

# Simple Blood Test Can Predict Cardiac Risk in Vascular Surgery Patients: Plasma N-terminal pro-B Type Natriuretic Peptide (NT-proBNP) Accurately Predicts Cardiac Risk

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## **Purpose**

The purpose of this study was to assess whether plasma N-terminal pro-B-type natriuretic peptide (NT-proBNP) predicts postoperative cardiac events in patients undergoing major vascular surgery additional to clinical and dobutamine stress echocardiography (DSE) data.

## **Background**

Postoperative cardiac events are related to myocardial ischemia and reduced left ventricular function. The utility of NT-proBNP for preoperative cardiac risk evaluation has not been evaluated.

## **Methods**

We prospectively evaluated 170 consecutive patients scheduled for major non-cardiac vascular surgery by DSE and NT-proBNP measurements. Multivariable logistic regression analysis was performed to evaluate the predictors of cardiac death and nonfatal myocardial infarction during a follow-up of 30 days. Receiver Operating Characteristic analysis was performed to determine the optimal cutoff value of NT-proBNP values that predicts outcome.

## **Results**

The mean age was  $59 \pm 13$  years, and 71% were male. The median NT-proBNP level was 13 pmol/L (interquartile range: 5 to 46 pmol/L). Cardiac events occurred in 2 of 144 (1.4%) patients with NT-proBNP < 63 pmol/L (ie, the optimal cutoff value to predict cardiac events), and in 11 of 26 (42%) patients with NT-proBNP  $\geq$  63 pmol/L (unadjusted odds ratio 52, 95% CI 11 to 256,  $p < .0001$ ). After adjustment for cardiac risk factors and DSE results, NT-proBNP remained significantly associated with cardiac events (adjusted odds ratio [OR]: 18, 95% CI 2 to 130,  $p = .005$ ).

## **Conclusions**

In patients scheduled for major vascular surgery, elevated plasma NT-proBNP levels are independently associated with an increased risk of postoperative cardiac events.