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280 Emergency Department Predictors of Mortality for Adult Patients With Severe Coronavirus Disease-19 (COVID-19) in a Tertiary Hospital: A Retrospective Cohort Study

Aristotle Lingad Jr, Mesa-Gaerlan FJ/St. Luke’s Medical Center-Quezon City, Quezon City, Metro Manila, National Capital Region, PH

Introduction: The data regarding the predictors of mortality in Coronavirus disease-19 (COVID-19) patients remains limited since the disease entity is very novel. Determining the factors affecting the mortality of these patients are needed in the development of guidelines and other significant health policies concerning triaging and patient management. This study aims to determine the variables affecting the mortality of severe and critical COVID-19 patients based on their initial presentation and work-up in the emergency department (ED).

Methods: A single-center, retrospective cohort study involving adult patients diagnosed with COVID-19 with severe or critical features was done. A descriptive study was performed from data collected, and a univariate and multivariate study was performed to determine significant variables predictive of mortality.

Results: A total of 3,706 adult COVID-19 confirmed patients were seen in the ED from March to December 2020. The median age was 65.81 (20-94), and 178 (55.11%) were male. A total of 130 (40.25%) patients died on or before the 28th day of admission. According to multivariate regression analysis results, patients with multiple comorbidities (≥ 4) (OR 3.68, 95% CI 1.60 to 8.43, p = 0.002), patients who presented with generalized body weakness (OR 3.01, 95% CI 1.45 to 6.24, p = 0.003), and tachycardia (OR 2.60, 95% CI 1.35 to 5.02, p = 0.004); an increase in level of partial pressure of carbon dioxide in arterial blood (PaCO2) (OR 1.04, 95% CI 1.01 to 1.08, p = 0.01), and patients with elevated lactate levels (OR 1.65, 95% CI 1.24 to 2.19, p = 0.001) were found to significantly increase the mortality, while patients with increased lymphocyte count (OR 0.94, 95% CI 0.90 to 0.98, p = 0.009); patients with higher partial pressure of oxygen in the arterial blood (PaO2) levels (OR 0.99, 95% CI 0.98 to 1.00, p = 0.02); and patients maintained on high-flow nasal cannula (HFNC) (OR 0.17, 95% CI 0.07 to 0.45, p = 0.00) or nasal cannula (OR 0.19, 95% CI 0.09 to 0.422, p = 0.00) during the first 24 hours of ED stay will decrease mortality.

Conclusion: Patients with multiple comorbidities, those who present with generalized body weakness and tachycardia, an increasing PaCO2 level, and elevated lactate levels are associated with an increased risk of mortality in patients with severe or critical COVID-19.

Keywords: Mortality; SARS-CoV-2 infection; 2019 novel coronavirus disease; COVID-19 pandemic

No, authors do not have interests to disclose

281 Out-of-Hospital TXA Administration Opportunities in Trauma Patients Transported by ALS Ground EMS - A Descriptive Study

Wood J, Meng X, Meyers L, Blekney C, Szatnjikrey M/Mayo Clinic, Rochester, Minnesota, US

Introduction: As many as 30% of severely injured trauma patients demonstrate evidence of acute coagulopathy of trauma (ACOT) at the time of ED admission. Early administration of tranexamic acid (TXA) may improve patient outcomes with ACOT. Within our system, TXA is currently available only to helicopter EMS (HEMS) units. The purpose of the current study was to determine whether there was a cohort of trauma patients transported by ground EMS (GEMS) who might benefit from out-of-hospital TXA administration.

Methods: Retrospective chart review of trauma patients transported by Mayo Clinic Ambulance Service (MCAS) to the Mayo Clinic Hospital (MCH), Rochester, Minnesota, between January 1, 2011, and December 31, 2019. Inclusion criteria for the final cohort included: GEMS transport, hypotension (SBP < 90 mm Hg) and shock index > 1. Where available, thromboelastogram (TEG) were reviewed for evidence of hyperfibrinolysis.

