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VALVULAR HEART DISEASE

TIGHT GLUCOSE CONTROL IS NOT SUPERIOR TO PERMISSIVE HYPERGLYCEMIA FOLLOWING VALVE SURGERY

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

Tuesday, April 05, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Adult Cardiothoracic : Predictors of Outcome

Abstract Category: 18. Adult Cardiothoracic Surgery/Valvular Surgery

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Objective: Tight glucose control (≤ 140 mg/dL) is the accepted practice standard after cardiac surgery. Recent data suggest that permissive hyperglycemia (≤ 180 mg/dL) may be superior in the critically ill. However, the optimal glucose control strategy after valve surgery is unknown. We postulated that tight control was superior to permissive hyperglycemia with isolated valve procedures.

Methods: From 1995-2008, we identified 989 patients who underwent primary isolated aortic or mitral valve operations with known diabetes or perioperative hyperglycemia (perioperative serum glucose >126 mg/dL and/or preoperative HbA1c ≥ 8) at our institution. Patients were analyzed by mean glycemic strategy - Tight: ≤ 140 mg/dL (n=311), Permissive hyperglycemia/Moderate: 141-179mg/dL (n=474), and Liberal: ≥ 180 mg/dL (n=204). Patient characteristics, operative features, and outcomes were analyzed.

Results: Preoperative stroke ($p<0.001$) and advanced heart failure ($p=0.016$) were more common in the tight control group compared to moderate and liberal groups. Operative mortality (3.7% [37/989]) and major complications (16.5% [163/989]) as well as infectious and neurologic complications were no different between groups. However, postoperative dialysis was more common with tight control ($p=0.03$). By multivariable analysis, age ($p=0.003$), female gender ($p=0.004$), preoperative stroke ($p<0.001$) and emergent status ($p<0.001$) were predictive of mortality. Importantly, despite differences in patient risk factors and operation, neither tight (adjusted odds ratio [AOR] 1.61, 95% CI [0.82-3.19]) nor moderate glycemic control (AOR 1.60, 95% CI [0.89-2.88]) were predictive of major complications (AUC 0.7). Moreover, neither tight (AOR 0.41, 95% CI [0.12-1.47]) nor moderate control (AOR 0.83, 95% CI [0.28-2.46]) influenced mortality (AUC 0.9).

Conclusions: Contrary to our hypothesis, tight glycemic control appears to be equivalent to moderate control after valve operations. Permissive hyperglycemia should be an acceptable glycemic strategy following isolated valve surgery.