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 Abstracts are reproduced as published in the respective participating journals and are not peer reviewed or edited by *CJEM*.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 January 2020)

Predictors of Overdose Death Among High-Risk Emergency Department Patients with Substance-Related Encounters: A Data Linkage Cohort Study

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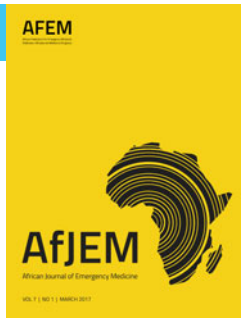
Introduction: Persons with substance use disorders frequently utilize emergency department (ED) services, creating an opportunity for intervention and referral to addiction treatment and harm-reduction services. However, EDs may not have the appropriate tools to distinguish which patients are at greatest risk for negative outcomes. We link hospital ED and medical examiner mortality databases in one state to identify individual-level risk factors associated with overdose death among ED patients with substance-related encounters.

Methods: This retrospective cohort study linked Maryland statewide ED hospital claims records for adults with nonfatal overdose or substance use disorder encounters in 2014 to 2015 with medical examiner mortality records in 2015 to 2016. Logistic regression was used to identify factors in hospital records associated with risk of opioid overdose death. Predicted probabilities for overdose death were calculated for hypothetical patients with different combinations of overdose and substance use diagnostic histories.

Results: A total of 139,252 patients had substance-related ED encounters in 2014 to 2015. Of these patients, 963 later experienced an opioid overdose death, indicating a case fatality rate of 69.2 per 10,000 patients, 6 times higher than that of patients who used the ED for any cause. Factors most strongly associated with death included having both an opioid and another substance use disorder (adjusted odds ratio 2.88; 95% confidence interval 2.04 to 4.07), having greater than or equal to 3 previous nonfatal overdoses (adjusted odds ratio 2.89; 95% confidence interval 1.54 to 5.43), and having a previous nonfatal overdose involving heroin (adjusted odds ratio 2.24; 95% confidence interval 1.64 to 3.05).

Conclusion: These results highlight important differences in overdose risk among patients receiving care in EDs for substance-related conditions. The findings demonstrate the potential utility of incorporating routine data from patient records to assess risk of future negative outcomes and identify primary targets for initiation and linkage to lifesaving care.

African journal of emergency medicine



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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

A cross-sectional description of open access publication costs, policies and impact in emergency medicine and critical care journals

Dove C, Chan TM, Thoma B, Roland D, Bruijns SR
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Introduction: Finding journal open access information alongside its global impact requires access to multiple databases. We describe a single, searchable database of all emergency medicine and critical care journals that include their open access policies, publication costs, and impact metrics.
Methods: A list of emergency medicine and critical care journals (including citation metrics) was created using Scopus (Citescore) and the Web of Science (Impact Factor). Cost of gold/hybrid open access and article process charges (open access fees) were collected from journal websites. Self-archiving policies were collected from the Sherpa/RoMEO database. Relative cost of access in different regions were calculated using the World Bank Purchasing Power Parity index for authors from the United States, Germany, Turkey, China, Brazil, South Africa and Australia.
Results: We identified 78 emergency medicine and 82 critical care journals. Median Citescore for emergency medicine was 0.73 (interquartile range, IQR 0.32–1.27). Median impact factor was 1.68 (IQR 1.00–2.39). Median Citescore for critical care was 0.95 (IQR 0.25–2.06). Median impact factor was 2.18 (IQR 1.73–3.50). Mean article process charge for emergency medicine was $2243.04, SD = $1136.16 and for critical care $2201.64, SD = $1174.38. Article process charges were 2.24, 1.75, 2.28 and 1.56 times more expensive for South African, Chinese, Turkish and Brazilian authors respectively than United States authors, but neutral for German and Australian authors (1.02 and 0.81 respectively). The database can be accessed here: http://www.emct.info/publication-search.html.
Conclusion: We present a single database that captures emergency medicine and critical care journal impact rankings alongside its respective open access cost and green open access policies.

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Emergency Medicine Journal

emj.bmj.com

Official Journal of the Royal College of Emergency Medicine

Adapting the Canadian CT head rule age criteria for mild traumatic brain injury

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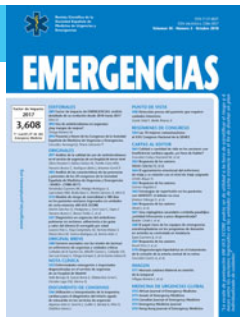
http://dx.doi.org/10.1136/emermed-2018-208153

