Author's response to reviews

Title: The effect of total arterial grafting on medium-term outcomes following coronary artery bypass grafting

Authors:

Jean-Francois Legare (jean.legare@cdha.nshealth.ca)
Ansar Hassan (ahassan@dal.ca)
Karen J Buth (kbuth@dal.ca)
John A Sullivan (sullivanj@cdha.nshealth.ca)

Version: 3 Date: 27 April 2007

Author's response to reviews: see over
Dear Editor,

This letter is being written on behalf of the participating authors with regards to the submission to the *Journal of cardiothoracic surgery* “*The effect of total arterial grafting on medium-term outcomes following coronary artery bypass surgery.*”

The manuscript was updated by including 2 additional years of follow-up to strengthen and validate our observations. We have also slightly modified our inclusion criteria by only including patients (both groups) in which a LIMA to the LAD anastomosis was performed because of well-established survival benefit of that graft. This explains the subtle changes in actual numerical values throughout the manuscript. Importantly, this update did not result in any major outcome differences compared to the originally submitted manuscript. The following is a list of our response to the comments made by the reviewers:

Minor essential revisions:
1. There were a total of 13 surgeons involved in the study over a 10 year period. In order to address potential differences in case allocation we have included surgeon as a variable in the propensity analysis, which was then used as a variable (pscore) in the Cox proportional hazard modeling. As suggested by the reviewer, this was clarified in the methods section (page 10-11).
2. Patient follow-up was 100% using administrative database. The physician billing eligibility database (MSI data) was used to ensure that patients would be censored if leaving the Province of Nova Scotia.
3. Several preoperative variables were evaluated for their impact on long-term outcomes. These were listed in the methods section (page 10-11). In addition we did include in the analysis the number of diseased vessels, group (TAG vs LIMA+SVG) and a propensity score (pscore) that predicted the likelihood of receiving TAG versus LIMA+SVG grafting.
4. The reviewer is quite correct that the length of follow-up is significantly lower in the TAG group and likely reflects changes in practice over a 10-year period with an increasing number of patients receiving TAG grafting. To adjust for this we
included era (1995-2000 versus 2000-2005) as a variable in the propensity score calculation. The pscore is obtained by logistic regression analysis as the likelihood of TAG grafting as compared to LIMA+SVG based on patient variables. This pscore was then used as a variable in the Cox model and was not found to be an independent predictor of long term adverse cardiovascular event.

Discretionary revisions:
1. Renal insufficiency was defined based on current STS definitions.
2. The reviewer is correct in noting that the TAG group received fewer distal anastomosis. However, one should also note that TAG patients had lower incidence of 3-vessel disease and therefore fewer territories to graft. This variable (number of diseased vessels) was included in the long-term analysis to ensure we would adjust for this difference. This was clarified in the methods section. While we did not analyse in detail completeness of revascularization, we did look at territories grafted and compared our findings to diseased territories. Our findings suggest that completeness of revascularization was similar between the two groups.
3. The reviewer is correct that COPD was an independent predictor and the text was modified as suggested.
4. Unfortunately no individual patient level data can be available for analysis due to data encryption and anonymity using administrative data. This precludes any analysis of actual angiogram at the present time.
5. As suggested the p value in the table was corrected.

The authors would like to thank you for considering the submission of this paper and look forward to hearing from you in the near future.

Sincerely,

Jean-Francois Légaré
Surgical Director of Cardiac Transplantation
Director of Research Division of Cardiac Surgery