

EVOLVING TRAUMA PATTERNS DURING THE COVID-19 PANDEMIC: TRENDS AND IMPLICATIONS

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INTRODUCTION

The implementation of public health measures aimed at curbing COVID-19 altered trauma injury patterns across the United States, showing an increase in incidence of penetrating trauma. We investigated the rate and nature of traumatic injuries and associated mortality before and after the pandemic at a safety-net Level 1 Trauma Center in Houston, TX.

METHODS

A retrospective analysis of the trauma registry was conducted based on the WHO declaration of public health emergency. Descriptive statistics and inferential testing were employed to assess differences and associations.

1 Jan. 2017 – 3 Jan. 2020

Pre-COVID

3 Jan. 2020 – 5 Nov. 2023

COVID

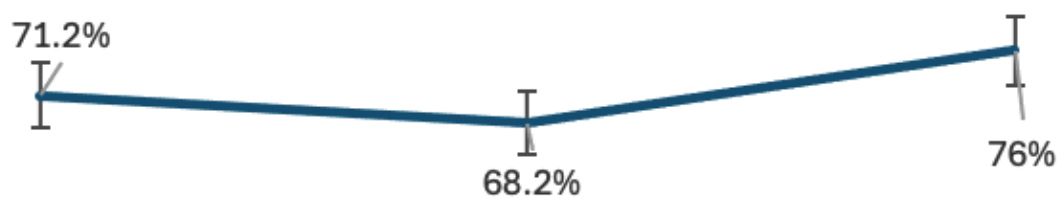
5 Nov. – 31 Dec. 2023

Post-COVID

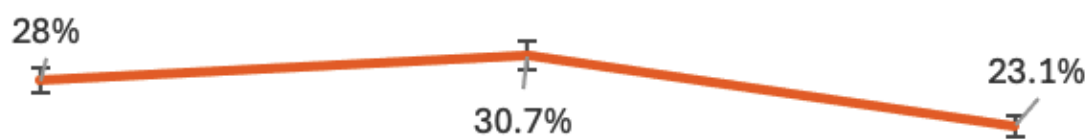
RESULTS

Trauma Trends Before and After Covid-19

Blunt Trauma



Penetrating Trauma



Pre-Covid Covid Post-Covid

The study included 9,278 participants divided into pre-COVID (n=3,645), during-COVID (n=4,641), and post-COVID (n=992) groups. An increase in penetrating trauma incidents was observed in the COVID period (28% pre-COVID vs. 30.7% during-COVID), which markedly decreased in the post-COVID period (23.1%, $p < 0.001$). This was accompanied by a significant decrease in blunt trauma cases during COVID (71.2% vs. 68.2%), with an all-time high post-COVID (76%, $p < 0.001$).

Admission rates steadily decreased from 91.4% pre-COVID to 88% during-COVID to 87.1%, post-COVID ($p < 0.001$), with **no significant differences in mortality or length of stay**. ICU admissions decreased during COVID and increased after (44.9% pre-COVID, 41.9% during-COVID, 45% post-COVID, $p = 0.012$).

CONCLUSIONS

Noteworthy increase in penetrating trauma followed by a decrease post-pandemic.

Overall admission rates declined post-COVID, with no significant changes in mortality.

Need for ongoing evaluation of trauma trends to optimize resource allocation for the evolving patient needs.

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