# ABSTRACT

*Risk stratification of STEMI patients using arterial blood lactate in relation with coronary angiography and echocardiography.*

Institute(s): Critical Care Department, Kasr Al-Aini Hospitals. Cairo University, Cairo, Egypt

INTRODUCTION. Serum lactate level as a marker of organ hypoperfusion is an important prognostic marker. however, its rule in acute ST elevation myocardial infarction (STEMI) need further evaluation.

OBJECTIVES. To assess the rule of serum lactate level as a method for risk stratification of patients admitted with acute STEMI.

METHODS. 50 consecutive patients with acute STEMI were enrolled in the study. After exclusion of patients with any known cause for elevated lactate level, arterial blood lactate was measured immediately on admission. In-hospital, 30 days and 3 months mortality were the study endpoints.

RESULTS. 50 patients with mean age of 65.6±6.13years, with 78% are males. The distribution of risk factors was: Smoking 58%, diabetes mellitus 56%, hypertension 54%, and dyslipidemia 50% and previous history of ischemic heart disease 44%. Patients were managed according to the latest guidelines. The in-hospital mortality was 6% during the hospital stay, 10% after 30 days and 22% after 3 months. 19 patients (38%) had lactate level above 4 mmol/l. They showed the highest incidence of complications (acute mitral regurge 14%, acute heart failure 14%or cardiogenic shock 12%), and highest rate of mortality (in-hospital mortality 6%, 30 days 10%and 3 months 22%). Admission lactate with a

cutoff value of 4 had a sensitivity of 90% and a specificity of 89 % for prediction of 3 months mortality, with the area under the curve of 0.79.

CONCLUSIONS. Measurement of arterial lactate at presentation in patients with STEMI has the potential to improve acute risk stratification, and can be used as a prognostic tool in this group of patients.

Key words:   lactate -   coronary angiography – echocardiography - Risk stratification – STEMI – mortality -    complications