Objective: With the ageing population, the prevalence of mild traumatic brain injury (mTBI) among older patients is increasing, and the age criteria of the Canadian CT head rule (CCHR) is challenged by many emergency physicians. We modified the age criteria of the CCHR to evaluate its predictive capacity.
Methods: We conducted a retrospective cohort study at a level 1 trauma centre ED of all mTBI patients 65 years old and over with an mTBI between 2010 and 2014. Main outcome was a clinically important brain injury (CIBI) reported on CT. The clinical and radiological data collection was standardised. Univariate analyses were performed to measure the predictive capacities of different age cut-offs at 70, 75 and 80 years old.
Results: 104 confirmed mTBI were included; CT scan identified 32 (30.8%) CIBI. Sensitivity and specificity (95% CI) of the CCHR were 100% (89.1 to 100) and 4.2% (0.9 to 11.7) for a modified criteria of 70 years old; 100% (89.1 to 100) and 13.9% (6.9 to 24.1) for 75 years old; and 90.6% (75.0 to 98.0) and 23.6% (14.4 to 35.1) for 80 years old. Furthermore, modifying the age criteria to 75 years old showed a reduction of CT up to 25% (n = 10/41) among the individuals aged 65–74 without missing CIBI.
Conclusion: Adjusting the age criteria of the Canadian CT head rule to 75 years old could be safe while reducing radiation and ED resources. A future prospective study is suggested to confirm the proposed modification.

Emergencias



emergencias.portalsemes.org/English

Official Journal of the Spanish Society of Emergency Medicine

Tranexamic acid in trauma patients in the emergency department: systematic review and meta-analysis

Ignacio Morales-Cané, Pablo Jesús López-Soto, María Aurora Rodríguez-Borrego

Cited: Morales-Cané I, López-Soto PJ, Rodríguez-Borrego MA. Tranexamic acid in trauma patients in the emergency department: systematic review and meta-analysis. Emergencias. 2019;31:261-269. http://emergencias.portalsemes.org/descargar/cido-tranexmico-en-pacientes-con-traumatismo-en-servicios-de-urgencias-y-emergencias-revisin-sistemtica-y-metanlisis/

Objective: The aim of this systematic review and meta-analysis was to evaluate the efficacy (mortality and functional status) and safety of emergency department (ED) use of tranexamic acid (TXA) in patients with severe trauma.

Methods: MEDLINE, Embase, the Cochrane Library, the Web of Science, and ClinicalTrials.gov were searched to find relevant clinical trials published between January 1, 2008, and 1 August, 2018. The selected trials included trauma patients who received infusions of TXA within 8 hours. We extracted patient-related clinical variables and treatment variables. The main outcomes were mortality and functional status.

Results: Five clinical trials were included in the systematic review. Four of them (20 697 patients) were included in the metaanalysis. We found that TXA versus placebo was associated with lower mortality (OR, 0.89 [95% CI, 0.83–0.96]; P = .004; I2 = 0%) and better functional status (OR, 0.60 [95% CI, 0.39–0.94]; P = .02; I2 = 0%). However, intensive care unit stays were longer in patients administered TXA (mean difference, 2.55 days [95% CI, 0.04–5.06 days]; P = .05; I2 = 0%).

Conclusion: ED infusion of TXA decreases mortality after severe trauma and improves patients' functional status.

Hong Kong Journal of Emergency Medicine

hkjem.com

Official Journal of the Hong Kong College of Emergency Medicine

N-acetylcysteine for adults with acute respiratory distress syndrome: A meta-analysis of randomized controlled trials

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https://journals.sagepub.com/doi/10.1177/1024907918794559

Background: Acute respiratory distress syndrome is regarded as a formidable clinical challenge due to its high prevalence and mortality. The treatment of acute respiratory distress syndrome is very complex and difficult. As an adjuvant therapy, the antioxidant N-acetylcysteine has been investigated for several years but the benefit is controversial.

Objective: We performed the systematic review and meta-analysis of randomized controlled trials to evaluate the efficacy of N-acetylcysteine on patients with acute respiratory distress syndrome.

Methods: We searched PubMed, CENTRAL, and CBM databases. Randomized controlled trials comparing the effects of N-acetylcysteine and control were included. Overall mortality was the primary outcome; length of intensive care unit stay, duration of mechanical ventilation, glutathione levels, and PaO2/FiO2 were the secondary outcomes.

Results: Eight trials with a total of 289 patients were included. Compared to the control group, the N-acetylcysteine group did not lower the overall mortality (risk ratio: 0.83; 95% confidence interval: 0.62 to 1.11; P = 0.21; I2 = 0%). However, N-acetylcysteine significantly shortened intensive care unit stay in the random-effects model (mean difference: –4.47 days; 95% confidence interval: –8.79 to –0.14; P = 0.04; I2 = 46%). Due to substantial heterogeneity and limited number of studies, the data of duration of mechanical ventilation, glutathione levels, and PaO2/FiO2 could not be pooled in the meta-analysis.

Conclusion: N-acetylcysteine is ineffective in reducing mortality but beneficial for intensive care unit stay. Nonetheless, the effectiveness of N-acetylcysteine for acute respiratory distress syndrome is limited and further research is required before strong recommendations can be made.