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Troponin T predicts cardiogenic shock requiring mechanical circulatory support in patients with valve disease

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Background
Cardiogenic shock is a very serious postoperative complication in patients undergoing heart valve surgery. Mechanical circulatory support is a recognized method of treating patients with this complication. The aim of the presented study was to assess the usefulness of selected biomarkers in predicting the occurrence of postoperative cardiogenic shock requiring mechanical circulatory support.

Methods
This prospective study was conducted on a group of 712 patients undergoing heart valve surgery. The primary end-point at the intra-hospital follow-up was postoperative cardiogenic shock requiring mechanical circulatory support.

Results
The postoperative cardiogenic shock requiring mechanical circulatory support occurred in 20 patients. The statistically significant predictors of postoperative cardiogenic shock requiring mechanical circulatory support at univariate analysis are presented in Table 1. At multivariate analysis high-sensitivity Troponin T measured immediately after surgery (hs-TnT I)(OR 1.006; 95% CI 1.002-1.013; p 0.009) remained independent predictor of the primary end point. The area under receiver operator characteristic curve for primary end-point for hs-TnT I is 0.880 (95% CI 0.853-0.903)(Figure 1).

Conclusions
The postoperative hs-TnT can be used to predict a postoperative cardiogenic shock requiring mechanical circulatory support.
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AUC = 0.880
P < 0.001