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Prognostic Value of Brain Natriuretic Peptide in Elderly Patients with Aortic Stenosis

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Background: Aortic valve stenosis (AS) is the most common valvular heart disease in elderly people. Detection of high-risk patients is an important issue for the management of AS. Previous studies have shown that plasma levels of BNP increases with AS severity and may provide prognostic information. However, these studies were impeded by their small sample sizes and inclusion of relatively young patients. In addition, a wide overlap of BNP values between symptomatic and asymptomatic patients was observed.
Methods and Results: Nt-proBNP was measured at entry in the study and patients were prospectively followed on a yearly basis. Inclusion criteria were age ≥70years, at least mild AS, normal left ventricular function and absence of pulmonary or renal insufficiency. 361 patients were included. Mean age was 79±6years. 230 had severe AS and 196 were symptomatic. BNP increased with NYHA class and hemodynamic parameters ($p<0.0001$). However, Nt-proBNP had poor sensibility and specificity for the detection of symptomatic patients (ROC curve=0.73, sensitivity=53%, specificity=79%). Among the 165 asymptomatic patients, 12 underwent a prophylactic surgery and follow-up was in 141 (92%). Normal values of Nt-proBNP were associated to good outcome ($p=0.004$). However, Nt-proBNP was not an independent predictor of outcome after adjustment for valve area, age and gender ($p=0.4$).
Conclusion: Our study is the first to enhance the limits of Nt-proBNP for the evaluation of AS patients. Our data show that Nt-proBNP is not an independent prognostic factor of outcome and raises caution regarding a patients' management based on BNP value especially in the elderly population.