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


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 ($\chi^2 = 5.9$, $P = 0.016$) and early ($\chi^2 = 4.9$, $P = 0.028$) NT-proBNP levels were predictive of mortality. All decrements of the NT-proBNP levels in the TF patients were significant (baseline $4,984 \pm 8,106$ vs. early $3,912 \pm 6,551$ pg/mL, $P = 0.016$; late $633 \pm 606$ pg/mL, $P = 0.003$). In contrast, there was a trend for the early levels to increase in the TA patients ($6,423 \pm 8,897$ vs. $8,100 \pm 10,178$ pg/mL, $P = 0.090$), and a significant decline in the late levels as compared to baseline ($1,704 \pm 3,417$ 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.

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