of clinical settings with or without CHF. BNP is elevated in other cardiac disease states such as the acute coronary syndromes, diastolic dysfunction, atrial fibrillation, amyloidosis, restrictive cardiomyopathy, and valvular heart disease. BNP is elevated in non-cardiac diseases such as pulmonary hypertension, chronic obstructive pulmonary disease, pulmonary embolism, and renal failure. BNP is also elevated in the setting of critical illness, such as in acute decompensated CHF and sepsis [4]. This variation across clinical settings has significant implications given the increasing frequency with which BNP testing is being performed. It is therefore important for clinicians to understand how to appropriately interpret BNP in light of the comorbidities of individual patients to maximize its clinical utility.

Despite all the aforementioned potential indications for the role of BNP as a diagnostic and prognostic marker it must, however, be reiterated that currently the only reasonable practical application of BNP as a marker is limited to differentiation of acute dyspnea, monitoring of therapeutic responses, and prognosis of acute or decompensated CHF.

References


eComment: Is NT-proBNP a marker for adverse postoperative outcomes in patients undergoing lung and esophageal surgery?

Authors: Stefano Cafarotti, Department of Thoracic Surgery, Catholic University, Rome, Italy; Glaucio Cusumano, Venanzio Porziella, Stefano Margaritorta doi:10.1510/icvts.2010.252601B

We have read with great interest the article by Mitchell and Webb [1] and the eComment by Raja and Chowdhury [2] reporting on the validity of NT-proBNP as a marker for adverse postoperative outcomes in patients undergoing cardiac surgery. Biochemical markers of myocardial injury play an essential role in the diagnosis, prognosis, risk assessment and therapeutic guidance of patients presenting with a spectrum of cardiac conditions. In patients undergoing cardiac surgery, the procedure itself is usually associated with increased levels of a whole variety of inflammatory and cardiac myocyte damage markers. In addition, many biochemical markers may already be deranged preoperatively as a result of pre-existing pathology. The question is whether any of these observations can be usefully equated to diagnostic or prognostic information, and indeed whether such information provides additional information to that already provided by what is already known about the patient. It is obvious that patient with high brain natriuretic levels will exhibit an adverse outcome after every kind of surgery or in medical therapy. As cardiac troponins show the myocardial damage, patients with higher levels of troponin are at risk of heart failure or death after myocardial infarction. Like the preoperative low glomerular filtration rate or high creatinin levels are at risk for postoperative renal insufficiency. Clearly cardiac surgery patients may present with dynamic deviations in the levels of a whole variety of cardiac biomarkers. This may be as a result of preoperative pathological status or as a result of the surgery and subsequent progress, including complications. The exact usefulness of measuring the levels of some of these markers needs to be assessed following adjustment for other known factors that are known to predict outcome. The next step would be to use such knowledge and assess whether outcomes can be modified in previously identified high-risk groups.

References


eComment: B-type brain natriuretic peptide dynamics in surgical treatment of cardiological patients

Authors: Leo A. Bockeria, Bakuovlev Scientific Center for Cardiovascular Surgery, 135 Roublevskoe Shosse, Moscow, Russia; I.I. Skopin, M.N. Samso-nova, M.G. Plyushch doi:10.1510/icvts.2010.252601D

Estimation of brain natriuretic peptide (BNP) is gradually becoming a standard in heart failure diagnostics. Data from other sources [1, 2] and results of our own studies [3, 4] both confirm that BNP level has a very high prognostic value in the assessment of heart failure risk and fatal outcome after surgical correction of acquired and congenital heart disease. In our investigation we explored BNP levels before and after surgical treatment performed on 52 adult patients with valvular heart disease, dilatation and diminished left ventricular contractile function (LVdD ≥ 60 mm, LVEF ≤ 50%), average age 45.0 ± 13.0 years, as well as on 41 children with tetralogy of Fallot, average age 2.0 ± 0.9 years. The investigation proved that BNP level is characterized by reliable correlation with heart failure functional class. In the early postoperative period, initial BNP level correlated with the dose
and duration of cardioactive support applied, as well as with the necessity for introduction of circulatory assist devices. The number of days spent in intensive care unit was also closely connected to the initial BNP level. Among deceased patients and patients with a postoperative period complicated by heart failure, BNP levels were considerably higher compared to other patients.

References


