

Abstract Preview**ESC CONGRESS 2020**

Professor Rodrigo Morel Vieira De Melo (EUD ID : 447641)

Clinica Cardiovasc

Av Reitor Miguel Calmon, 1210

40110-100 - Salvador Brazil

Phone : +55 55 71 991622000 -

Email : rodimorel@yahoo.com.br

Title : Perioperative use of renin-angiotensin system inhibitors and short-term outcomes in patients undergoing cardiac surgery

Topic : 26.1 - Cardiovascular Surgery - Coronary Arteries

Category : Bedside

Option : Young Investigator Award (YIA) Basic Science

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RM. Vieira De Melo¹, DC. Azevedo², LN. Danziato¹, MTCF. Fernandes¹, LFC. Alcantara¹, MHF. Barbosa¹, FS. Conceicao¹, SCR. Santos Junior¹, T. Viana², CS. Figueirero², LCP. Passos¹ - (1) Federal University of Bahia, Salvador, Brazil (2) Hospital Ana Nery, Salvador, Brazil

Background: Controversy exists about whether preoperative angiotensin-converting enzyme inhibitor (ACEi) or an angiotensin receptor blocker (ARB) therapy is associated with adverse outcomes after cardiac surgery. Current guidelines stated that it is uncertain about the safety of the preoperative administration of this medications because of the potential deleterious consequences of perioperative hypotension

Purpose: To determine the effect of preoperative therapy with ACEi or ARB on short-term outcome after cardiac surgery.

Methods. Single-center prospective cohort between January 2018 and December 2019. Patients were eligible if they were submitted to elective on-pump cardiac surgery and aged ≥ 18 years. Patients were divided into two groups according to previous use of ACEi or ARB. All preoperative demographic, clinical, and intraoperative surgical variables were collected prospectively. Outcomes of interests were intensive care unit (ICU) mortality, incidence and duration (hours) of postoperative shock (defined as the need for intravenous vasopressors or inopressors), postoperative acute kidney injury (AKI), defined as a doubling of serum creatinine, duration of mechanical ventilation (hours) and length of stay in the ICU (days). A multivariate regression was performed for categorical outcomes and Kruskal-Wallis test for non-parametric continuous variables.

Results: 353 patients were evaluated in the period, 182 (51,6%) of male sex, with a mean age of 54,5 (+-14,7) and STS mortality and EURO scores of 1,93 ($\pm 1,81$) and 1,89 ($\pm 1,9$), respectively. Coronary artery bypass grafting was the common procedure, 168 (47,6%). After multivariate regression, use of ACEi or ARB preoperatively was associated with postoperative shock: RR: 2,03 CI 1,25-3,30, $p=0,004$; incidence of AKI: RR: 2,84 CI 1,01-7,98, increased length of ICU stay: 4 (3 - 6) vs 3 (2 - 5), $p=0,03$; and increased duration of shock: 10 (0 - 39) vs 0 (0 - 24), $p<0,01$. There was no association with the duration of mechanical ventilation: 10,5 (6 - 20) vs 11,0 (5 - 18), $p=0,31$ or ICU mortality: 14 (7,3%) vs 16 (10,0%), $p=0,44$.

Conclusions: The use of preoperative ACEi or ARBs was associated with increased incidence and duration of postoperative shock, incidence of acute kidney injury, and durations of mechanical ventilation and ICU stay.