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Title

The Impact of COVID-19 Pandemic on Patient Care of Adult Patients with Acute Kidney Injury in Academic Medical Centers

Priority 1 (Research Category)

Big Data

Presenters

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Abstract

Context: The impact of the COVID-19 pandemic on patients with acute kidney injury (AKI) in Academic Medical Centers (AMCs) remains unclear.

Objective: To assess the epidemiology and mortality risk among patients with AKI discharged from AMCs in the US from October 2019 to December 2023. Study Design: This retrospective case series analysis utilized Vizient's clinical database data. The study is divided into three periods: pre-COVID (Oct 2019 to Mar 2020), COVID (Apr 2020 to May 2023), and post-COVID (Jun 2023 to Dec 2023). Mixed models were used for analysis.

Setting: AMCs within the US. Population Studied: The study population includes adults over 18 with AKI discharged from AMCs, who Vizient identified as having been admitted to the general medicine service line (DRG based). Outcome Measures: The primary outcomes were the number of encounters, length of stay (LOS), and mortality rate (MR). Results: The study included 5433 patients with AKI discharged from 106 AMCs. The average monthly encounters were 197 pre-COVID, 209 during COVID, and 216 post-COVID, respectively (all $p<0.0001$). The mean observed LOS was 7.1 days pre-COVID, increased to 7.7 days during COVID, then decreased to 7.5 days post-COVID which was still higher than pre-COVID (all $p<0.0001$). The observed MR was 7.6% pre-COVID, which was lower than 8.1% during COVID ($p<0.0001$), but higher than 7.1% post-COVID ($p=0.0022$). The case mix index (CMI) was 1.42 pre-COVID, increased to 1.50 during COVID, then recovered partially to 1.47 post-COVID, (all $p<0.0001$). Conclusions: The study demonstrates an increase in encounters of patients with AKI during COVID and post-COVID, indicating a possible negative effect of the COVID pandemic on kidney function. However, the LOS increased during COVID, then recovered a little post-COVID, but not back to the level of pre-COVID, which may relate to decreased numbers of patients with COVID or the timely diagnosis of AKI due to the realization that COVID infection could affect kidney function. The decrease in MR among

patients with AKI post-COVID also may reflect the improvement related to possible earlier diagnosis and management of AKI. The increase in the CMI during COVID and post-COVID suggests a more complex and resource-intensive patient population. Further studies should explore COVID's long-term effects on kidney function.