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Value of thrombomodulin as a diagnostic and prognostic marker for sepsis in critically ill

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Background: Pediatric sepsis is life-threatening organ dysfunction and a leading cause of death for children.

Aim: To assess the role serum thrombomodulin in the diagnosis and prediction of mortality in pediatric septic cases.

Methods: This a prospective cohort study carried out at the Pediatric Intensive Care Unit (PICU) of Menoufia University Hospital. We included 70 critically ill patients admitted to PICU and 25 apparently healthy controls from October 2018 to September 2019. Clinical examination was performed including calculation of the Pediatric Risk of Mortality and Pediatric Index of Mortality II. Serum Thrombomodulin was performed for patients at admission and for the controls. Patients were followed up for 30 days.

Results: Serum Thrombomodulin level was significantly higher among the total patient cohort and those with systemic inflammatory response syndrome, sepsis and severe sepsis than among the controls ($p < 0.001$). Furthermore, Serum Thrombomodulin was significantly elevated in non survivors compared with survivors ($p = 0.005$). Receiver-operating characteristic curve analysis exhibited an Area Under the Curve (AUC) of 0.915 for Thrombomodulin for prediction of sepsis, whereas C-reactive protein had AUC of 0.789. Regarding the prognosis, PIIINP had AUC of 0.711 for prediction of mortality, whereas the AUC for Pediatric Risk of Mortality and Pediatric Index of Mortality 2 were 0.918, 0.960 respectively.

Conclusion: Serum Thrombomodulin is a promising marker for pediatric sepsis. The data showed that serum Thrombomodulin had added value for early diagnosis of sepsis in critically ill children.

Keywords: Thrombomodulin, C-reactive protein, Critically ill, Pediatric risk of mortality, Pediatric index of mortality 2, Sepsis.

Biography

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