Global Research Highlights

Editor's note: CJEM has partnered with a small group of selected journals of international emergency medicine societies to share from each a highlighted research study, as selected monthly by their editors. Our goals are to increase awareness of our readership to research developments in the international emergency medicine literature, promote collaboration among the selected international emergency medicine journals, and support the improvement of emergency medicine world-wide, as described in the WAME statement at http://www.wame.org/about/policy-statements#Promoting%20Global%20Health. Abstracts are reproduced as published in the respective participating journals and are not peer reviewed or edited by CJEM.

Annals of Emergency Medicine

https://www.acep.org/annals/

Official journal of the American College of Emergency Physicians
(The print version of this article has been scheduled for January 2023)

Characteristics and Outcomes of 360 Consecutive COVID-19 Patients Discharged from the Emergency Department with Supplemental Oxygen

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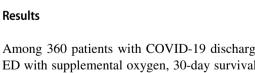
Study objective

To describe characteristics and outcomes of coronavirus disease (COVID-19) patients with new supplemental oxygen requirements discharged from a large public urban emergency department (ED) with supplemental oxygen.

Methods

This observational case series describes the characteristics and outcomes of 360 consecutive COVID-19 patients with new supplemental oxygen requirements discharged from a large urban public ED between April 2020 and March 2021 with supplemental oxygen. Primary outcomes included 30-day survival and 30-day survival without unscheduled inpatient admission. Demographic and clinical data were collected through a structured chart review.

Results

Among 360 patients with COVID-19 discharged from the ED with supplemental oxygen, 30-day survival was 97.5% (95% confidence interval (CI) 95.3–98.9%; n = 351), and 30-day survival without unscheduled admission was 81.1% (95% CI 76.7–85.0%; n = 292). A sensitivity analysis incorporating worst-case-scenario for 12 patients without complete follow-up 30 days after index visit yields 30-day survival of 95.5% (95% CI 92.5–97.2%; n = 343), and 30-day survival without unscheduled admission of 78.9% (95% CI 74.3–83.0%; n = 284). Among study patients,

32.2% (n = 116) had a nadir ED oxygen saturation of < 90%, among these 30-day survival was 97.4% (95% CI 92.6–99.4%; n = 113), and 30-day survival without unscheduled admission was 76.7% (95% CI 68.8–84.1%; n = 89).

Conclusion

COVID-19 patients with new supplemental oxygen requirements discharged from the ED had survival comparable to COVID-19 ED patients with mild exertional hypoxia treated with supplemental oxygen in other settings, and this held true when the analysis was restricted to patients with nadir ED index visit oxygen saturations < 90%. Discharge of select COVID-19 patients with supplemental oxygen from the ED may provide a viable alternative to hospitalization, particularly when inpatient capacity is limited.

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African Journal of Emergency Medicine

Prevalence and correlates of depression and substance use disorders in emergency department populations: A cross-sectional study at East Africa's largest public hospital

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Introduction

There are persistent gaps in screening, identification, and access to care for common mental disorders in Low- and Middle-Income Countries. An initial step towards reducing this gap is identifying the prevalence, co-morbidities, and context of these disorders in different clinical settings and exploring opportunities for intervention. This study evaluates the prevalence and correlates of depression and substance use disorders among adults presenting to the Emergency Department (ED) of a major national hospital in East Africa.

Methods

This study utilized the World Health Organization's STEPwise Approach to Surveillance (WHO-STEPS) tool and the Patient Health Questionnaire (PHQ-9) to conduct a cross-sectional survey capturing socio-demographic data, tobacco, and alcohol use and rates of depression in a sample of adults presenting to the ED. Bivariate and multivariate analyses were conducted for each outcome of interest and socio-demographics.

Results

Of 734 respondents, 298 (40.6%) had a PHQ-9 score in the "moderate" to "severe" range indicative of major depressive disorder. About 17% of respondents endorsed current tobacco use while about 30% reported being daily alcohol users. Those with high PHQ-9 score had higher odds of reporting current tobacco use ("severe range" = adjusted odds ratio (aOR) 1.85, 95% CI 1.05,

3.26). Those with a "severe" PHQ-9 scores were 9 times (aOR 2.3-35.3) more likely to be daily drinkers.

Conclusions

Screening and identification of people with depression and substance use disorders in the ED of a large national hospital in Kenya is feasible. This offers an opportunity for brief intervention and referral to further treatment.

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Emergency Medicine Journal

Use of the National Early Warning Score for predicting deterioration of patients with acute pulmonary embolism: a post-hoc analysis of the YEARS Study

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Background

The Pulmonary Embolism Severity Index (PESI) and the simplified PESI (sPESI) are validated scores for mortality prediction in patients with pulmonary embolism (PE). National Early Warning Score (NEWS) is a general prognostic risk score for multiple clinical settings. We investigated whether the NEWS had a comparable performance with the PESI and sPESI, for predicting intensive care unit (ICU) admission and death in patients with acute PE.

