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 Abstracts are reproduced as published in the respective participating journals and are not peer reviewed or edited by CJEM.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

www.acep.org/annals/

Official journal of the American College of Emergency Physicians
(The print version of this article has been scheduled for July 2018)

Safety of a Brief Emergency Department Observation Protocol for Patients With Presumed Fentanyl Overdose

Frank Scheuermeyer, Christopher DeWitt, Jim Christenson MD, Brian Grunau, Andrew Kestler, Eric Grafstein, Jane Buxton, David Barbic, Stefan Milanovic, Reza Torkjari, Indy Sahota, Grant Innes

Study objective: Fentanyl overdoses are increasing and few data guide emergency department (ED) management. We Q2 evaluate the safety of an ED protocol for patients with presumed fentanyl overdose.

Methods: At an urban ED, we used administrative data and explicit chart review to identify and describe consecutive patients with uncomplicated presumed fentanyl overdose (no concurrent acute medical issues) from September to December 2016. We linked regional ED and provincial vital statistics databases to ascertain admissions, revisits, and mortality. Primary outcome was a composite of admission and death within 24 hours. Other outcomes included treatment with additional ED naloxone, development of a new medical issue while in the ED, and length of stay. A prespecified subgroup analysis assessed low-risk patients with normal triage vital signs.

Results: There were 1,009 uncomplicated presumed fentanyl overdose, mainly by injection. Median age was 34 years, 85% were men, and 82% received out-of-hospital naloxone. One patient was hospitalized and one discharged patient died within 24 hours (combined outcome 0.2%; 95% confidence interval [CI] 0.04% to 0.8%). Sixteen patients received additional ED naloxone (1.6%; 95% CI 1.0% to 2.6%), none developed a new medical issue (0%; 95% CI 0% to 0.5%), and median length of stay was 173 minutes (interquartile range 101 to 267). For 752 low-risk patients, no patients were admitted or developed a new issue, and one died postdischarge; 3 (0.4%; 95% CI 0.01% to 1.3%) received ED naloxone.

Conclusion: In our cohort of ED patients with uncomplicated presumed fentanyl overdose—typically after injection—deterioration, admission, mortality, and postdischarge complications appear low; the majority can be discharged after brief observation. Patients with normal triage vital signs are unlikely to require ED naloxone. Corresponding Author. A Department of Emergency Medicine, Brown University, Providence, RI

How to cite this article:
Scheuermeyer, F, DeWitt, C, Christenson, J, et al. Safety of a Brief Emergency Department Observation Protocol for Patients With Presumed Fentanyl Overdose. 2018. DOI: https://doi.org/10.1016/j.annemergmed.2018.01.054.

African journal of emergency medicine

http://afjem.com

The official journal of the African Federation for Emergency Medicine, the Emergency Medicine Association of Tanzania, the Emergency Medicine Society of South Africa, the Egyptian Society of Emergency Medicine, the Libyan Emergency Medicine Association, the Ethiopian Society of Emergency Medicine Professionals, the Sudanese Emergency Medicine Society, the Society of Emergency Medicine Practitioners of Nigeria and the Rwanda Emergency Care Association

Views of emergency care providers about factors that extend on-scene time intervals

Vincent-Lambert C, Mottershaw T.
Afr J Emerg Med 2018;8(1):1-5.
https://doi.org/10.1016/j.afjem.2017.08.003

Introduction: Rapid response, patient care and transportation remain recognised goals of the Emergency Medical Services (EMS). Spending more time on-scene may delay the initiation of definitive care interventions. This study focused on describing the perceptions of a sample of emergency care providers regarding the impact of environmental, clinical and systemic factors with respect to their on-scene time intervals.

Method: The study was descriptive and prospective in nature making use of a self-designed questionnaire. Basic descriptive methods were used during the analysis of the participants' responses to 16 close-ended questions. A further review of the limited narrative elicited by two open-ended questions allowed for the reporting of additional views and opinions.

Results: Thirty-three (92%) participants agreed that extended time on-scene may negatively affect patient outcome. Twenty-three (64%) agreed that spending longer than 20 min on-scene may be considered excessive for medical emergencies and 28 (77%) felt the same for trauma cases. Respondents felt that many of the environmental, clinical and systemic factors mentioned in the questionnaire do have the potential to extend on-scene time intervals. The factors that were seen to have the greatest effect included waiting for fire, rescue and police services, patient acuity, the use of an air ambulance, patient extrication and multi-casualty incidents.

Discussion: There are a number of environmental, clinical and systemic factors that emergency care providers indicate have the potential to extend on-scene time intervals. Acknowledging and attempting to address these factors is important for EMS as limiting the time spent on-scene is not only clinically desirable but may also lead to improved efficiency and availability of resources.

Emergency Medicine Journal

http://emj.bmj.com

Official Journal of the Royal College of Emergency Medicine

Essential medicines for emergency care in Africa

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Published Online First: 07 April 2018. doi: 10.1136/emermed-2017-207396

Objectives: Essential medicines lists (EMLs) are efficient means to ensure access to safe and effective medications. The WHO has led this initiative, generating a biannual EML since 1977. Nearly all countries have implemented national EMLs based on the WHO EML. Although EMLs have given careful consideration to many public health priorities, they have yet to comprehensively address the importance of medicines for treating acute illness and injury.

