Lactate and other clinico laboratory predictors for subtle myocardial dysfunction in pediatric intensive care unit

Heba F Elgebaly
Cairo University, Egypt

Introduction: This study aimed to determine the incidence of admission subtle myocardial dysfunction (SMD) in critically ill children by measuring cardiac troponin I (cTnI) and to identify clinic laboratory risk factors.

Methods: Admission systolic blood pressure (SBP) registration, categorizing patients into two different groups: Sepsis and non-sepsis. Laboratory investigations included: Hemoglobin, urea, creatinine, alanine aminotransferase (ALT); aspartate transaminase (AST) and serum troponin I (cTnI) and lactate.

Results: Sixty-three patients were enrolled. Eleven (17.5%) patients had SMD. All SMD patients were in severe sepsis or septic shock having significant characteristics: 1. cTnI (median 0.7 ng/mL, P<0.000), lactate (median 5.5 mmol/L, P<0.000), 2. Age (median 6mol, P<0.04), 3. SBP (median 73 mm Hg, P<0.001), 4. ALT and AST (median 259 IU/dl and 586 IU/dl, P<0.000 for each), 5. BUN and Creatinine (median 29 mg/dl, P<0.002, median 1.4 mg/dl, P<0.01, respectively) and (6) Hemoglobin (median 7.2 g/dl, P<0.003). Lactate Level > 3.3 mmol/L (95% CI -0.9 to -0.25, P<0.001) and high ALT (95% CI -0.002 to 0.000, P<0.001) are predictors of SMD. High Lactate had a sensitivity of 90.9%, specificity of 89.9% with positive predictive value of 83.3%, negative predictive value of 94.1% and accuracy of 90% for SMD. Patients with SMD had significant mortality.

Conclusion: Subtle myocardial dysfunction is detected in infants with severe sepsis and septic shock. SMD should be suspected in those patients showing high ALT and Lactate level >3.3 mmol/L.

Biography
Heba F Elgebaly has completed her Doctorate degree at the age of 32 years from Cairo University. She is working in the field of pediatric critical care medicine at the main children’s hospital in Egypt since 2008. She is an AHA instructor for PALS since 2012. She has published more than 5 papers in reputed journals and has been serving as a Reviewer in the Egyptian Pediatric Association Gazette.

heba_elgebaly@hotmail.com

Notes: