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1067: RETROSPECTIVE DERIVATION AND VALIDATION OF A COMPUTABLE PHENOTYPE OF NOSOCOMIAL ASPIRATION

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(462 ± 73L), followed by IV medications accounting for 33.1% (236 ± 22.6L) and blood products accounting for 2.2% (16 ± 3.2L). Of the IV medications, antimicrobials were the most common (43%; 102L), then vasoactive agents (16%; 38L), electrolytes (12%; 28L), and sedation (7%; 16L). Using small volumes of these IV medications can potentially decrease fluid administered by 60%, 56%, 36%, and 5%, respectively. For every 1L of medication infused, FiO2 increased by 5.4 ± 1.3 ($p<0.0001$). There was a positive correlation between fluid received and time in the ICU ($r=0.899$, $p<0.0001$) and between fluid received and time on ventilator ($r=0.944$, $p<0.0001$). **Conclusions:** IV medications represent the bulk of potentially modifiable fluid intake in critically ill patients. Antimicrobials, vasoactive agents and electrolytes may be able to be administered in a concentrated volume to decrease overall fluid intake. Using novel strategies to decrease fluid intake may improve patient outcomes.

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EVALUATING OUTCOMES OF PORACTANT ALFA VERSUS CALFACTANT IN NEONATES

Amanda Holyk, Michael Melroy

Learning Objectives: Pulmonary surfactant works to reduce surface tension that can lead to lung collapse, decreased lung compliance and respiratory distress syndrome (RDS). There is quite a bit of literature available indicating the benefits of surfactants. However, there is little data comparing poractant alfa and calfactant specifically. Memorial University Medical Center (MUMC) has used both products within recent years. The purpose of this research was to retrospectively evaluate safety and efficacy outcomes of using poractant alfa as compared to calfactant for the treatment of RDS in neonates. **Methods:** The health system's electronic medical record was reviewed to identify neonates weighing 500-2000g, born before 34 weeks' gestation receiving one or more doses of either calfactant or poractant alfa within 48 hours of birth at MUMC for the treatment of RDS developing within 15 hours of life. Collected data included baseline characteristics, outcome measures, and Apgar severity score. **Results:** 94 patients met inclusion criteria. The use of calfactant was associated with more days on the ventilator compared to poractant alfa (9.9 vs 8.8 95% CI -5.2256 to 3.1256, p= 0.6187). Calfactant was also associated with a longer hospital length of stay (66 vs 57 95% CI -23.1426 to 5.7426, p=0.2346). There were 2 deaths in the calfactant group and 3 in the poractant alfa group (4.3% vs 6.4%, p=1.0000). The percent of patients requiring redosing was 40.4% in the calfactant group and 25.5% in the poractant alfa group (p=0.1877). These results were not statistically significant. The average cost per patient of calfactant was $534 and $729 for poractant alfa. After adjusting the cost for the more frequent redosing required by calfactant, the total cost of poractant alfa was $7,538 more than calfactant. **Conclusions:** This analysis demonstrated that calfactant was associated with more days on ventilator, increased length of hospital stay, and more frequent redosing as compared to poractant alfa. However, there was a trend toward increased mortality associated with poractant alfa and it is an intrinsically more expensive product.

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ATYPICAL PRESENTATION AND COMPLICATION OF PEDIATRIC CHRONIC ESOPHAGEAL FOREIGN BODY

Daniel Heilmann, Mathew Harrell, Kayla Jaeger, Christine Gould, Christopher Naun, Mitchell Hamele

