Global Research Highlights

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Ondansetron Prescription Is Associated With Reduced Return Visits to the Pediatric Emergency Department for Children With Gastroenteritis

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Objective

We determine whether an ondansetron prescription for pediatric patients with vomiting or gastroenteritis is associated with decreased return visits to the emergency department (ED), and whether alternate diagnoses are more frequent on return visits in patients prescribed ondansetron.

Methods

This is a retrospective cohort study of patients 6 months to 18 years of age, presenting to a pediatric ED or its affiliated urgent care centers between 2012 and 2017 with an International Classification of Diseases, Ninth Revision or International Statistical Classification of Diseases and Related Health Problems, 10th Revision diagnosis of gastroenteritis, gastritis, vomiting, or vomiting with diarrhea. Multivariate logistic regression analysis was used to measure the association between an ondansetron prescription and the odds of 72-hour return visits. Rates of alternate diagnoses on return visits (appendicitis, intussusception, intracranial mass, meningitis, and diabetic ketoacidosis) were compared between patients who were prescribed ondansetron for home use and those who were not.

Results

A total of 82,139 patients were studied, with a median age of 4 years. An ondansetron prescription was given to 13.4% of patients on discharge. The 72-hour return visit rate was 4.7%. Patients receiving an ondansetron prescription had decreased odds of 72-hour return visits (adjusted odds ratio 0.84; 95% confidence interval 0.75 to 0.93). The subgroup of patients specifically receiving a diagnosis of gastroenteritis had decreased odds of 72-hour return visits (adjusted odds ratio 0.82; 95% confidence interval 0.72 to 0.95). There was no significant difference between groups in the diagnosis of appendicitis on return visit (odds ratio 0.97; 95% confidence interval 0.37 to 2.18).

Conclusion

An ondansetron prescription is associated with reduced 72-hour ED return visit rates for children with vomiting or acute gastroenteritis and is not associated with masking alternate diagnoses.

African journal of emergency medicine

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

Telephonic description of sepsis among callers to an emergency dispatch centre in South Africa

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Introduction

Sepsis is an acute, life-threatening condition caused by a dysregulated systemic response to infection. Early medical intervention such as antibiotics and fluid resuscitation can be life-saving. Diagnosis or suspicion of sepsis by an emergency call-taker could potentially improve patient outcome. Therefore, the aim was to determine the keywords used by callers to describe septic patients in South Africa when calling a national private emergency dispatch centre.

Methods

A retrospective review of prehospital patient records was completed to identify patients with sepsis in the prehospital environment. A mixed-methods design was employed in two-sequential phases. The first phase was qualitative. Thirty cases of sepsis were randomly selected, and the original call recording was extracted. These recordings were transcribed verbatim and subjected to content analysis to determine keywords of signs and symptoms telephonically. Once keywords were identified, an additional sample of sepsis cases that met inclusion and exclusion criteria were extracted and listened to. The frequency of each of the keywords was quantified.

Results

Eleven distinct categories were identified. The most prevalent categories that were used to describe sepsis telephonically were: gastrointestinal symptoms (40%), acute altered mental status (35%), weakness of the legs (33%) and malaise (31%). At least one of these four categories of keywords appeared in 86% of all call recordings.

Conclusion

It was found that certain categories appeared in higher frequencies than others so that a pattern could be recognised. Utilising these categories, telephonic recognition algorithms for sepsis could be developed to aid in predicting sepsis over the phone. This would allow for dispatching of the correct level of care immediately and could subsequently have positive effects on patient outcome.

