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Toxicological Exposures in COVID-19 Patients

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On behalf of the Toxicology Investigators Consortium (ToxIC)

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Background

The COVID-19 pandemic has been associated with mental health and substance use disorder challenges related to effects of the disease, but also to the mitigation attempts, including but not limited to: isolation due to social distancing, loss of jobs and financial stresses, and decreases in social support structures. The Centers for Disease Control reported in a morbidity and mortality weekly report that symptoms of anxiety and depression increased significantly during the pandemic compared with the prior year. Adverse effects include worsening mental health symptoms, increase in substance use as a coping mechanism and suicidality. We aimed to evaluate patients presenting with a toxic exposure who were also found to have COVID-19 infection.

Methods

The ToxIC Core Registry is a multicenter database of patients cared for at the bedside or via telehealth by medical toxicologists. A new set of COVID-19 specific questions were incorporated into the REDCap database on August 1, 2020. The ToxIC registry was queried from 8/2020–12/2020 for all cases, including those with reported COVID-19 positive, negative, and unknown testing during their encounter. COVID-19 positive cases were compared to COVID-19 negative and unknown cases. Descriptive analysis was performed for variables including age, sex, and reason for exposure.

Results

From 3,119 toxicological exposure cases submitted after the implementation of new COVID-19 specific questions, 51 cases (1.6%) were positive for COVID-19, 1,397 (44.8%) were negative, and 1,671 (53.6%) had unknown status of COVID-19 during that encounter. Of the 51 COVID-19 positive cases, males accounted for 55% (N=28) and females accounted for 45% (N=23). Comparing COVID-19 positive cases (N=51) and COVID-19 negative cases (N=1,397), the most common reason for encounter for each group was intentional pharmaceutical exposure (56% and 51% respectively). However, intentional pharmaceutical exposures reported as attempt at self-harm was 61.5% for COVID-19 positive and 76.1% for COVID-19 negative patients. In the group of 51 patients presenting with an exposure who were COVID-19 positive, 5 (9.8%) exposures were related to COVID-19 treatment or prophylaxis.

Conclusion

During the last 5 months of 2020, fewer than 2% of cases entered into the ToxIC Registry were COVID-19 positive. COVID-19 negative patients were more likely to have intentional pharmaceutical exposures as an attempt at self-harm than COVID-19 positive patients.

TOXICOLOGICAL EXPOSURE CASES