Learning Objectives: Chronic esophageal foreign body (CEFB) may mimic other conditions and may be difficult to visualize radiographically and endoscopically making pre-operative diagnosis difficult. Complications from extraction are common. We present 2 cases of CEFB, one posing diagnostic challenges and one with a rarely reported complication. **Methods:** Case 1 is an 18 month old male with 4 weeks of progressive stridor, cough and a choking episode 6 months prior. Airway films revealed critical narrowing of the trachea to 2 mm. He was admitted and underwent a neck and chest CT revealing posterior compression of the trachea. EGD revealed erythema of the anterior esophagus with mass effect but obvious foreign body (FB). Reconstructed CT images revealed a circular 1.9 cm structure with surrounding edema not noted on initial images. Malignancy work up negative and object demonstrated a Hounsfield consistency of plastic. The FB was extracted endoscopically without complication after unroofing an epithelized plastic jewel.**Results:** Case 2 is 12 month-old female with a 2 month history of cough and progressive stridor identified at a routine visit. Plain radiographs revealed a circular, radio-opaque FB in the esophagus. The FB was not readily visualized with direct endoscopy. After unroofing of the epithelium, a coin was extracted. Post operatively the child developed bronchorrhea with diffuse atelectasis and hypoxia. Aggressive suctioning and pulmonary toilet over the next 2 days led to resolution and the child was extubated without further complications. **Conclusions:** When radiolucent, an epithelialized CEFB may be mistaken for malignancy, congenital anomaly or infection. CEFB should be considered even in the absence of evidence on plain radiographs when evaluating a critical airway and progressive stridor. Esophageal rupture and mediastinitis are potential complication of extraction. Profuse bronchorrhea with atelectasis is an uncommon complication of FB extraction that may present in the post-operative period.

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RETROSPECTIVE DERIVATION AND VALIDATION OF A COMPUTABLE PHENOTYPE OF NOSOCOMIAL ASPIRATION

Vikas Bansal, Rahul Kashyap, Gregory Wilson, Emir Festic

Learning Objectives: The current strategies for timely identification of patients at risk for aspiration are limited. With increasing numbers of hospitals adopting electronic medical records, electronic search algorithms in hospitalized patients are becoming useful tools to expedite data abstraction and clinical research with a goal to improve timely recognition of clinical syndromes and related clinical outcomes. Objective: To develop and validate a computable phenotype to identify aspiration in hospitalized patients. Hypothesis: The automated electronic search algorithm will feasible, reliable and it outperform ICD-9 code-based search for aspiration detection. **Methods:** The study cohort consisted of 256,333 (older than 18 years and with prior research authorization) patients hospitalized at Mayo Clinic in Rochester, MN between January 1, 2006 and December 31, 2014. We randomly assigned 100 patients for a derivation cohort, where several iterations of a free-text electronic search (computable phenotype) were performed. Subsequently, the iterated automated search algorithm was validated on an independent cohort of 100 patients. The sensitivity and specificity of the automated digital algorithm were compared to the International Classification of Diseases-9 (ICD-9) codes for aspiration, and manual chart review served as a reference. **Results:** In the derivation cohort, computable phenotype achieved sensitivity and specificity of 100% and 97.1%, while ICD-9 code-based search achieved sensitivity and specificity of 83.9% and 84.1%, respectively. In the validation cohort, computable phenotype achieved sensitivity and specificity of 100% and 95%, while ICD-9 code-based search achieved sensitivity and specificity 87.5% and 93.3%, respectively. **Conclusions:** A computable phenotype for nosocomial aspiration in the form of automated electronic search is feasible, reliable and it outperforms ICD-9 code-based search for aspiration detection.

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ICU ADMISSIONS AMONG PATIENTS WITH MILD TO SEVERE COPD: RESULTS FROM THE TEXACOLD STUDY

Patricia Van Velzen, Paul Brinkman, Peter Sterk, Jan Prins

Learning Objectives: COPD is a leading cause of morbidity and mortality worldwide (www.goldcopd.org). It is however unknown what percentage of patients with mild to severe COPD patients is admitted to the ICU, and how this admission rate compares to the general population. In the Netherlands, ICU admission rate for the general population is 5/1000 per year (Dutch National Intensive Care Evaluation (NICE) registry, www.stichting-nice.nl). We hypothesized that ICU admission rates among COPD patients are higher compared to the general population. Our aim was to determine ICU admission rates among patients with mild to severe COPD and compare them with admission rates among the general population in the Netherlands. **Methods:** The present study was based on data obtained in a 2 years prospective trial in COPD patients (TEXACOLD Study). Patients included were ≥45 years with a smoking history of ≥10 pack years, GOLD stage 1–3 and ≥1 exacerbation during the past 3 years. Data regarding ICU admissions during follow-up were collected. Data from the general population were retrieved from the NICE-registry. Statistical comparisons were performed with Fisher-exact test and expressed in odds ratios (OR). **Results:** 301 patients were randomized in the RCT. Age (yrs): 66.1 ± 9.5, female sex: 122 (40.5%); pack-years: 49.0 ± 34.3; GOLD 1: 40 (13.3%); GOLD 2:

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