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Extended Abstract
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Heart Congress 2017-Pump-Assisted Beating-Heart Coronary Artery Bypass Grafting: The Pursuit of Perfection- Louis Samuels- Thomas Jefferson University, USA

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Background

The techniques utilized to accomplish Coronary Artery Bypass Grafting (CABG) include the traditional use of cardiopulmonary bypass (CPB) with aortic cross-clamping and cardioplegic arrest to totally Off Pump (i.e. OP-CAB) without CPB. The purpose of this report is to describe a hybrid approach-Pump-Assisted Direct CABG (PAD-CAB) with the aid of CPB without aortic cross-clamping and cardioplegic arrest.

Methods

Between November 2003 and December 2016, 317 PAD-CAB procedures were performed by the author/surgeon. The PAD-CAB procedures were achieved with standard CPB via sternotomy under normothermic conditions with the mean arterial pressures (MAP) kept between 60 and 80 mmHg. Outcome measures included hospital mortality and specific major adverse events (MAE) benchmarked against the Society of Thoracic Surgeons (STS) database. The number of bypass grafts, status of the case, specific patient factors, and postoperative length of stay (LOS) were also assessed.

Results

There were 238 male (75%) and 79 (25%) female patients. The mean age was 67 years (range: 38 to 92 years). The mean ejection fraction (EF) was 50% (range: 0 to 75%) with 66 cases (21%) having an EF was 50% (range: 0 to 75%) with 66 cases (21%) having an EF<40%. Two hundred seventy-seven cases (87.4%) were non-emergent with forty cases (12.6%) classified as emergent/salvage. The average of number of bypass grafts was 3.24 (range: 1 to 5). The postoperative LOS averaged 7.5 days with a median of 6 days. There were two hospital deaths (0.65%). Major adverse events were: 1 deep SWI (0.32%), 3 CVAs (0.95%), and 5 POBs (1.58%)

Conclusions:

PAD-CAB is a safe and effective operation with outcomes that are equivalent or superior to the outcomes reported in the STS registry for

CABG. The PAD-CAB technique takes advantage of the circulatory stability achieved with CPB assistance and eliminates the potential risks associated with aortic cross-clamping and cardioplegic arrest.

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