

An evaluation of class effect

The results of Zhou's retrospective observational study¹ conflict with the evidence obtained from well-designed clinical trials. Retrospective analyses of administrative databases may indicate an association between 2 variables, but one must not infer that a causal relation exists.

Limitations in the study design complicate interpretation of the results. Equivalence trials are designed to confirm the absence of a meaningful difference between treatments where a margin of clinical equivalence is pre-specified, which was not the case here. If equivalence trials are not designed and analyzed appropriately, they often have intrinsic biases tending toward the conclusion of no difference.^{2,3}

Despite adjustments for many confounding variables, the study did not capture a key independent risk factor that affects baseline cardiovascular risk, namely total cholesterol or low-density lipoprotein cholesterol blood concentration.⁴ Finally, the rate of switches for non-atorvastatin users was high, resulting in "contamination" of other statin groups with atorvastatin users. This was not appropriately accounted for in the analyses. Switching may occur not only because of worsening clinical status, but also because of higher baseline cholesterol, which confers a higher cardiovascular risk.

Zhou highlights the care gap observed between 1997 and 2001: 67% of elderly subjects did not receive lipid-lowering therapy after myocardial infarction, and most of the remaining patients received low starting doses of statins. It is encouraging, however, that persistence rates were high, which is important in optimizing care after myocardial infarction.

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REFERENCES

1. Zhou Z, Rahme E, Abrahamowicz M, et al. Effectiveness of statins for secondary prevention in elderly patients after acute myocardial infarction: an evaluation of class effect. *CMAJ* 2005;172(9):1187-94.
2. Greene WL, Concato J, Feinstein AR. Claims of

equivalence in medical research: Are they supported by the evidence? *Ann Intern Med* 2000; 132: 715-22.

3. Jones B, Javis P, Lewis JA, et al. Trials to assess equivalence: the importance of rigorous methods. *BMJ* 1996;313:36-9.
4. Genest J, Frohlich J, Fodor G, et al. Recommendations for the management of dyslipidemia and the prevention of cardiovascular disease: 2003 update. *CMAJ* 2003;169(9):921-4.

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[Three of the authors respond:]

Complementary roles of observational studies and randomized controlled trials (RCTs) have been recognized.¹ Results from RCTs comparing statins head-to-head for long-term cardiovascular prevention are, in fact, very few. The Pravastatin or Atorvastatin Evaluation and Infection Therapy (PROVE-IT) trial² and the recent Incremental Decrease in Endpoints through Aggressive Lipid Lowering (IDEAL) trial³ compared 2 different statin regimens with a focus on comparing intensive versus moderate cholesterol-lowering therapy, rather than the different statins per se. The latter, comparing high-dose atorvastatin versus usual-dose simvastatin, failed to achieve significance in the primary endpoint of major coronary events.³ Compared to subjects enrolled in clinical trials, the present observational study⁴ evaluated the effectiveness of statins in all patients ≥ 65 year of age with a diverse risk profile. Thus, our study provided evidence in real-world practice.

Our study was not an equivalence trial but a study of the effectiveness of the different statins prescribed to the population at large. Posterior power calculation is theoretically less meaningful in the observational study setting, where patients from the 3 most populated provinces in Canada were included.⁴ The confidence intervals around the point estimate of 1.0 we observed were quite narrow and suggested a class effect of statins.

Missing patient cholesterol information represents a limitation in the study, especially for the study of statin dose effect. However, there is no obvious reason to believe that cholesterol levels were significantly different across 5 statin groups. In our study population, the median dose used across statins was comparable, and in our analyses we

adjusted for dose equivalence. There is a possibility that switching to atorvastatin caused "contamination." However, as reported in our sensitivity analysis, we found that patients who switched to atorvastatin or to other statins had similar risk profiles (as measured by similar rates of cardiac outcomes and medication use). Additionally, similar results were obtained when we kept patients who switched in the analysis (intention to treat) or removed them. Thus we believe that the clinical risk was similar across groups.

We agree that higher doses of statins should be used to attain the lowest low-density lipoprotein target possible, regardless of which statin is prescribed.⁵

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REFERENCE

1. Black N. Why we need observational studies to evaluate the effectiveness of health care. *BMJ* 1996; 312:1215-8.
2. Cannon CP, Braunwald E, McCabe CH, et al. Intensive versus moderate lipid lowering with statins after acute coronary syndromes. *N Engl J Med* 2004; 350:1495-504.
3. Pedersen TR, Faergeman O, Kastelein JJ, et al. High-dose atorvastatin vs usual-dose simvastatin for secondary prevention after myocardial infarction: the IDEAL study: a randomized controlled trial. *JAMA* 2005;294:2437-45.
4. Zhou Z, Rahme E, Abrahamowicz M, et al. Effectiveness of statins for secondary prevention in elderly patients after acute myocardial infarction: an evaluation of class effect. *CMAJ* 2005;172(9):1187-94.
5. Sacks FM. High-intensity statin treatment for coronary heart disease. *JAMA* 2004;291:1132-4.

