

The Impact of COVID-19 on Geriatric Traumatic Injury: A Quantitative Approach

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Introduction: As of November 30th, 2020, there have been over 63 million cases of COVID-19 resulting in over 1.4 million deaths. However this death rate is not equal throughout the population. Eight of ten deaths due to COVID-19 in the United States are in patient who are 65 or older. This group is also prone to suffer an increased level of mortality from traumatic injury, and prompt treatment can impact their survival. With exposure to COVID-19 serving as a potential deterrent to geriatric patients seeking medical attention, these patients may present to the hospital less frequently and at a higher acuity when compared to time periods before COVID-19.

Objectives: The objective of our study where to study the change in a multitude of variables associated with traumatic injury presentation before and after the COVID-19 pandemic in the geriatric population. By identifying key criteria where there were changes or seeing no change where we might have expected changes, we hoped to further elucidate the effects of the pandemic on a particularly at-risk population.

Methods: We conducted a retrospective analysis of data from a level one trauma center. Our inclusion criteria for the pre-COVID time frame were patients who were 65 or older upon initial presentation in the time period between March 1st and June 15th between 2015 and 2019. Our inclusion criteria for the COVID-19 time frame were patients who were 65 or older upon initial presentation in the time period between March 1st and June 15th in the year 2020. We assessed the differences before and after the pandemic of Glasgow Coma Scale (GCS), injury severity score (ISS), the number of ICU days, and the hospital length of stay via Mann Whitney U test as they were continuous non-parametric variables. The frequency of geriatric trauma cases, the frequency of ground level falls (GLF), the frequency of CT head scans, the frequency of CT neck scans, the frequency of total MRI scans, and the frequency of head, neck, and spinal canal MRI scans were compared via a Chi-squared tests as they are categorical variables. Due to a low number of cases in the COVID-19 period who were intubated, the difference in the distributions of intubation were compared using the Fisher's Exact test.

Results: There were a total of 594 geriatric traumas out of 3030 total traumas before the pandemic and 135 geriatric traumas out of 434 total after the pandemic. We saw a significant increase in the proportion of geriatric patients who presented to the hospital during the pandemic time when compared to the time period prior to the pandemic. We also observed an increase in CT neck scans but a decrease in CT head scans and overall MRI scans. We saw no difference in the number of ICU days or the overall hospital length of stay for patients before and after the pandemic as well as no difference in GCS, ISS, frequency of GLF, frequency of intubation, and frequency of MRI head, neck, and spinal column.