Global Research Highlights

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Annals of Emergency Medicine

www.acep.org/annals/
Official journal of the American College of Emergency Physicians
(The print version of this article has been scheduled for January 2022)

Bloodless Management of the Anemic Patient in the Emergency Department

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https://doi.org/10.1016/j.annemergmed.2021.06.015

Anemia is a commonly encountered condition in emergency medicine; transfusion of packed red blood cells is commonly performed for anemic patients in the emergency department (ED), but some patients are unable to accept transfusion of blood products due to medical or religious concerns. The unique, acute, and time-sensitive nature of emergency medicine practice requires that physicians maintain an enhanced awareness of bloodless medicine treatment modalities. Identification of bloodless medicine patient preferences in the ED can help guide physicians in the recommendation of acceptable methods of treating anemia in this patient population. A focus on early hemostasis and resuscitation, instead of attempts to convince the patient to accept blood transfusion, can be lifesaving in patients with acute bleeding. Treatment strategies including the use of methods to reduce unnecessary blood loss, enhance red blood cell production, and increase the oxygen-carrying capacity of blood should also be considered early in patient presentation. Timely involvement of the Hospital Liaison Committee can help facilitate successful interpersonal communication and shared decisionmaking between emergency physicians and bloodless medicine patients. By embracing an understanding of bloodless medicine patient needs as well as available treatment strategies, emergency physicians can contribute to optimal overall outcomes for anemic bloodless medicine patients.
Areas of delay related to prolonged length of stay in an emergency department of an academic hospital in South Africa

Mashao K, Heyns T, White Z
Afr J Emerg Med. 2021; 11(2):237–41
https://doi.org/10.1016/j.afjem.2021.02.002

Introduction

Globally, length of stay of patients in emergency departments remains a challenge. Remaining in the emergency department for > 12 h increases health care costs, morbidity and mortality rates and leads to crowding and lower patient satisfaction.

The aim of this research was to describe the areas of delay related to prolonged length of stay in the emergency department of an academic hospital.

Methods

A quantitative retrospective study was done. The Input-Throughput-Output model was used to identify the areas of patients’ journey through the emergency department. The possible areas of delay where then described. Using systematic sampling, a total of 100 patient files managed in an emergency department of an academic hospital in South Africa were audited over a period of 3 months. Descriptive statistics and regression analysis was used to analyse data.

Results

The mean length of stay of patients in the emergency department was 73 h 49 min. The length of stay per phase was: input (3 h 17 min), throughput (16 h 25 min) and output (54 h 7 min). A strong significant relationship found between the length of stay and the time taken between disposition decision (throughput phase) disposition decision to admission or discharge of patients from the ED (output phase) (p < 0.05).

Conclusion

The output phase was identified as the longest area of delay in this study, with the time taken between disposition decision to admission or discharge of patients from the ED (patients waiting for inpatient beds) as the main significant area of delay.

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Early warning scores to assess the probability of critical illness in patients with COVID-19

Lars Veldhuis, Milan L Ridderikhof, Michiel Schinkel, Joop van den Bergh, Martijn Beudel, Tom Dormans, Renee Douma, Niels Gritters van den Oever, Lianne de Haan, Karen Koopman, Martijn D de Kruif, Peter Noordzij, Auke Reidinga, Wouter de Ruijter, Suat Simsek, Caroline Wyers, Prabath WB Nanayakkara, Markus Hollmann

http://doi.org/10.1136/emermed-2020-211054

Objective

Validated clinical risk scores are needed to identify patients with COVID-19 at risk of severe disease and to guide triage decision-making during the COVID-19 pandemic. The objective of the current study was to evaluate the performance of early warning scores (EWS) in the ED when identifying patients with COVID-19 who will require intensive care unit (ICU) admission for high-flow-oxygen usage or mechanical ventilation.

Methods

Patients with a proven SARS-CoV-2 infection with complete resuscitate orders treated in nine hospitals between 27 February and 30 July 2020 needing hospital admission were included. Primary outcome was the performance of EWS in identifying patients needing ICU admission within 24 h after ED presentation.