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Standards of training

In a recent *CMAJ* news article about the challenges currently faced by cardiac surgeons in Canada,¹ Stephen Fremes, head of cardiac surgery at Sunnybrook and Women's College Health Sciences Centre in Toronto, is quoted as saying that training may need to change so that cardiac sur-

geons can perform other surgeries, such as vascular surgery.

Vascular surgery is an independent surgical subspecialty in Canada. A specialty training program approved by the Royal College of Physicians and Surgeons of Canada (RCPSC), leading to a certificate of special competency, already exists. This certificate is obtained by completing a 2-year residency in vascular surgery and successfully passing an oral and written examination by the RCPSC. Entry into a vascular surgery residency program requires completion of a 5-year program in either general or cardiac surgery.

Training to anything less than the standard that currently exists would be a great step backward and a disservice to the population that we serve.

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REFERENCE

1. Sibbald B. Declining CABG rate means fewer jobs for surgeons. *CMAJ* 2005;173(6):583-4.

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Acknowledging the decrease in coronary bypass surgery, opinions expressed in a recent *CMAJ* news article included the possibility of broadening the clinical focus of cardiac surgeons into critical care as well as changing resident training programs to facilitate the practice of both cardiac and vascular surgery.¹

Daryl Kucey and colleagues make the valid point that a standard level of competency must be ensured during training for any specialty. Examination and certification is the domain of the RCPSC. Although the need for quality assurance is incontrovertible, the current eligibility requirements for certification are redundant and needlessly prolong training.²

The RCPSC established a direct-entry cardiovascular and thoracic specialty in 1964.³ As volumes and complexity grew, the RCPSC separated thoracic and vascular surgeries into independent subspecialties in 1976 and 1980 respectively, with General Surgery residency completion being a pre-requisite. Nonetheless, cardiac residents were eligible to sit either exam, given the significant overlap in training. The direct-entry cardiac program was re-established in 1995.

Currently, vascular or thoracic surgery certification requires 2 years in addition to certification in cardiac care. Cardiac certification encompasses research, thoracic, vascular and cardiac rotations. Credit for completion of these rotations can eliminate 15 of the 24 months required for examination and certification eligibility. Unfortunately, the RCPSC exempts cardiac residents from up to 6 months if they pursue thoracic certification, but zero months toward vascular training. Conversely, recently revised critical care requirements acknowledge the integration of related specialty rotations; cardiac residents receive credit for up to 1 year of the 2-year critical care program.

Many aspects of the practice of interventional cardiology, cardiac surgery, interventional radiology and vascular surgery are converging. Integration is not only sensible from a training perspective,⁴ but mirrors how cardiovascular health care is evolving and may facilitate more efficient and enhanced management of cardiovascular disease for Canadians.

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REFERENCES

1. Sibbald B. Declining CABG rate means fewer jobs

- for surgeons. *CMAJ* 2005;173(6):583-4.
2. Royal College of Physicians and Surgeons of Canada: Accreditation of residency programs. Available at http://rcpsc.medical.org/residency/certification/index.php?page_title=Credentials (accessed 2006 Jan 5).
3. Tang G, Weisel R, Latter D. Training programs in cardiac surgery. In: Goldman BS, Belanger S, editors. *Heart surgery in Canada: memoirs, anecdotes, history and perspective*. Philadelphia: Xlibris; 2005.
4. Latter DA. Evolution of percutaneous endovascular interventional cardiovascular specialists: convergence of cardiac surgery and interventional cardiology. *Can J Cardiol* 2005;21(14):1296-7.

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Corrections

In a Left Atrium article about the new Canadian War Museum,¹ it was implied that Siegfried Sassoon died shortly after World War I. In fact, Sassoon did not die immediately after the war, but became a celebrated war poet and lived until 1967. We thank John A.M. Henderson for bringing this error to our attention.

REFERENCE

1. Flegel KM. Canada remembers. *CMAJ* 2005;173(10):1213-4.


DOI:10.1503/cmaj.060075

The obituary notice for Dr. D. Ray R. Vaughan was incorrect in the Jan. 3 issue of *CMAJ*.¹ The correct notice appears in the Deaths section of this issue (page 587). We regret this unfortunate error.


REFERENCE

1. Deaths. *CMAJ* 2006;174(1):172.

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