

## Renal functions and prognosis in acute myocardial infarction. Concomitant left ventricular dysfunction should have been taken into account

In the current study entitled “Prognostic impact of renal dysfunction on long-term mortality in patients with preserved, moderately impaired, and severely impaired left ventricular systolic function following myocardial infarction. *Anatol J Cardiol* 2018; 20: 21-8.” Savic et al. (1), have evaluated the prognostic impact of renal dysfunction (RD) at admission in patients with preserved, moderately, and severely impaired left ventricular systolic function following ST-elevation myocardial infarction (STEMI) treated with primary percutaneous coronary intervention. They found that patients with RD renal dysfunction (RD) had higher 6-year mortality and that renal dysfunction RD at admission was a strong independent predictor in patients with impaired left ventricular systolic function but not in those with preserved left ventricular systolic function (LVEF >50%). In patients with impaired left ventricular systolic function (LVEF <40%) and a mid-range LVEF (40%–50%), the presence of RD increased the 6-year mortality by 3 and 2.5 times, respectively.

According to the current literature, RD and left ventricular systolic function are strong independent predictors for short- and long-term outcomes following myocardial infarction (2-6). The main strength of this study is the number of the study population (approximately 2,500 patients). Additionally, in the literature, most of the studies on this issue used LVEF only as a confounding factor to be corrected in the regression analysis. Savic et al. (1), however, have classified patients into categories with respect to LVEF. Within each LVEF group, patients with RD had a worse outcome both in the short and long terms (1). In HORIZONS-AMI trial (3), LVEF <40% at admission was an independent predictor of 1-year mortality in patients with STEMI, whereas LVEF of 40%-50% was not related with negative outcomes. Methodologically, in the current study of Savic et al. (1), the prognostic impact of LVEF on long-term mortality was not analyzed separately, if anything, along with the presence of baseline RD. On the contrary, in this study, the LVEF values were determined after primary PCI, and not at admission. These factors can explain the discrepancies between the two trials. Conversely, the main limitation of this study is that the serum creatinine level was measured once at admission and never again after the index value and during follow-up. The admission

value could be an indicator of either a chronic state or acute deterioration. Moreover, the possible confounding factors (i.e., instantaneous hemodynamic and hydration status or contrast nephropathy) affecting the GFR value during hospitalization were not considered. Nevertheless, these results are of great importance for the management of STEMI in our daily practice and could inspire further large scale clinical trials on this issue.

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