It is better to be readmitted than dead

Marek A. Deja, MD, PhD

From the Department of Cardiac Surgery, School of Medicine in Katowice, Medical University of Silesia, Katowice, Poland.

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

Received for publication April 15, 2017; accepted for publication April 21, 2017; available ahead of print June 3, 2017.

Address for reprints: Marek A. Deja, MD, PhD, Department of Cardiac Surgery, Medical University of Silesia, ul Ziółowa 47, Katowice 40-635, Poland (E-mail: mdeja@sum.edu.pl).

J Thorac Cardiovasc Surg 2017;154:453-4

0022-5223/\$36.00

Copyright © 2017 by The American Association for Thoracic Surgery

<http://dx.doi.org/10.1016/j.jtcvs.2017.04.059>

Increasingly, hospital readmission rates are being used as a health care quality measure. Penalties for readmission rates judged excessive have been implemented as an incentive to improve the transitional care. The article in this issue of the *Journal* by Forcillo and colleagues¹ provides an estimate of 30-day and 1-year rehospitalization rates among patients subjected to transcatheter aortic valve replacement.¹ The 10.4% 30-day readmission rate appears favorable in comparison with previously reported 30-day readmission rates of 17.4% estimated for coronary artery bypass grafting² and 14.5% for percutaneous coronary intervention,³ especially given that transcatheter aortic valve replacement patients are generally those at high or extreme surgical risk. Similarly, a 1-year readmission rate of 29% seems favorable in comparison with the 44% reported for the medical cohort of the Placement of Aortic Transcatheter valves (PARTNER) trial.⁴ It is, however somewhat excessive in comparison with the 1-year readmission rate for the surgically treated PARTNER 1A cohort.⁵ Interestingly, the 1-year mortality in the PARTNER trial was higher in both surgical and transcatheter aortic valve replacement cohorts.⁵ Because death and rehospitalization are competitive events, it may well be that the higher mortality in the PARTNER trial precluded potential late readmission. In fact, the composite outcome of death or repeat hospitalization appears similar between the article of Forcillo and colleagues¹ and the PARTNER trial. It has been described previously, for instance, that the decrease of coronary artery bypass grafting mortality in New York State was associated with increased readmission rates during the same period.⁶

An important finding in the report of Forcillo and colleagues¹ is that readmission does not depend on procedural details, such as access site, and procedural outcomes, such as postoperative mitral regurgitation or perivalvular leak. On the other hand, the numbers of some complications may simply be too small (eg, renal failure in 1.8%) to influence the statistics. Two factors emerge from the study: preoperative anemia, which increases the chance of early readmission, and postoperative stroke, which increases

Marek A. Deja, MD, PhD

Central Message

If you decide to spend on the invasive treatment of elderly patients at high risk, you must be prepared for the burden of a relatively high readmission rate.

See Article page 445.

the chance of a late one. The third important factor is a prosthesis size of 23 mm. Forcillo and colleagues¹ postulate that if these were to be prevented or treated, the readmission rate might decrease. Because Forcillo and colleagues¹ found an association of readmission with mortality, they speculate that the treatment of the risk factors might even prevent some deaths. Unfortunately, it has been shown in previous studies that the reasons for readmission in cardiac surgical patients vary widely between institutions, and it might be difficult to find a single strategy that fits all clinical settings. Although I believe that prevention of periprocedural strokes is of utmost importance, the treatment of chronic anemia may be difficult in the elderly population, and the size of prosthesis used is hardly operator dependent. The premise that preventing rehospitalization might prevent some deaths is a contentious one. Because age has been shown to be a predictor of readmission in other studies,^{2,3} it is conceivable that the admissions may have actually prevented some of the deaths that would have occurred had the patients escaped medical attention. Therefore, if you decide to spend on the invasive treatment of elderly patients at high risk, you must be prepared for the burden of a relatively high readmission rate.

References

1. Forcillo J, Condado JF, Binongo JN, Lasanajak Y, Caughron H, Babaliaros V, et al. Readmission rates after transcatheter aortic valve replacement in high- and extreme-risk patients with severe aortic stenosis. *J Thorac Cardiovasc Surg*. 2017;154:445-52.
2. Tsai TC, Joynt KE, Orav EJ, Gawande AA, Jha AK. Variation in surgical-readmission rates and quality of hospital care. *N Engl J Med*. 2013;369:1134-42.
3. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. *N Engl J Med*. 2009;360:1418-28.
4. Leon MB, Smith CR, Mack M, Miller DC, Moses JW, Svensson LG, et al; PARTNER Trial Investigators. Transcatheter aortic-valve implantation for aortic stenosis in patients who cannot undergo surgery. *N Engl J Med*. 2010;363:1597-607.
5. Smith CR, Leon MB, Mack MJ, Miller DC, Moses JW, Svensson LG, et al; PARTNER Trial Investigators. Transcatheter versus surgical aortic-valve replacement in high-risk patients. *N Engl J Med*. 2011;364:2187-98.
6. Hannan EL, Zhong Y, Lahey SJ, Culliford AT, Gold JP, Smith CR, et al. 30-Day readmissions after coronary artery bypass graft surgery in New York State. *JACC Cardiovasc Interv*. 2011;4:569-76.