Methods

In haemodynamically stable patients with confirmed PE from the YEARS Study (2013–2015), we evaluated the performance of the NEWS, PESI and sPESI for predicting 7-day ICU admission and 30-day mortality. Receiver operating characteristic curves were plotted and the area under the curve (AUC) was calculated.

Results

Of 352 patients, 12 (3.4%) were admitted to the ICU and 5 (1.4%) died. The AUC of the NEWS for ICU admission was 0.80 (95% CI 0.66 to 0.94) and 0.92 (95% CI 0.82 to 1.00) for 30-day mortality. At a threshold of 3 points, NEWS yielded a sensitivity and specificity of 92% and 53% for ICU admission and 100% and 52% for 30-day mortality. The AUC of the PESI was 0.64 (95% CI 0.48 to 0.79) for ICU admission and 0.94 (95% CI 0.87 to 1.00) for mortality. At a threshold of 66 points, PESI yielded a sensitivity of 75% and a specificity of 38% for ICU admission. For mortality, these were 100% and 37%, respectively. The performance of the sPESI was similar to that of PESI.

Conclusion

In comparison with PESI and sPESI, NEWS adequately predicted 7-day ICU admission as well as 30-day mortality, supporting its potential relevance for clinical practice.

Emergencias

https://www.emergencias.portalsemes.org/English

Official Journal of the Spanish Society of Emergency Medicine

Quality of hospital emergency department care for patients with COVID-19 during the first wave in 2020: the CALUR-COVID-19 study

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Objectives

To define quality of care indicators and care process standards for treating patients with COVID-19 in hospital emergency departments (EDs), to determine the level of adherence to standards during the first wave in 2020, and to detect factors associated with different levels of adherence.

Methods

We selected care indicators and standards by applying the Delphi method. We then analyzed the level of adherence in the SIESTA cohort (registered by the Spanish Investigators in Emergency Situations Team). This cohort was comprised of patients with COVID-19 treated in 62 Spanish hospitals in March and April 2020. Adherence was compared according to pandemic-related ED caseload pressure, time periods during the wave (earlier and later), and age groups.

Results

Fourteen quality indicators were identified. Three were adhered to in less than 50% of the patients. Polymerase chain reaction testing for SARS-CoV-2 infection was the indicator most often disregarded, in 29% of patients when the caseload was high vs 40% at other times (P < 0.001) and in 30% of patients in the later period vs 37% in the earlier period (P = 0.04). Adherence to the following indicators was better in the later part of the wave: monitoring of oxygen saturation (100% vs 99%, P = 0.035), electrocardiogram monitoring in patients treated with hydroxychloroquine (87% vs 65%, P < 0.001), and avoiding of lopinavir/ritonavir treatment in patients with diarrea (79% vs 53%, P < 0.001). No differences related to age groups were found.

Conclusions

Adherence to certain quality indicators deteriorated during ED treatment of patients with COVID-19 during the first wave of the pandemic. Pressure from high caseloads may have exacerbated this deterioration. A learning effect led to improvement. No differences related to patient age were detected.

Hong Kong Journal of Emergency Medicine

Comparison of the HEART and HEARTS3 scores to predict major adverse cardiac events in chest pain patients at the emergency department

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Introduction

The aim of this study was to determine the risk assessment of acute coronary syndrome and prediction of major adverse cardiac events by HEART (History, ECG, Age, Risk factors, Troponin) and HEARTS3 (HEART + 3S = Sex, Serial 2-h ECG, and Serial 2-h delta Troponin) scoring systems in patients admitted to the emergency department with chest pain.

Methods

This is a single-center prospective cohort study. This study was conducted in patients admitted to the emergency department with chest pain, without ST-elevation myocardial infarction, who were 18 years or older, and agreed to participate in the study. The primary endpoint is the occurrence of major adverse cardiovascular events within 30 days. The receiver operating characteristic curve was used to assess the power of HEART and HEARTS3 scores to predict major adverse cardiovascular events.

Results

The mean age of 239 patients was 47.91 ± 13.93 years and 72.4% (173) were male. Major adverse cardiovascular events developed in 20.1% (48) of the patients. The mean HEART and HEARTS3 scores of the patients with major adverse cardiovascular events (5.67 ± 1.46 and 9.38 ± 3.91, respectively) were both statistically and significantly higher than the scores of the patients without major adverse cardiovascular events (2.33 ± 1.44 and 2.22 ± 1.39; $p = 0.001$). The area under the curve values of HEART and HEARTS3 scores were found to be 0.943 (95% confidence interval: 0.905–0.968) and 0.990 (0.968–0.999), respectively.

Conclusion

In our study, the power of HEARTS3 score to predict major adverse cardiovascular events was better in the risk assessment of acute coronary syndrome in patients admitted to the emergency department with chest pain compared to the HEART score. We think that patients with a low HEARTS3 score can be safely discharged from emergency department without further cardiac examination.

Keywords Emergency department · HEART score · HEARTS3 score · major adverse cardiovascular events risk