

Impact of Post-operative Complications after Cardiac Surgery on Long-term Survival

Siddharth Pahwa¹, Annalisa Bernabei¹, Hartzell Schaff¹, John Stulak², Kevin Greason³, Alberto Pochettino¹, Richard Daly¹, Joseph Dearani¹, Gabor Bagameri¹, Katherine King¹, Jason Viehman¹, and Juan A. Crestanello¹

¹Mayo Clinic

²Mayo Clinic

³MAYO CLINIC

May 18, 2020

Abstract

Background – The impact of post-operative complications on long-term survival is not well characterized. We sought to study the prevalence of post-operative complications after cardiac surgery and their impact on long-term survival. **Methods** – Operative survivors (n=26,221) who underwent coronary artery bypass grafting (CABG) (n=13054, 49.8%), valve surgery (n=8667, 33.1%) or combined CABG and valve surgery (n=4500, 17.2%) from 1993 to 2019 were included in the study. Records were reviewed for post-operative complications and long-term survival. The associations between post-operative complications and survival were assessed using a Cox-proportional model. **Results** – Complications occurred in 17,463 (66.6%) of 26,221 operative survivors. A total of 17 post-operative complications were analyzed. Post-operative blood product use was the commonest (n=12397, 47.3%), followed by atrial fibrillation (n=8399, 32.0%), prolonged ventilation (n=2336, 8.9%), renal failure (n=870, 3.3%), re-operation for bleeding (n=859, 3.3%) and pacemaker/ICD insertion (n=795, 3.0%). Stroke (HR 1.55, 95%CI 1.36-1.77), renal failure (HR 1.45, 95% CI 1.33-1.58) anticoagulant-related events (HR 1.26, 95%CI 1.02-1.56) and pneumonia (HR 1.23, 95%CI 1.11-1.36) had the strongest impact on long-term survival. Long-term survival decreased as the number of post-operative complications increased. **Conclusions** – Post-operative complications after cardiac surgery significantly impact outcomes that extend beyond the post-operative period. The presence, number and type of post-operative complications adversely impact long-term survival. Stroke, renal failure, anticoagulant-related events and pneumonia are particularly associated with poor long-term survival.

Hosted file

Submission draft.DOCX available at <https://authorea.com/users/322987/articles/451948-impact-of-post-operative-complications-after-cardiac-surgery-on-long-term-survival>

Hosted file

Table 1.docx available at <https://authorea.com/users/322987/articles/451948-impact-of-post-operative-complications-after-cardiac-surgery-on-long-term-survival>

Hosted file

Table 2.docx available at <https://authorea.com/users/322987/articles/451948-impact-of-post-operative-complications-after-cardiac-surgery-on-long-term-survival>

Hosted file

Table 3.docx available at <https://authorea.com/users/322987/articles/451948-impact-of-post-operative-complications-after-cardiac-surgery-on-long-term-survival>

Hosted file

Table 4.docx available at <https://authorea.com/users/322987/articles/451948-impact-of-post-operative-complications-after-cardiac-surgery-on-long-term-survival>

Hosted file

Table 5.docx available at <https://authorea.com/users/322987/articles/451948-impact-of-post-operative-complications-after-cardiac-surgery-on-long-term-survival>