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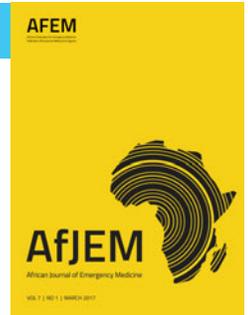
Emergency Medicine Journal

Official Journal of the Royal College of Emergency Medicine

End-tidal and arterial carbon dioxide gradient in serious traumatic brain injury after prehospital emergency anaesthesia: a retrospective observational study

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Objective

In the UK, 20% of patients with severe traumatic brain injury (TBI) receive prehospital emergency anaesthesia (PHEA). Current guidance recommends an end-tidal carbon dioxide (ETCO2) of 4.0–4.5 kPa (30.0–33.8 mm Hg) to achieve a low-normal arterial partial pressure of CO_2 (PaCO2), and reduce secondary brain injury. This recommendation assumes a 0.5 kPa (3.8 mm Hg) ETCO2–PaCO2 gradient. However, the gradient in the acute phase of TBI is unknown. The primary aim was to report the ETCO2–PaCO2 gradient of TBI patients at hospital arrival.

Methods

A retrospective cohort study of adult patients with serious TBI, who received a PHEA by a prehospital critical care team in the East of England between 1 April 2015 and 31 December 2017. Linear regression was performed to test for correlation

and reported as R-squared (R2). A Bland-Altman plot was used to test for paired ETCO2 and PaCO2 agreement and reported with 95% CI. ETCO2–PaCO2 gradient data were compared with a two-tailed, unpaired, t-test.

Results

107 patients were eligible for inclusion. Sixty-seven patients did not receive a PaCO2 sample within 30 min of hospital arrival and were therefore excluded. Forty patients had complete data and were included in the final analysis; per protocol. The mean ETCO2–PaCO2 gradient was 1.7 (±1.0) kPa (12.8 mm Hg), with moderate correlation (R2 = 0.23, p = 0.002). The Bland-Altman bias was 1.7 (95% CI 1.4 to 2.0) kPa with upper and lower limits of agreement of 3.6 (95% CI 3.0 to 4.1) kPa and −0.2 (95% CI −0.8 to 0.3) kPa, respectively. There was no evidence of a larger gradient in more severe TBI (p = 0.29). There was no significant gradient correlation in patients with a coexisting serious thoracic injury (R2 = 0.13, p = 0.10), and this cohort had a larger ETCO2–PaCO2 gradient, 2.0 (±1.1) kPa (15.1 mm Hg), p = 0.01. Patients who underwent prehospital arterial blood sampling had an arrival PaCO2 of 4.7 (±0.2) kPa (35.1 mm Hg).

Conclusion

There is only moderate correlation of ETCO2 and PaCO2 at hospital arrival in patients with serious TBI. The mean ETCO2–PaCO2 gradient was 1.7 (±1.0) kPa (12.8 mm Hg). Lower ETCO2 targets than previously recommended may be safe and appropriate, and there may be a role for prehospital PaCO2 measurement.

Emergencias

Official Journal of the Spanish Society of Emergency Medicine

Clinical findings, risk factors, and final outcome in patients diagnosed with pulmonary thromboembolism and COVID-19 in hospital emergency departments

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Objective

To analyze clinical, laboratory, and radiologic findings and final health outcomes in patients with pulmonary embolism and coronavirus disease 2019 (COVID-19). To compare them to findings and outcomes in patients with pulmonary embolism without COVID-19.

Methods

Multicenter, observational, retrospective study in 4 Spanish hospital emergency departments (EDs) from January 15 to April 15, 2020. Cases were located by reviewing all ED requests for pulmonary computed tomography angiography (CTA) procedures. Clinical, laboratory, and radiologic findings; medical histories and comorbidity; risk factors; and outcomes were compared between the 2 groups of patients (with or without COVID-19).

Results

A total of 399 CTAs were ordered; 88 pulmonary embolisms were diagnosed, 28 of them (32%) in patients with COVID-19. This group had more men, and a history of thromboembolic disease was more common. We found no between-group differences in clinical presentation, laboratory, or radiologic findings; nor were there differences in final outcomes. In-hospital mortality was 7% (2 cases) in patients with COVID-19 and 17% (10 cases) in patients without the virus (odds ratio for death in patients with pulmonary embolism and COVID-19, 0.38; 95% CI, 0.08–1.89).

Conclusion

We found no clinically important differences in the clinical, laboratory, or radiologic findings between patients with or without COVID-19 who were treated for pulmonary embolism in our hospital EDs. Final outcomes also did not differ.