

## ABSTRACTS - 28<sup>th</sup> EACTS

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### PATIENT BLOOD MANAGEMENT IN OCTOGENARIANS: PREDICTORS OF TRANSFUSION AND PROGNOSTIC IMPLICATIONS

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**Objectives:** Red blood cell (RBC) transfusion is a well-known predictor of acute kidney injury (AKI) and death after cardiac surgery procedures. This study explored whether a similar effect existed among octogenarians.

**Methods:** The study population included 1765 consecutive adult patients undergoing cardiac operations on cardiopulmonary bypass from 2011 to 2013 in a single centre (age:  $67.6 \pm 10.3$  years; octogenarians: 178; female: 33.1%; redo: 6.2%; urgent/emergent: 12.9%; isolated CABG: 40.1%; isolated valve procedures: 30.4%; combined: 26.7%). The relationship between RBCs with

both survival and AKI, and any interaction by age (<80 years vs  $\geq 80$  years) was estimated. A propensity score for the likelihood to receive RBC transfusion was calculated with multivariable logistic regression to balance the effect of confounding factors. Logistical estimation curve was developed to seek for the interaction between this propensity score and age. Age and propensity score for transfusions were then forced into multivariable logistic models for study outcomes.

**Results:** Patients receiving RBCs (41%) had more comorbidities irrespective of age. Patients  $\geq 80$  years of age underwent transfusion more often than patients <80 years (52.8% vs 39.7%;  $P < 0.001$ ). Mean propensity score in octogenarians was  $0.53 \pm 0.3$  vs  $0.39 \pm 0.3$  in younger patients ( $P < 0.0001$ ) with a two-fold increase in the relative risk for transfusion. Age did not independently predict the need for RBCs. AKI and fatality rates were significantly higher in transfused subset irrespective of age. Nevertheless, older age *per se* did not prove an independent predictor of AKI and fatality.

**Conclusion:** Octogenarians receive RBCs more often than do younger patients. Frailty and not age *per se* confers an increased risk of RBC transfusion and worse outcomes. Careful evaluation of preoperative patient profile is mandatory in octogenarians referred for cardiac surgery.