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98. Comparative Analysis of Pediatric Drug Overdoses Requiring ICU: Before, During, and After the COVID-19 Pandemic

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Background: Drug overdoses are one of the leading causes of pediatric hospitalizations and can be predictive of suicide, second leading cause of death for 12–18-year-olds. Drug overdoses have steadily increased since the COVID-19 pandemic, requiring a large-scale comparative analysis of ingestion severity for patients presenting to Pediatric Intensive Care Unit (PICU) before and after that time.

Hypothesis: We hypothesized drug overdoses from opioids, non-opioid analgesics, antidepressants, anticonvulsants, stimulants, alcohols, or cannabis presenting to PICU during the COVID-19 pandemic had higher PICU mortality scores, Pediatric Risk of Mortality (PRISM) and Pediatric Index of Mortality (PIM), than those before and after pandemic.

Methods: This secondary analysis of drug overdoses from Virtual Pediatric Systems (VPS, LLC) database categorized three time periods: pre-COVID (January 1, 2019-February 28, 2020), peak-COVID (March 1, 2020-August 10, 2021), and post-COVID pandemic (August 11, 2021-June 30, 2023). Bivariate statistical analysis and multivariable log-linear regression models determined associations with mortality scoring (PRISM-III) stratified by COVID time-period.

Results: Patients identified: 35,125. Significant differences found for poisonings across COVID periods for race/ethnicity, age, and sex. There was an overall trend for higher PRISM and PIM scores during Peak-COVID; there were several sub-categories of ingestions that were an exception. Cannabis poisonings increased in the post-COVID pandemic (14.3%) compared pre-COVID (7.6%; $p < 0.001$) with increased PRISM-III scores across all three time periods ($p < 0.001$). PRISM-III for opioids was higher in peak COVID (4.4%) compared pre-COVID (3.2%) and post-COVID (4.0%; $p < 0.001$). Risk factors for higher mortality scores were similar in all three time periods, apart from anticonvulsants being associated with 13% higher severity (compared to without anti-convulsant poisonings) in post-COVID era (Adjusted Log-Odds Ratio: 1.13; 95% CI: 1.02, 1.25)

Conclusion: PRISM-III scores were higher in peak-COVID for most pediatric poisonings admitted to the PICU. This data is valuable in expanding preventative epidemiologic measures for pediatric populations.