Results: A total of 10,974 trauma patients were transported during the study period, of which 122 were included in the final study. Eleven (9.2%) were penetrating trauma. 8 patients were anticoagulated (warfarin 6, NOAC 2). Mortality was 15/122 (12.3%). No patient received TXA in the emergency department; 28 received blood products during their resuscitation. Fifty three patients had TEG results; 16 had an LY30 > 3% (27.12%). When comparing patients with LY30 > 3% vs. < 3%, no difference was noted in the lowest SBP (p = .16), mechanism of the injury (p = .46), thoracodorsal trauma (p = .195), ED blood transfusion (p = .46), blood transfusion at any time (p = .91), or mortality (p = 1.0). One patient received TXA in the ICU; that patient had a Ly30 < 3%.

Conclusion: The current data suggest that in our EMS system, routine GEMS TXA availability would appear to be infrequently utilized and not anticipated to alter trauma outcomes significantly. Further study is needed to determine potential benefits in other EMS systems, particularly those with higher proportions of penetrating trauma, non-compressible truncal hemorrhage, or lack of HEMS TXA availability.

Criteria for limited ground availability, such as in supervisor response vehicles, should also be evaluated.

No, authors do not have interests to disclose

282 Buprenorphine-Precipitated Opioid Withdrawal in the Emergency Department: A Case Series

Spadaro A, Faude S, Lowenstein M, Thakrar A, Deligado M, Perrone J, Kilaur A/Perelman School of Medicine at the University of Pennsylvania, Philadelphia, Pennsylvania, US

Study Objectives: Buprenorphine is a highly effective medication for the treatment of opioid use disorder (OUD), and recent guidelines from the American College of Emergency Physicians recommend initiation of buprenorphine treatment in the emergency department (ED). A rare, but feared, adverse outcome from administering buprenorphine is precipitated opioid withdrawal (BPOW). Little is known about risk factors, clinical course, and optimal management of BPOW. In this study, we examined cases of patients who developed complications following induction of buprenorphine in the ED, to determine if they met criteria for BPOW as well as describe their clinical course over time, including medications used to manage symptoms.

Study Methods: This study is a case series utilizing structured retrospective chart review in a convenience sample of patients from a large, urban academic health system. We included cases that were reported to toxicology and addiction medicine experts at the health system as potentially being BPOW. A chart abstraction tool was developed to extract relevant clinical information. Cases were reviewed to determine if they met a pre-specified definition of POW (Clinical Opioid Withdrawal Scale (COWS) > 6 in 3 hours), and we describe patient characteristics as well as the clinical course following the event.

Results: Thirteen cases were reviewed. Nine of the cases met a pre-specified case definition of BPOW. In four cases, patients were administered buprenorphine without adherence to protocol and given buprenorphine with COWS score < 6. Four patients experienced protracted opioid withdrawal without clear increase in COWS. All of the cases involved patients who used fentanyl either by self-report or on urine drug testing. The average period of self-reported abstinence from illicit opioids prior to induction was 17 hours. Patients manifested BPOW with gastrointestinal, neuro-cognitive, and autonomic dysfunction symptoms. Patients were managed with additional higher doses of buprenorphine and adjunctive medications such as clonidine, lorazepam, and ondansetron. The median dose of additional buprenorphine given was 16mg. The median length of time to resolution of symptoms was 7 hours.

Conclusions: BPOW is a severe worsening of withdrawal symptoms after the initiation of buprenorphine. In this convenience sample of patients with BPOW, fentanyl use and abstinence periods appropriate for short acting opioids were associated. Symptoms of nausea, vomiting, agitation, and diaphoresis led clinicians to order adjunctive medications. Although multiple protocols exist to support buprenorphine initiation, there is an absence of guidelines to support the management of BPOW or prolonged withdrawal symptoms. In this series, most of the patients had improvements with additional doses of buprenorphine.

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283 Trauma Team Activation Fees Vary Widely Based on Region and Hospital Type

Zitek T, Pagano K, Singh Y, Mechanic O, Farcy D/Mount Sinai Medical Center, Miami Beach, Florida, US

Background: Trauma centers must be readily equipped to handle a variety of life-threatening injuries. As such, they charge a fee for the activation of their trauma team. Some popular media articles have pointed out that some trauma centers charge very high fees for trauma team activation, but a formal analysis of trauma activation fees has

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