Evaluation of modified del Nido versus Buckberg solution for cardioplegia during isolated aortic valve replacement surgery
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Not previously presented

Background: Various cardioplegia solutions are used to arrest the heart during cardiac surgeries.

Objective: The objective of this study is to evaluate the difference in outcomes associated with modified del Nido versus Buckberg cardioplegia solution in isolated aortic valve surgery.

Methods: The study was a single surgeon, single site, retrospective chart review. Electronic medical records were reviewed for a six month time period pre- and post-change of cardioplegia solution from Buckberg to modified del Nido. The primary outcome measured was aortic-cross clamp time. Secondary outcomes included cardiopulmonary bypass and operating room times, mortality, potassium, glucose, hemoglobin, and hematocrit levels, duration of mechanical ventilation, new onset atrial fibrillation, antiarrhythmic use, and hospital length of stay.

Results: One hundred patients were included in analysis with 50 patients in each group. Median cross-clamp time was 7 minutes less in the del Nido versus Buckberg group (61.5 vs. 68.5, p=0.011). Median cardiopulmonary bypass time (101.5 vs. 114.0 minutes, p=0.009) and operating room time (218.0 vs. 236.0 minutes, p=0.007) were also less in the del Nido group. Median intra-operative peak glucose (146 vs. 175 mg/dL, p=0.007) and post-operative glucose (171 vs. 204 mg/dL, p<0.001) also favored the del Nido group. Significantly fewer patients in the del Nido group required intra-operative blood transfusion (10 vs. 22, p=0.018).

Conclusion: The use of modified del Nido as compared to Buckberg solution resulted in significantly shorter cross-clamp, cardiopulmonary bypass, and operating room times. Intra-operative and post-operative glucose levels were also lower in the del Nido group.

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