

# COVID-19 Pandemic Effects in the Geriatric Trauma Population: Revelry Ad Malum?

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## Objectives:

Reported effects of the COVID-19 pandemic on geriatric trauma have been variable. The aim of our study was to investigate the characteristics of geriatric trauma, including alcohol use, during the pandemic at our center.

## Background:

Traditionally, trauma has been thought of as a disease of the young, however, the demographics of the traumatically injured patient is changing with an aging population. Recent research predicts that geriatric adults will be the plurality of severely injured trauma patients<sup>1</sup>. The COVID-19 pandemic has altered many of the behaviors of our patients, and we seek to better outline the impact this has had on geriatric trauma patients<sup>2</sup>.

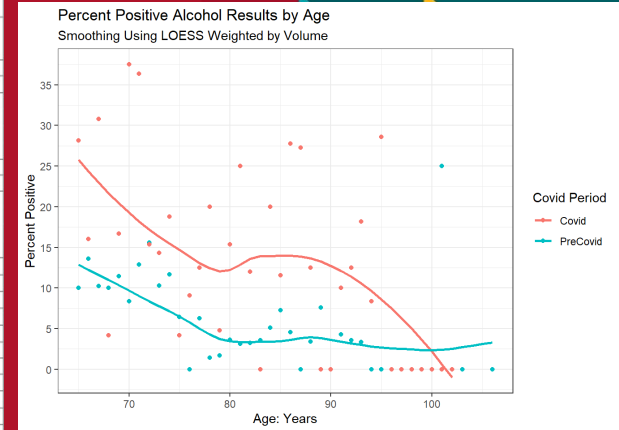
## Methods:

Our ACS verified, level 1 trauma center database was queried for all patients age  $\geq 65$  presenting between 3/1/2020 and 10/30/2022. Data from March to October of 2017 through 2019 served as a control. Patient variables analyzed included demographics, mechanisms, injury severity score (ISS) and positive blood alcohol.

## Results:

Overall geriatric trauma volumes increased by 2.4% during the pandemic (605 vs 591/average). Pandemic patients had a similar age, gender, and ethnicity. TRISS, ISS, in-patient mortality and hospital length of stay were similar. Mechanism of injury distribution was similar, as were the specific rates of falls, transportation injury and firearm injury. ICU admission rates and median ICU length of stay were similar. Mechanical ventilation rates were similar; however, pandemic patients had a longer median duration of mechanical ventilation (3.0 [2.0-7.5] vs 2.0 [1.0-6.0] days,  $p = 0.038$ ). Rates of positive blood alcohol at evaluation were significantly higher during the pandemic (16.0% vs 6.3%,  $p < 0.001$ ).

Geriatric Trauma Patient Characteristics			
	Pre-Pandemic 1,772 (591/year)	Pandemic 605	<i>p</i>
Age (Mean)	76	78	0.107
Gender (Male)	811 (45.8%)	292 (48.3%)	0.299
Ethnicity			0.090
Caucasian	1627 (92.1%)	539 (89.2%)	
African American	77 (4.4%)	34 (5.6%)	
Other	63 (3.6%)	31 (5.1%)	
ISS (Mean)	9	9	0.316
TRISS (Mean)	0.955	0.955	0.937
Mechanism of Injury Distribution			0.170
Blunt	1731 (97.7%)	598 (98.8%)	
Penetrating	25 (1.4%)	2 (0.5%)	
Other	16 (0.9%)	4 (0.7%)	
Injury by Fall	1441 (81.3%)	507 (83.9%)	0.159
Transportation injury	218 (12.3%)	68 (11.3%)	0.516
Injury by Firearm	6 (0.3%)	2 (0.3%)	1.000
Positive Alcohol Use	112 (6.3%)	97 (16.0%)	<b>&lt;0.001*</b>
In-Hospital Mortality	91 (5.1%)	37 (6.1%)	0.349
Hospital LOS (Mean)	6.0	6.5	0.163
Hospital LOS (Median)	4.0	5.0	0.08
ICU Admission	603 (34.0%)	184 (30.4%)	0.109
ICU LOS (Median)	2.0 [2.0-4.0]	2.0 [2.0-4.0]	0.15
Ventilated	151 (8.5%)	59 (9.8%)	0.362
Vent Days (Median)	2.0 [1.0-6.0]	3.0 [2.0-7.5]	<b>0.038*</b>



## Conclusion:

Geriatric trauma volumes increased minimally during the pandemic. Patient characteristics were similar with the exception of longer pandemic mechanical ventilation days. Pandemic rates of positive alcohol during trauma evaluation increased by almost 10% compared to pre-pandemic levels. This suggests the need for targeted alcohol assessment and interventions in the geriatric population during pandemics and other periods of social isolation.

1. Kehoe A, Smith JE, Edwards A, Yates D, Lecky F. The changing face of major trauma in the UK. *Emerg Med J.* 2015;32(12):911-915. doi:10.1136/emermed-2015-205265
2. Yasin YJ, Grivna M, Abu-Zidan FM. Global impact of COVID-19 pandemic on road traffic collisions. *World J Emerg Surg.* 2021;16(1):51. Published 2021 Sep 28. doi:10.1186/s13017-021-00395-8



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