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The predictive value and evolution of N-terminal pro-B-type natriuretic peptide levels following transcutaneous aortic valve implantation.

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Abstract

AIMS:

We sought to define the predictive value and evolution of N-terminal pro-B-type natriuretic peptide (NT-proBNP) levels following transcutaneous aortic valve implantation (TAVI).

METHODS AND RESULTS:

We investigated 91 consecutive patients who underwent TAVI (59 transfemoral [TF], 32 transapical [TA]) in our institution. The balloon-expandable valve was implanted in 75 and the self-expanding in 16 patients. The baseline (within 48 hours prior to procedure), early (24-74 hours), and late (3-12 months) postprocedural NT-proBNP levels were determined. The mortality status of all patients was ascertained as of September 2010. The 30-day and 1.3(mean)-year mortality was 3% and 12% (2%, 9% in the TF and 6%, 19% in the TA group). Increased baseline ($x(2) = 5.9$, $P = 0.016$) and early ($x(2) = 4.9$, $P = 0.028$) NT-proBNP levels were predictive of mortality. All decrements of the NT-proBNP levels in the TF patients were significant (baseline 4,984 ± 8,106 vs. early 3,912 ± 6,551 pg/mL, $P = 0.016$; late 633 ± 606 pg/mL, $P = 0.003$). In contrast, there was a trend for the early levels to increase in the TA patients (6,423 ± 8,897 vs. 8,100 ± 10,178 pg/mL, $P = 0.090$), and a significant decline in the late levels as compared to baseline (1,704 ± 3,417 pg/mL, $P = 0.005$).

CONCLUSION:

NT-proBNP levels are predictive of mortality following TAVI. There is a differential early evolution of their levels between the TF and TA patients and a significant decline later in both groups.