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This is the TSDA Weekly Curricula E-mail for the **week of December 24, 2007.**

CORE CURRICULUM

Note: There are no talks this week. Instead please review these four important studies; all are from 2007.

Cardiac: On-Pump (ONCAB) vs. Off-Pump (OPCAB) CABG Outcomes

1. [Off-Pump Techniques Benefit Men and Women and Narrow the Disparity in Mortality After Coronary Bypass Grafting](#), by John D. Puskas, MD, Fred H. Edwards, MD, Paul A. Pappas, MS, Sean O'Brien, PhD, Eric D. Peterson, MD, MPH, Patrick Kilgo, MS, and T. Bruce Ferguson, Jr., MD. *The Annals of Thoracic Surgery*, 2007;84:1447-56.

A retrospective analysis of 42,700 patients on whom data was retrieved from the STS National Database. Limited to 30-day follow-up. Sixty-three centers, multiple surgeons, nonrandomized and observational. Perioperative mortality, MI, stroke and MACE were lower in the OPCAB group. An obvious concern: Was surgeon choice regarding the use of the pump possibly related to the perceived technical difficulty of case? (Specifically, was an experienced, technically proficient, busy surgeon more likely to perform an OPCAB procedure on the same patient a less experienced, younger surgeon might choose ONCAB; i.e., was there surgeon bias for performing technically more difficult operations ONCAB, particularly by surgeons who may have less experience and may have poorer results in general.) The effect of inexperience was lessened by the inclusion only of institutions performing over 100 cases of each type over a two-year period. The statistical analysis is rigorous and the gender associated findings are particularly interesting. The risk-adjusted odds comparisons by gender and surgery type for major adverse cardiac outcomes deserve especially close attention.

2. [Off-Pump Versus On-Pump Coronary Artery Bypass Graft Surgery: Differences in Short-Term Outcomes and in Long-Term Mortality and Need for Subsequent Revascularization](#), by Edward L. Hannan, PhD, Chuntao Wu, MD, PhD, Craig R. Smith, MD, Robert S.D. Higgins, MD, Russell E. Carlson, MD, Alfred T. Culliford, MD, Jeffrey P. Gold, MD, Robert H. Jones, MD, *Circulation*, 2007;116:1145-1152. (See your Program Director or your reference librarian if you do not have ready access to the September 2007 issue of *Circulation*.)

A retrospective analysis of 49,830 patients retrieved from the New York State Cardiac Surgery Reporting System (CSRS) database. Follow-up is three years. Peri-operative mortality, stroke and respiratory failure were higher in the ONCAB group, but the OPCAB group underwent significantly more revascularization procedures during the three years of follow-up. Mortality was equal at three years. Limitations of the study are well described in the discussion section.

3. [Cognitive and Cardiac Outcomes 5 Years After Off-Pump vs. On-Pump Coronary Artery](#)

[Bypass Graft Surgery](#); by Diederik van Dijk, MD, PhD, Monique Spoor, MS, Ron Hijman, PhD, Hendrik M. Nathoe, MD, PhD, Cornelius Borst, MD, PhD, Erik W.L. Jansen, MD, PhD, Diederick E. Grobbee, MD, PhD, Peter P.T. de Jaegere, MD, PhD, Cor J. Kalkman, MD, PhD for the Octopus Study Group. *Journal of the American Medical Association*, 2007;297:701-708.

A small, prospective randomized trial with five-year follow-up comparing ONCAB vs. OPCAB outcomes in healthy, low-risk patients. The trial was designed specifically to compare neurological outcomes and the groups did not differ. Cardiac outcomes were equivalent as well.

4. [Neurocognitive Outcomes 3 Years After Coronary Artery Bypass Graft Surgery: A Controlled Study](#); by Ola A. Selnes, PhD, Maura A. Grega, MSN, Maryanne M. Bailey, BA, Luu Pham, MS, Scott Zeger, PhD, William A. Baumgartner, MD, and Guy M. McKhann, MD. *The Annals of Thoracic Surgery*, 2007;84:1885–96.

A prospective, non-randomized, controlled study designed to evaluate neurological outcomes after ONCAB vs. OPCAB. The study is unique for the addition of two non-operated control groups having either non-surgical coronary artery disease or healthy hearts. Neurocognitive outcomes did not differ significantly between the On and Off-Pump groups after three years, but both operative groups had a similar trend of neurocognitive decline over the three years. Strikingly, the trend of neurocognitive deterioration in both the On and Off-Pump groups also paralleled the decline in the non-operative-coronary artery disease group. This is further evidence that neurocognitive decline is more common in patients with CAD in general, and is not necessarily associated with cardiopulmonary bypass.

ADDITIONAL READING

[Medical Professionalism in a Commercialized Health Care Market](#), by Arnold S. Relman; *Journal of the American Medical Association*. 2007;298 2668-2670. (See your Program Director or your reference librarian if you do not have ready access to the December 12, 2007, issue of JAMA.)

TSDA NEWS

Next week's Weekly Curricula E-mail, for the week of December 31, will also be a "light" reading week. The regular Curricula E-mail schedule will resume on January 3 for the week of January 6.

If you have suggestions for improving the TSDA Weekly Curricula E-mails, please contact Nancy Puckett at npuckett@tsda.org.

Happy Holidays!

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Phone: (312) 202-5854 | Fax: (312) 202-5829 | www.tsda.org