

# Coronary artery bypass grafting saves lives!

Benjamin Medalion, Soon J. Park

Division of Cardiac Surgery, Harrington Heart and Vascular Institute, University Hospital Case Medical Center, Case Western Reserve University, Cleveland, Ohio, USA

*Correspondence to:* Soon J. Park, MD. Division of Cardiac Surgery, Harrington Heart and Vascular Institute, University Hospital Case Medical Center, Case Western Reserve University, Cleveland, Ohio, USA. Email: soon.park@uhhospitals.org.

Submitted Jul 05, 2016. Accepted for publication Jul 14, 2016.

doi: 10.21037/jtd.2016.08.41

**View this article at:** <http://dx.doi.org/10.21037/jtd.2016.08.41>

Velazquez *et al.* are to be congratulated for publishing this follow up Surgical Treatment for Ischemic Heart Failure Extension Study (STICHES) which clearly demonstrates that coronary artery bypass grafting (CABG) renders survival benefit to patients with ischemic heart disease with left ventricular ejection fraction of 35% or less (1). The Surgical Treatment for Ischemic Heart Failure (STICH) trial randomized a total of 1,212 patients (CABG, 610 patients *vs.* medical-therapy 602 patients), and all-cause mortality was evaluated as the primary outcome. When STICH trial was initially reported in 2011 with a mean follow-up period of 56 months, there seemed to be a trend towards survival benefit for CABG [hazard ratio (HR) 0.86 (0.72–1.04),  $P=0.12$ ]. However, CABG was associated with significantly increased mortality at 30 days [HR 3.19 (1.35–7.52),  $P=0.008$ ] (2). Therefore, it created some conflict in the minds of providers and patients alike as to how to justify assuming such concrete operative mortality for a potential long-term benefit which had not been statistically proven. Today, such strife seems to be justified no longer for the much needed answer is provided by STICHES. The comparative absolute survival benefit of CABG is 7% [HR 0.84 (0.73–0.97),  $P=0.02$ ] at 9.8 years, and it translates to having a life saved per every 14 CABG procedures performed (1). The survival benefit is even more pronounced when the results are compared based on as treated rather than as randomized.

It is important to be mindful of the study design and its findings as we treat patients every day in the real world. In STICH trial, patients with LM stenosis of greater than 50% or those with Canadian Cardiovascular Society angina class of III or IV were not included for there existed no equipoise between CABG *vs.* medical-therapy

alone (2). Also a significant fraction of patients (19.8% of medical-therapy group) crossed over and underwent CABG for various indications (progressive symptoms, acute decompensation, patient or family's decision, and physician's decision) (1). Therefore, CABG should be considered to be the cornerstone therapy for its long-lasting survival benefit in treating patients with ischemic heart disease. Obviously, CABG can incur operative mortality in some patients. Those with high Society of Thoracic Surgeons (STS) risk profiles should be thoughtfully managed, such as optimizing preoperatively and even considering alternative therapies such as heart transplant and/or durable implantable left ventricular assist devices. Nevertheless, in the vast majority of patients with ischemic heart disease with or without cardiomyopathy, surgical revascularization provides a durable survival benefit.

## Acknowledgements

None.

## Footnote

*Provenance:* This is an invited Commentary commissioned by the Section Editor Yi Lin (Department of Cardiovascular Surgery, Zhongshan Hospital Fudan University, Shanghai Institute of Cardiovascular Disease, Shanghai, China).

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Comment on:* Velazquez EJ, Lee KL, Jones RH, *et al.* Coronary-Artery Bypass Surgery in Patients with Ischemic Cardiomyopathy. *N Engl J Med* 2016;374:1511-20.

## References

1. Velazquez EJ, Lee KL, Jones RH, et al. Coronary-Artery Bypass Surgery in Patients with Ischemic Cardiomyopathy. N Engl J Med 2016;374:1511-20.
2. Velazquez EJ, Lee KL, Deja MA, et al. Coronary-artery bypass surgery in patients with left ventricular dysfunction. N Engl J Med 2011;364:1607-16.

**Cite this article as:** Medalion B, Park SJ. Coronary artery bypass grafting saves lives! J Thorac Dis 2016;8(9):E1023-E1024. doi: 10.21037/jtd.2016.08.41