

## 44529 - PERIOPERATIVE RENIN-ANGIOTENSIN ANTAGONIST EXPOSURE AND POSTOPERATIVE OUTCOME IN VASCULAR SURGERY PATIENTS

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**Disclosure:** Honorarium - Janssen Ortho

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**INTRODUCTION:** Angiotensin converting enzyme (ACE) inhibitors and Angiotensin Receptor Blocking (ARB) agents are used to treat hypertension, to prolong survival in patients with heart failure, and to improve cardiac function post myocardial infarction. Postoperative outcome and ACE/ARB utilization has very limited study in the perioperative setting.<sup>1</sup>

**METHODS:** Following research ethics board approval, medical charts of consecutive patients undergoing major vascular surgery between Jan. 1, 1998 and Dec. 31, 2005 at two centres were reviewed. Inclusion criteria were: age over 50, and elective open abdominal aortic aneurysm repair. Exclusion criteria were: emergency surgery, poor medical workup, combined surgical procedures, and cardio-pulmonary bypass. The following information was collected: age, vital signs, weight, creatinine, post medical history, anesthetic technique, IV fluid administration, and postoperative outcomes. The abstracted information was entered into an electronic database for statistical analysis.

**RESULTS:** 1320 patients underwent vascular surgery during the time period and 874 (66%) met inclusion criteria. 347 patients were exposed to ACE/ARB agents: ACE inhibitors (294) or ARB agents (61) and both (8). Thirty-two patients died within 30 days of surgery.

ACE/ARB exposed patients were at higher risk of death within 30 days of surgery: 21/347 (6%) vs. 11/527 (2%),  $p = 0.000$ ; OR = 2.869, CI95 1.36 to 6.06,  $p = 0.044$ ). Patients that died and were exposed to ACE/ARB were less likely to be discharged from the intensive care unit alive to the floor prior to death (4/20 (20%) vs. 7/11 (63%), OR = 7.0, CI95 1.35 to 36.31,  $p = 0.025$ ).

Differences in underlying medical conditions between ACE/ARB exposed and unexposed patients were found. Multinomial analysis of death within 30 days of AAA surgery was performed. Only age, creatinine clearance, diabetes and ACE/ARB exposure remained statistically significant predictors of death. The corrected OR for death within 30 days of surgery for patients exposed to ACE/ARB was 2.716, CI95 1.14 to 6.47,  $p = 0.024$ . The data set was not large enough to detect a difference in death rate if diabetic patients are excluded from the analysis.

**DISCUSSION:** ACE/ARB exposure appears to place patients at increased risk of postoperative complications: most worrisome death. Most differences in underlying medical conditions could be ruled out statistically, diabetes remained a possible confounding variable for the increased risk of death. Given the apparent increased risk of death due to ACE/ARB exposure at the time of surgery we advise caution in using ACE inhibitors or ARB agents prior to major surgery. Clearly more research is needed to understand underlying cause of these findings.

**REFERENCE:** (1) Sear, JW, et al, Intercurrent drug therapy and perioperative cardiovascular mortality in elective and urgent/emergent surgical patients, BJA 2001, 86, 506.