N-terminal Pro-brain Natriuretic Peptide plasma levels are Associated With a Short-Term Diagnosis of Cancer in Patients with Coronary Artery Disease

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Abstract

Background N-terminal pro-brain natriuretic peptide (NT-proBNP) plasma levels are increased in patients with cancer. In this paper we test whether NT-proBNP may identify patients who are going to receive a future cancer diagnosis (CD) in the short term.

Methods We studied 962 patients with stable coronary artery disease and free of cancer and heart failure at baseline. NT-proBNP, galectin-3, monocyte chemoattractant protein-1, high-sensitivity C-reactive protein, high-sensitivity cardiac troponin I (hsTnI), and calcidiol (vitamin D) plasma levels were assessed. The primary outcome was new CD.

Results After 5.40 (2.81-6.94) years of follow-up, 59 patients received a CD. NT-proBNP [HR 1.036 CI (1.015-1.056) per increase in 100 pg/ml; $p=0.001$], previous atrial fibrillation [HR 3.140 CI (1.196-8.243); $p=0.020$], and absence of previous heart failure [HR 0.067 CI (0.006-0.802); $p=0.033$] were independent predictors of a receiving a CD in first three years of follow-up. None of the variables analyzed predicted a CD beyond this time. A previous history of heart failure was present in 3.3% of patients receiving a CD in the first three years of follow-up, in 0.0% of those receiving this diagnosis beyond three years, and in 12.3% of patients not developing cancer ($p=0.036$).

Conclusions In patients with coronary artery disease, NT-proBNP is an independent predictor of CD in the first three years of follow-up but not later, suggesting that it could be detecting subclinical undiagnosed cancers. The existence of previous heart failure does not account for these differences. New studies in large populations are needed to confirm these findings.

Full Text

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