Results

In total, 1501 patients were included. Median age was 71 (range 19–99) years and 60.3% were male. Of all patients, 86.9% were admitted to the general ward and 13.1% to the ICU within 24 h after ED admission. ICU patients had lower peripheral oxygen saturation (86.7% vs 93.7, p ≤ 0.001) and had a higher body mass index (29.2 vs 27.9 p = 0.043) compared with non-ICU patients. National Early Warning Score 2 (NEWS2) ≥ 6 and q-COVID Score were superior to all other studied clinical risk scores in predicting ICU admission with a fair area under the receiver operating characteristics curve of 0.740 (95% CI 0.696–0.783) and 0.760 (95% CI 0.712–0.800), respectively. NEWS2 ≥ 6 and q-COVID Score ≥ 3 discriminated patients admitted to the ICU with a sensitivity of 78.1% and 75.9%, and specificity of 56.3% and 61.8%, respectively.

Conclusion

In this multicentre study, the best performing models to predict ICU admittance were the NEWS2 and the Quick COVID-19 Severity Index Score, with fair diagnostic performance. However, due to the moderate performance, these models cannot be clinically used to adequately predict the need for ICU admission within 24 h in patients with SARS-CoV-2 infection presenting at the ED.
Mortality in patients treated for COVID-19 in the emergency department of a tertiary care hospital during the first phase of the pandemic: Derivation of a risk model for emergency departments.

García-Martínez A, López-Barbeito B, Coll-Vinent B, Placer A, Font C, Vargas CR, Sánchez C, Piñango D, Gómez Angelats E, Gómez-Angelats E, Curtelin D, Salgado E, Aya F, Martínez-Nadal G, Alonso JR, García-Gozalbes J, Fresco L, Galicia M, Perea M, Carbó M, Iniesta N, Escoda O, Perelló R, Cuerpo S, Flores V, Alemany X, Miró O, Ortega Romero M

Objective

To develop a risk model to predict 30-day mortality after emergency department treatment for COVID-19.

Methods

Observational retrospective cohort study including 2511 patients with COVID-19 who came to our emergency department between March 1 and April 30, 2020. We analyzed variables with Kaplan Meier survival and Cox regression analyses.

Results

All-cause mortality was 8% at 30 days. Independent variables associated with higher risk of mortality were age over 50 years, a Barthel index score less than 90, altered mental status, the ratio of arterial oxygen saturation to the fraction of inspired oxygen (SaO2/FIO2), abnormal lung sounds, platelet concentration less than 100,000/mm³, a C-reactive protein concentration of 5 mg/dL or higher, and a glomerular filtration rate less than 45 mL/min. Each independent predictor was assigned 1 point in the score except age, which was assigned 2 points. Risk was distributed in 3 levels: low risk (score of 4 points or less), intermediate risk (5–6 points), and high risk (7 points or above). Thirty-day risk of mortality was 1.7% for patients who scored in the low-risk category, 28.2% for patients with an intermediate risk score, and 67.3% for those with a high risk score.

Conclusion

This mortality risk stratification tool for patients with COVID-19 could be useful for managing the course of disease and assigning health care resources in the emergency department.
Background

Differences between pre-hospital triage by an emergency medical technician and Simple Triage and Rapid Treatment triage (START) by emergency staffs often affect manpower management and aggravate the chaos condition of emergency room.

Objectives

Under the assistance of instant messaging, the authors aimed to identify ways of improving triage differences between emergency medical technician triage grading and Simple Triage and Rapid Treatment triage grading by emergency staffs.

Methods

Recorded photographs of all patients were reviewed by a smartphone. We categorized patients according to three triage conditions: group 1, accident scene on-site or instantaneous Simple Triage and Rapid Treatment triage by the emergency medical technician; group 2, triage under Simple Triage and Rapid Treatment grading by emergency staffs; group 3, re-triage with START grading using recorded photographs, Glasgow Coma Scale, and vital signs when these patients were arrived in emergency room. The Wilcoxon Signed-Rank test, Spearman rank correlations, and Kruskal–Wallis test are employed to test differences among the groups. We used risk estimates with odds ratios and the chi-square test to statistically analyze the differences in triage grading.

Results

Statistical analysis found conflicting results among Wilcoxon Signed-Rank test, Spearman rank correlations, and Kruskal–Wallis test. The difference in triage grading between groups 2 and 1 was greater than that between groups 2 and 3 (odds ratio 6.473; 95% confidence interval 1.693–24.470; p-value < 0.05).

Conclusion

Transferred photographs combined with Glasgow Coma Scale and vital signs can help us to understand the real situations of patients. With instant messaging applications, it is possible to make more precise pre-hospital or instantaneous triage.