



Direct and Total Costs of Robotic-assisted vs Conventional Full Sternotomy Coronary Artery Bypass Grafting.

Aleksander Dokollari; Serge Sicouri; Leila Hosseinian; Ozgun Erten; Basel Ramlawi; Francis Sutter; Gianluca Torregrossa

BACKGROUND

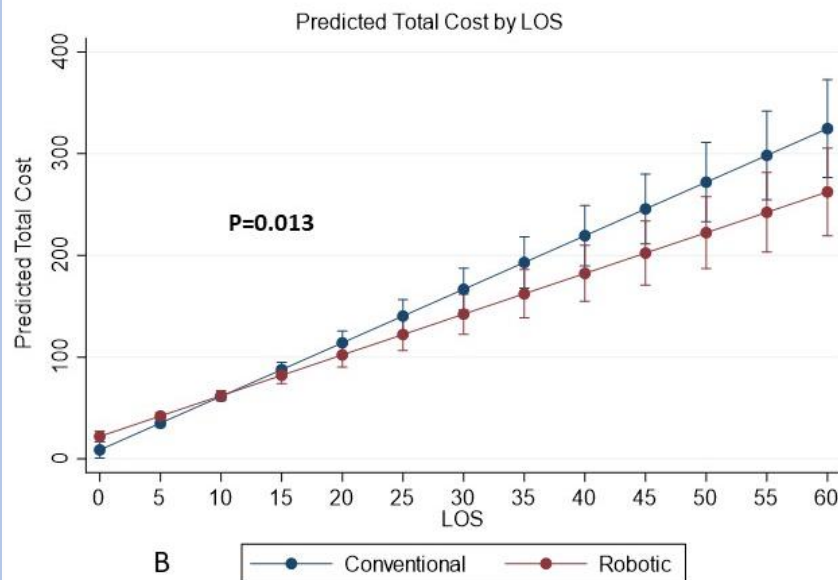
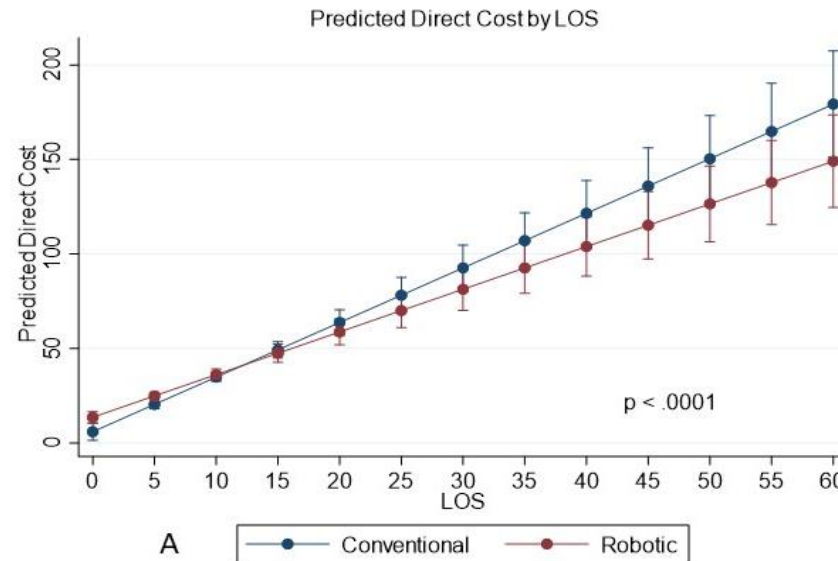
Robotic-assisted coronary artery bypass (CABG) with a robotic left internal thoracic artery (LITA) harvesting and LITA to left anterior descending (LAD) anastomosis through left 4cm minithoracotomy (MIDCABG) perceived costs are higher compared to conventional full-sternotomy CABG.

AIM

To investigate direct and total costs differences between robotic-assisted MIDCABG vs full-sternotomy CABG procedures.

METHODS

All consecutive 1,356 patients undergoing isolated CABG through either robotic-assisted MIDCABG and full sternotomy CABG between January 2017 and July 2022 from a single surgeon were included in the study. A propensity-matched analysis was used to compare the two groups. Primary outcomes were all-cause death and MACCE.



RESULTS

After matching, 582 vs 591 patients were included in the sternotomy vs MIDCABG group, respectively. Mean age was 67.9 vs 69.7 year-old and mean STS-PROM risk score was 0.9% (0.5-1.7) vs 0.9 (0.5-1.9), in sternotomy vs MIDCABG group, respectively. There were no operative deaths or conversion to full sternotomy (MIDCABG group). Incidence of prolonged ventilation >24 hours, intensive care unit and hospital length of stay, blood transfusion products, and new atrial fibrillation were higher in the sternotomy compared to MIDCABG group. At follow-up, all-cause mortality, MACCE, non-fatal stroke, non-fatal myocardial infarction, and repeat intervention were not different among groups. Post-operatively, there were no cost differences among sternotomy and MIDCABG groups. Predicted costs were higher in sternotomy vs MIDCABG.

CONCLUSION

Postoperatively, there were no cost differences among sternotomy vs MIDCABG. At 15-days follow-up, predicted costs for full-sternotomy surpass those of MIDCABG.