ABSTRACT

OBJECTIVES: To investigate the association between PICU shock index and mortality in children with sepsis/septic shock. To explore cut off values for ICU mortality, how change in shock index over the first 6 hours of ICU admission is associated with outcome.

DESIGN: Prospective study

SETTING: Single centre tertiary PICU

SUBJECTS: 50 children with a diagnosis of sepsis/septic shock

METHODS AND RESULTS: From January to June 2017, 50 children who met International pediatric Sepsis Conference of 2005 criteria of sepsis were included and the overall mortality was 32%. In age group ≤ 1 year, cut off value of SI at 0 hour was 2.16, relative risk of mortality 2.01 (95% CI, 0.67 – 5.91) and cut off value of SI at 6 hours was 1.77, relative risk of mortality 2.85 (95% CI, 0.78 – 10.37). In age group >1 to ≤6 year, cut off value of SI at 0 hour was 1.43, relative risk of mortality 2.14 (95% CI, 0.71 to 6.4) and cut off value of SI at 6 hours was 1.77, odds ratio 87 (95% CI, 2.95 to 2534). In age group >6 to 12 years, cut off value of SI at 0 hour was 2.03, relative risk of mortality 7 (95% CI, 0.67 – 72) and cut off value of SI at 6 hours was 1.56, relative risk of mortality 15 (95% CI, 2.25 – 99.7). Higher SI values were associated with mortality and increasing trend of SI increases the risk of mortality.
CONCLUSION: Shock index may be a promising marker of mortality in children with sepsis/septic shock. Given the higher risk of mortality with higher SI values and with the cut off values of SI above which the risk of mortality increases, children with elevated SI values and above the cut off range for mortality may benefit from more aggressive resuscitation and intensive care.