Title: Cumulative incidence for wait-list death in relation to length of queue for coronary-artery bypass grafting: a cohort study

Authors:

Boris G Sobolev (bsobolev@shaw.ca)
Lisa Kuramoto (Lisa.Kuramoto@vch.ca)
Adrian R Levy (aley@cheos.ubc.ca)
Robert Hayden (erh@telus.net)

Version: 2 Date: 15 August 2006

Author’s response to reviews: see over
August 15, 2006

Re: MS 1326782308104295

Dear Editors,

Thank you for your letter concerning our manuscript entitled “Cumulative incidence for wait-list death in relation to length of queue for coronary-artery bypass grafting: a cohort study.” The authors very much appreciate comments made by reviewers and found their suggestions helpful.

We have enclosed our specific responses to the reviewer comments. We hope that you find the manuscript is now suitable for publishing in the Journal of Cardiothoracic Surgery.

Sincerely yours,

Boris Sobolev, PhD
Revision Report

RE: MS 1326782308104295 “Cumulative incidence for wait-list death in relation to length of queue for coronary-artery bypass grafting: a cohort study”

Reviewer 1 Comments

Major Compulsory Revisions

1. Reviewer comment: none

Minor Essential Revisions

1. Reviewer comment: none

Discretionary Revisions

1. Reviewer comment:
   Whilst I accept that all cause mortality is the only valid end-point the reader would I suspect appreciate some comment on the mode of death.

   Author response:
   Thank you for your comment on the mode of pre-surgical death. In the “Discussion” section, we have added text to describe the number of patients in whom death was related to cardiovascular disease:

   “Out of 88 wait-list deaths that occurred in the two less urgent groups, 44 deaths in semi-urgent and 15 deaths in non-urgent groups were related to cardiovascular
disease.”

2. **Reviewer comment:**

Is there any information on CVS morbidity particularly the incidence of myocardial infarction. The writer has sadly had to deal with several patients who have been taken of the waiting-list for CABG after suffering a large but non-fatal MI.

**Author response:**

Thank you for your comment on reasons for removal from the wait lists. In the “Results” section, we have added text to describe patients who were deemed unfit for surgery:

“In total, 254 (2.8%) patients were removed from the wait lists for CABG after being deemed unfit for surgery.”

3. **Reviewer comment:**

The authors may wish to comment on the timing of fatal events in the present study. Some workers have reported an excess of deaths among patients soon after joining the waiting list with a second high risk period in the days immediately before planned surgery. It has been argued that very early deaths probably reflect the impact of active or unstable disease (which may have prompted investigation in the first place) and that the excess of deaths immediately before surgery might stem from the effect of stress and possibly also the effect of withdrawing medication (eg antiplatelet therapy) in preparation for CABG. Was the death rate in this cohort linear and if not were there any identifiable high risk periods?

**Author response:**

Thank you for your comment on the timing of deaths in our study. The attached figure shows a linear growth in cumulative hazard, which is usually an indication that death rate is constant. In the “Results” section, we have added text to illustrate the death
Figure 1: Cumulative hazard of death in semi-urgent and non-urgent rates in semi-urgent and non-urgent groups seemed to be constant over time:

“In semi-urgent and non-urgent groups, the product of the average death rates and weeks on the wait list served as a good approximation for the cumulative hazards, suggesting that the hazard functions for wait-list death were constant over wait-list time.”
Reviewer 2 Comments

Minor Essential Revisions

1. Reviewer comment:
   This is a very carefully done analysis of a large database showing that longer waiting lists for CABG are associated with increased mortality.

   One would like to know how the incremental risk of waiting for surgery compares with the risk of the procedure itself. This risk could either be the predicted one on the basis of the EuroScore or the actual risk, if available.

   Presumably, patients on the longer waiting lists have a low risk profile. If the risk of waiting was similar or even higher than the procedural risk itself, this would militate in favour of modifying the current strategy and/or the health care provision.

Author response:
   Thank you for your comment on incremental risk of waiting for surgery as compared to the risk of CABG itself. In a separate analysis we studied in-hospital mortality in relation to the wait-list size. In this study we found that the death rate at discharge was 1.3%. The adjusted odds of in-hospital death increased by 5% for every additional month of delay in undergoing surgery. We submitted these results as a manuscript for the special issue of Annals for Thoracic Surgery, and therefore are obliged to refrain from presenting anywhere else.