WHICH RISK SCORE BEST PREDICTS POSTOPERATIVE OUTCOMES IN NON-VALVULAR ATRIAL FIBRILLATION PATIENTS UNDERGOING NON-CARDIAC SURGERY

Poster Contributions
Hall C
Sunday, March 30, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Arrhythmias and Clinical EP: New Observations Affecting Clinical Management
Presentation Number: 1217-117

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Background: Patients with non-valvular atrial fibrillation (NVAF) are at risk for adverse events after non-cardiac surgery. The Revised Cardiac Index (RCI) is commonly used to predict post-operative events; however, the prognostic utility of NVAF thromboembolic risk scores (CHADS2, CHA2DS2-VASc, and R2CHADS2) have not been evaluated in patients undergoing non-cardiac surgery.

Methods: Using a population based dataset of NVAF patients (n=32,160) who underwent major or minor non-cardiac surgery between April 1, 1999 and November 30, 2009 in Alberta, Canada, we examined the incremental prognostic value of the CHADS2, CHA2DS2-VASc, or R2CHADS2 scores over the RCI score using continuous net reclassification improvement (NRI). The primary composite outcome was 30 day post-operative mortality, stroke, TIA, or systemic embolism (SE).

Results: The median age was 73 years, 55.1% were male, 6.6% had a previous thromboembolic event, 17% of patients underwent major surgery, and the median risk scores were: RCI = 1, CHADS2 = 1, CHA2DS2-VASc = 3 and R2CHADS2 = 2. The incidence of our 30 day composite was 4.2% (mortality 3.3%; stroke, TIA, or SE 1.2%). For our composite outcome, the RCI c-index was 0.65. The CHADS2 (c-index 0.67; NRI 14.3%, p<0.001), CHA2DS2-VASc (c-index 0.67; NRI 10.7%, p<0.001), and R2CHADS2 scores (c-index 0.68; NRI 11.4%, p<0.001) all significantly improved post-operative risk prediction. The CHADS2, CHA2DS2-VASc, and R2CHADS2 scores were also all significantly better than the RCI for mortality risk prediction (NRI 12.3%, NRI 8.4%, NRI 13.3%, respectively, all p<0.01).

Conclusions: In NVAF patients undergoing non-cardiac surgery, the CHADS2, CHA2DS2-VASc, and R2CHADS2 scores were all superior to the RCI for the prediction of major post-operative events including mortality.