Methods: We undertook a multistep consensus process to establish an EML for emergency care in Africa. After a review of existing literature and international EMLs, we generated a candidate list for emergency care. This list was reviewed by expert clinicians who ranked the medicines for overall inclusion and strength of recommendation. These medications and recommendations were then evaluated by an expert group. Medications that reached consensus in both the online survey and expert review were included in a draft emergency care EML, which underwent a final inperson consensus process.

Results: The final emergency care EML included 213 medicines, 25 of which are not in the 2017 WHO EML, but were

deemed essential for clinical practice by regional emergency providers. The final EML has associated recommendations of desirable or essential and is subdivided by facility level. Thirty-nine medicines were recommended for basic facilities, an additional 96 for intermediate facilities (eg, district hospitals) and an additional 78 for advanced facilities (eg, tertiary centres).

Conclusion: The 25 novel medications not currently on the WHO EML should be considered by planners when making rational formularies for developing emergency care systems. It is our hope that these resource-stratified lists will allow for easier implementation and will be a useful tool for practical expansion of emergency care delivery in Africa.

Emergencias

http://emergencias.portalsemes.org/English

Official Journal of the Spanish Society of Emergency Medicine

External validity of a prognostic score for acute heart failure based on the Epidemiology of Acute Heart Failure in Emergency Departments registry: the EAHFE-3D scale

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http://emergencias.portalsemes.org/descargar/validacin-externa-de-la-escala-eahfe3d-para-la-evaluacin-del-pronstico-en-insuficiencia-cardiaca-aguda/

Cited: García-Gutiérrez S, Quintana López JM, Antón-Ladislao A, Gallardo Rebollal MS, Rilo Miranda I, Morillas Bueno M, et al. External validity of a prognostic score for acute heart failure based on the Epidemiology of Acute Heart Failure in Emergency Departments registry: the EAHFE-3D scale. Emergencias. 2018;30:84-90.

Objective: To validate the EAHFE-3D scale, based on the Acute Heart Failure in Emergency Departments registry, in a cohort of patients attended for acute heart failure.

Methods: Study of a multipurpose cohort of patients with acute heart failure in 3 hospitals in the Basque Country between 2011 and 2013. We extracted age, baseline New York Heart Association functional class, systolic blood pressure, baseline arterial oxygen saturation, sodium level in blood, and emergency department treatments (noninvasive mechanical ventilation, use of inotropic agents and vasopressors) in order to calculate each patient's EAHFE-3D score. The main outcome variable was mortality within 3 days of arrival at the emergency department.

Results: The patient sample for score validation consisted of 717 patients with complete information. The model's intercept was 0.5 (95% CI, –2.7 to 3.7) and the slope was 1.3 (95% CI, 0.4 to 2.2). The area under the receiver operating characteristic curve was 0.76 (95% CI, 0.58 to 0.94).

Conclusions: The EAHFE-3D scale's ability to discriminate was good in this patient sample and similar to that reported by the authors who developed the scale; however, calibration was poor. The scale should be studied further before it is applied in clinical practice.

Keywords: Decompensated heart failure. Clinical decision-making. Validation.

https://doi.org/10.1017/cem.2018.414 Published online by Cambridge University Press

Hong Kong Journal of Emergency Medicine

http://hkjem.com

Official Journal of the Hong Kong College of Emergency Medicine

The association between abnormal vital sign groups and undesirable patient outcomes

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Introduction: To determine the association between both abnormal individual vital signs and abnormal vital sign groups in the emergency department, and undesirable patient outcomes: hospital admission, medical emergency team calls and death.

Method: We undertook a prospective cohort study in a tertiary referral emergency department (February–May 2015). Vital signs were collected prospectively in the emergency department and undesirable outcomes from the medical records. The primary outcomes were undesirable outcomes for individual vital signs (multivariate logistic regression) and vital sign groups (univariate analyses).

Results: Data from 1438 patients were analysed. Admission was associated with tachycardia, tachypnoea, fever, ≥1 abnormal vital sign on admission to the emergency department, ≥1 abnormal vital sign at any time in the emergency department, a persistently abnormal vital sign, and vital signs consistent with both sepsis (tachycardia/hypotension/abnormal temperature) and pneumonia (tachypnoea/fever) ($p < 0.05$). Medical emergency team calls were associated with tachycardia, tachypnoea, ≥1 abnormal vital sign on admission (odds ratio: 2.3, 95% confidence interval: 1.4–3.8), ≥2 abnormal vital signs at any time (odds ratio: 2.4, 95% confidence interval: 1.2–4.7), and a persistently abnormal vital sign (odds ratio: 2.7, 95% confidence interval: 1.6–4.6). Death was associated with Glasgow Coma Score ≤13 (odds ratio: 6.3, 95% confidence interval: 2.5–16.0), ≥1 abnormal vital sign on admission (odds ratio: 2.6, 95% confidence interval: 1.2–5.6), ≥2 abnormal vital signs at any time (odds ratio: 6.4, 95% confidence interval: 1.4–29.5), a persistently abnormal vital sign (odds ratio: 4.3, 95% confidence interval: 2.0–9.0), and vital signs consistent with pneumonia (odds ratio: 5.3, 95% confidence interval: 1.9–14.8).

Conclusion: Abnormal vital sign groups are generally superior to individual vital signs in predicting undesirable outcomes. They could inform best practice management, emergency department disposition, and communication with the patient and family.

Keywords: Emergency department, vital signs

https://doi.org/10.1017/cem.2018.414 Published online by Cambridge University Press