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Title: Acute Kidney Injury in COVID-19 Pediatric Patients: Analysis of the Virtual Pediatric Systems data

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Background

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is responsible for the 2019 novel coronavirus disease pandemic (COVID-19). Despite vast research about the adult population, there has been little data collected on acute kidney injury (AKI) epidemiology, associated risk factors, treatments, and mortality in pediatric COVID-19 patients admitted to the ICU. AKI is a severe complication of COVID-19 among children and adolescents. Therefore, understanding all aspects of the disease is crucial to further developing treatment and preventative care strategies to reduce morbidity and mortality.

Objective

This study aims to identify the epidemiology, associated risk factors, treatments, and mortality of AKI in pediatric COVID-19 patients admitted to the intensive care unit (ICU) in North America using the Virtual Pediatric Systems (VPS) database.

Method

This is a retrospective study of COVID-19 pediatric patients (age ≤ 24 years) in the pediatric ICU within North America using the VPS COVID-19 database between January 1, 2020 and June 30, 2020.

Results

Data regarding 1240 pediatric COVID-19 patients was analyzed. 172 of these patients had renal/urinary system involvement. Of the 172 patients with renal involvement, there were 19 confirmed deaths. 36 patients received renal replacement therapy (RRT). Of these 36 patients, there were 2 confirmed deaths. 264 (24.67%) patients were diagnosed with Multisystem Inflammatory Syndrome in Children (MIS-C).

Conclusion

Although COVID-19 in the pediatric population tends to present more favorably, renal involvement among the pediatric COVID-19 patient population may be considered a negative prognostic factor with respect to patient outcomes.