

Editorials

Echocardiography or Nt-proANP in post-myocardial infarction patients: is one enough?

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Left ventricular function is an important predictor of cardiac morbidity and mortality in patients who survive acute myocardial infarction^[1,2]. It is also known that the majority of patients who survive an acute myocardial infarction have preserved or only slightly impaired left ventricular systolic function^[3]. The role of echocardiography^[2] and natriuretic peptides^[4] in the prognostic stratification of patients with poor left ventricular function is well established. However, in the group of patients with normal systolic function it is essential to find a good stratification marker, that can easily and cost effectively be used in the clinic. This is very important since it may have significant implications in the treatment strategy to be followed in the different subgroups of patients with acute coronary syndromes.

In the current issue, Otterstad *et al.*^[5] present a very interesting prospective study, LEVEREM (Left Ventricular REModeling). They evaluated the relative role of left ventricular volumes, systolic function, assessed by echocardiography, and N-terminal proatrial natriuretic peptide (Nt-proANP) in cardiac morbidity and mortality in post myocardial infarction patients with preserved left ventricular systolic function (left ventricular ejection fraction >40%). They showed that baseline Nt-proANP, together with early changes in left ventricular volumes and left ventricular ejection fraction from baseline to 3 months, predicted adverse cardiac events over a 2-year follow up period.

The other conclusion we may draw from this study is that both Nt-proANP and echocardiography should be taken into consideration in post myocardial infarction patients at baseline, even when they have normal ejection fraction. The authors showed that the two important predictors of adverse events over a 24-month follow-up period were: baseline Nt-proANP (and not changes in Nt-proANP from baseline to 3 months) and early changes in the echocardiographic left ventricular volumes and ejection fraction from baseline to 3 months (and not

baseline echocardiographic left ventricular volumes and ejection fraction). This is very important since, based on these results, we suggest that Nt-proANP should be measured at baseline only, in all post myocardial infarction patients, since this is when it is shown to be a significant predictor of outcome. In addition, the assessment of baseline left ventricular volumes and ejection fraction by echocardiography should also be conducted in all patients at baseline and 3 months post-myocardial infarction, since the most relevant parameter is the change in left ventricular volume and ejection fraction from baseline to 3 months. These two variables taken together may thus help us in defining the subgroups of patients post-myocardial infarction that will benefit most from an aggressive medical or interventional therapy strategy.

One important issue is in the selection of subgroups of patients post acute myocardial infarction who may or may not need ACE inhibition. It seems tempting to say, as the authors do, that non-diabetic patients <55 years old with preserved left ventricular systolic function, a low baseline Nt-proANP and no left ventricular dilatation at 3 months represent a low risk group and may not need ACE-inhibition. Randomized trials are needed to answer this question.

Very recently de Lemos *et al.* demonstrated that a single measurement of B-type natriuretic peptide, obtained in the first few days after an acute coronary syndrome, has a significant predictive value for risk stratification^[6], identifying those patients who are at increased risk for adverse events. The authors suggest that all patients with an acute coronary syndrome should have measurements of B-type natriuretic peptide taken early for risk stratification and treatment adjustment.

The present article adds to our knowledge on the mechanisms underlying the acute coronary syndromes and particularly on the use of tests for neurohormonal activation that can help identify those patients with acute myocardial infarction who are at an increased risk for adverse events. In an era of cost containment this may be an important tool that can help us select patients at a higher risk, who need to be treated more aggressively and subsequently more expensively. Further studies should directly assess the role of

neurohormonal agents in identifying patients who would benefit from different treatment strategies. This may also play an important role in the development of new drugs, such as antineurohormonal agents, which can improve the prognosis of acute myocardial infarction survivors. It also shows that echocardiography is still a very important player in risk stratification of patients post myocardial infarction, even in those who have a normal systolic function at discharge, since it can identify prospectively those who will develop left ventricular systolic dysfunction.

In conclusion, the assessment of neurohormonal agents at baseline in patients post myocardial infarction, together with the echocardiographic assessment of left ventricular volumes and ejection fraction at baseline and 3 months post myocardial infarction are important prognostic markers of left ventricular dysfunction and may help in the identification of patients who need a more aggressive treatment strategy in the setting of acute coronary syndromes.


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Coronary angiography and revascularization for acute coronary syndromes without ST elevation: the next challenge

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The STRATEG-SIA study published in this issue is a registry of acute coronary syndromes without ST elevation in Argentina^[1]. The aim of the study was to describe the management, analyse the factors influencing treatment and assess short- and long-term outcomes. Seventy-seven coronary care units (CCU) enrolled consecutive patients over a 1-month period. The major comparison was between two catheterization strategies. Patients were included in the invasive strategy if they received a coronary angiography procedure during the first 48 h of hospitalization and in the conservative strategy if not. The rates of death and myocardial infarction were higher at hospital discharge in the invasive compared to the non-invasive strategy,

but at 1 year there was no apparent difference. Patients were stratified into high, medium and low risk using the AHCPR and NHLBI guidelines. Low risk patients who underwent revascularization showed a higher event rate than similar patients managed with medical treatment, but high risk patients who underwent revascularization had lower event rates than those managed with medical treatment. The investigators were concerned that lower risk patients were being selected for interventions. They conclude that a routine unselected invasive procedure is not associated with long-term benefits.

The observational nature of the study and the post-hoc stratification make comparison of efficacy of different management strategies prone to bias. The groups may not be balanced because of important differences in baseline characteristics for both known