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## Heart Failure and Cardiomyopathies

### SERUM BUTYRYLCHOLINESTERASE PREDICTS SURVIVAL FOLLOWING EXTRACORPOREAL MEMBRANE OXYGENATION AFTER CARDIOVASCULAR SURGERY

Poster Contributions

Hall C

Sunday, March 30, 2014, 9:45 a.m.-10:30 a.m.

Session Title: Heart Failure and Cardiomyopathies: Therapy III

Abstract Category: 14. Heart Failure and Cardiomyopathies: Therapy

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**Background:** Risk stratification in patients undergoing extracorporeal membrane oxygenation (ECMO) support following cardiovascular surgery remains challenging, since data on specific outcome predictors are limited. Serum butyrylcholinesterase demonstrated a strong inverse association with all-cause and cardiovascular mortality in non-critically ill patients. We therefore evaluated the predictive value of preoperative serum butyrylcholinesterase levels in patients undergoing veno-arterial ECMO support following cardiovascular surgery.

**Methods:** We prospectively included 191 patients undergoing veno-arterial ECMO therapy following cardiovascular surgery at a university-affiliated tertiary care center into our registry.

**Results:** All-cause and cardiovascular mortality were defined as primary study endpoints. During a median follow-up time of 51 months (IQR: 34-71) corresponding to 4197 overall months of follow-up, 65% of patients died. Cox proportional hazard regression analysis revealed a significant and independent inverse association between higher butyrylcholinesterase levels and all-cause mortality with an adjusted hazard ratio (HR) of 0.44 (95%CI 0.25-0.78;  $p=0.005$ ) as well as cardiovascular mortality with an adjusted HR of 0.38 (95%CI 0.21-0.70;  $p=0.002$ ) comparing the third with the first tertile. Survival rates were higher in patients within the third tertile of butyrylcholinesterase compared to patients within the first tertile at 30 days (68%vs.44%) as well as at 6 years (47%vs.21%).

**Conclusions:** The current study revealed serum butyrylcholinesterase as a strong and independent inverse predictor of all-cause and cardiovascular mortality in patients undergoing veno-arterial ECMO therapy following cardiovascular surgery. These findings advance the limited knowledge on risk stratification in patients undergoing ECMO support and represent a valuable addition for a comprehensive decision-making prior to ECMO implantation.