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Redefining optimal serum potassium target in acute coronary syndrome: First study report from Indonesia

Jeffri Gunawan, Dono Antono, Ika Prasetya Wijaya and Sukamto Koesnoe
Cipto Mangunkusumo National Hospital-Universitas Indonesia, Indonesia

Introduction & Objective: Acute Coronary Syndrome (ACS) is the leading cause of increased morbidity and mortality across the globe. This mortality was known to be associated to the serum potassium level on admission. Conflicting results exist between recent studies and established guidelines, while in Indonesia it becomes more complex due to the limitation of provision of drugs by the National Healthcare Insurance/ Jaminan Kesehatan Nasional (JKN). To determine the association between serums potassium levels on admission of subjects with acute coronary syndrome and in-hospital mortality, especially in the era of JKN. To redefine the optimal serum potassium target in acute coronary syndrome patients.

Method: Included in the study were 673 acute coronary syndrome patients hospitalized in Indonesian National Cipto Mangunkusumo Hospital. The outcome of the study was all-cause in-hospital mortality. Logistic regression models adjusted for risk factors, hospital treatment and co-morbidities were constructed.

Result: Total of 163 patients (24.22%) with abnormal serum potassium (K<3.50 mEq/L or >5.0 mEq/L) and 510 subjects with normal serum potassium (75.78%). Logistic regression shows significant association between serum potassium level on admission and in-hospital mortality with p value of 0.04 (adjusted RR 2.184; 95% CI: 1.037-4.601). The risk of dying for patients with serum potassium of 4.0-<4.5 mEq/L was increased compared to subjects with potassium of 3.50-<4.0 mEq/L (relative risk 1.4; 95% CI: 0.497-3.93).

Conclusion: ACS patients with abnormal serum potassium level at admission have significant association with in-hospital mortality. Admission serum potassium level of >4.0 mEq/L may be associated with increased mortality risk in patients with ACS. Optimal target of serum potassium level in acute coronary syndrome may be considered to be redefined to a range of 3.50-3.99 mEq/L.

jeffri.gunawan@aol.com