C-REACTIVE PROTEIN AND PROCALCITONIN AS PREDICTORS OF OUTCOME OF SEPSIS PATIENTS IN THE PEDIATRIC INTENSIVE CARE UNIT OF A TERTIARY HOSPITAL: A FIVE-YEAR STUDY

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INTRODUCTION

The management of sepsis in critically ill pediatric patients, especially in tertiary pediatric hospitals, remains a significant challenge due to the high global incidence, associated mortality rates, and diagnostic complexities. Opportunities exist in the use of biomarkers such as CRP and Procalcitonin in severity determination and outcome prediction which can improve sepsis management and patient outcomes. This study aims to determine the association of CRP and Procalcitonin in the outcome of pediatric sepsis among patients admitted at the pediatric intensive care unit (PICU) of Philippine Children's Medical Center.

METHODOLOGY

This was a single center retrospective study which used the medical records of patients admitted with the diagnosis of pediatric sepsis from January 2018 to December 2022.

Keywords: Pediatric sepsis, CRP, Procalcitonin, PICU, Pediatric Intensive Care Unit

RESULTS

A total of 303 patients with pediatric sepsis were included where 40.9% had > 1 week ICU stay, 57.8% had multiorgan dysfunction, and 27.4% had mortality. Among pediatric patients with sepsis, 85.8% had elevated CRP results (≥6 mg/L) and 78.4% had elevated PCT results (≥0.5 ug/L). PCT showed poor prognostic performance in predicting prolonged ICU stay (AUC=0.54), MODS (AUC =0.51), and mortality (AUC =0.58). CRP also showed poor prognostic performance in predicting prolonged ICU stay (AUC=0.54), MODS (AUC =0.55), and mortality (AUC =0.56).

DISCUSSION

Majority of children with sepsis admitted in the intensive care unit had elevated CRP and Procalcitonin. However, CRP and Procalcitonin were not seen to be significantly associated with outcomes of pediatric sepsis. Both parameters showed low sensitivity, specificity, and accuracy in predicting any adverse event.