada (E-mail: Stephen.fremes@sunnybrook.ca).

J Thorac Cardiovasc Surg 2022;164:915-6

0022-5223/\$36.00

Copyright © 2020 by The American Association for Thoracic Surgery

<https://doi.org/10.1016/j.jtcvs.2020.08.105>