

Presentation Type:

Poster Presentation

Quality Initiative to Reduce Catheter-Associated Urinary Tract Infections Using Cleansing Cloths With a Standardized Method

Lauren Droske, NorthShore University HealthSystem; Parul Patel, NorthShore University HealthSystem; Donna Schora, NorthShore University HealthSystem; Jignesh Patel, NorthShore University Health System; Ruby Barza, NorthShore University HealthSystem; Cherie Faith Monsalud, NorthShore University HealthSystem; Adrienne Fisher, NorthShore University HealthSystem; Rachel Lim, NorthShore University HealthSystem Evanston Hospital; Mona Shah, NorthShore University HealthSystem; Bridget Kufner, NorthShore University HealthSystem; Shane Zelencik, NorthShore University HealthSystem; Mary Alice Lavin, Lavin Consulting, LLC; Kamaljit Singh, Evanston Hospital/NorthShore University Health System

Background: Catheter-associated urinary tract infections (CAUTIs) account for >15% of hospital-acquired infections, resulting in increased length of stay and costs. Consequently, methods to improve indwelling urinary catheter (IUC) care and maintenance are warranted to reduce the risk of hospital-acquired CAUTIs. This study was a prospective quality improvement (QI) project to reduce CAUTIs using prepackaged cloths (ReadyCleanse by Medline Industries) and a simple, standardized cleaning process for care and maintenance of IUCs.

Methods: This study is an ongoing QI project at NorthShore University HealthSystem, a 4-hospital system located north of Chicago, Illinois, with 750 beds and ~64,000 annual admissions. The study consists of a 1.5-month staff training on proper product use (phase 1), followed by an intervention using the cloths for IUC care (phase 2). Each package contains 5 individual cloths corresponding to a simple, 5-step, cleansing protocol. IUC care and maintenance are performed twice daily on a routine basis and after each incontinent episode. Beginning July 2018, current

practice (soap and wash cloth) was replaced with the ReadyCleanse cloths, and on August 1, 2018, data collection began. Adult patients admitted at all 4 NorthShore Hospitals with an IUC for >24 hours are enrolled in the study. From patient electronic health records, we collected patient demographics, reason for IUC insertion, days of catheter use, and development of CAUTI (according to the NHSN definition). During the intervention, observations of compliance and performance of catheter care were also performed. For the analysis described here, results for the first 14 months of the study were compared to CAUTI numbers from the 14-month period prior to the start of the study (February 2017–March 2018); the data presented represent ~50% of the planned data collection.

Results: As of September 30, 2019, 4,969 patients were prospectively enrolled in the study: 1,491 patients from hospital A, 1,451 from hospital B, 1,091 from hospital C, and 936 from hospital D. Patient demographics for the study cohort were 47% female, with a median age of 77 years and an average of 3.9 catheter days per patient. Systemwide, observational audits for compliance using the cloths averaged 95%. Upon completion of study month 14, 22 CAUTIs had been identified, compared to 26 CAUTIs for the comparison period, indicating a 15% reduction.

Conclusion: Implementation of this simple, standardized alternative for IUC care is feasible on a large scale and may have potential for reducing CAUTI rates.

Funding: Medline Industries supported this study.

Disclosures: None

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Similar Mortality in Patients with Invasive and Noninvasive Pneumonia Due to Group B *Streptococcus*

Brigid Wilson, Northeast Ohio VA Healthcare System; Sunah Song; Taissa Zappernick, VA Northeast Ohio Healthcare System; Janet Briggs; Richard Banks; Robin

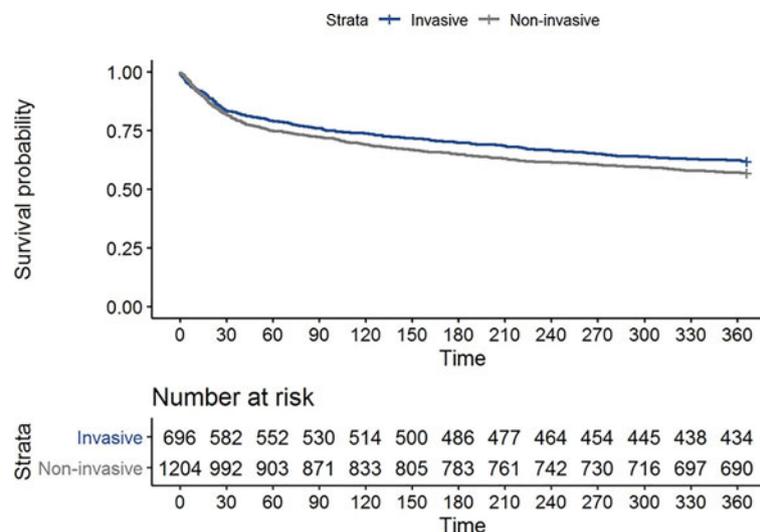


Fig. 1

Jump, Louis Stokes Cleveland Veterans' Affairs Medical Center; Federico Perez

Background: Rates of invasive infections caused by group B *Streptococcus* (GBS) are increasing among adults. The burden of noninvasive GBS infections, including pneumonia, has not been well characterized. Here, we compare comorbidities and mortality associated with invasive and noninvasive pneumonia caused by GBS. **Methods:** Using the Veterans' Health Administration national data warehouse, we studied a retrospective cohort review of veterans diagnosed with GBS pneumonia between 2008 and 2017. Invasive pneumonia was defined as blood cultures positive for GBS associated with an order for a chest x-ray and an *International Classification of Disease* (ICD) code for pneumonia. Noninvasive pneumonia was defined as a respiratory culture positive for GBS associated with both an order for a chest x-ray and an ICD code for pneumonia among patients with negative or without blood cultures. Patients with respiratory cultures positive for GBS without either an associated chest x-ray or ICD code for pneumonia were considered colonized. We compared demographics, comorbid conditions, and mortality among patients with invasive and noninvasive GBS pneumonia. **Results:** Between 2008 and 2017, we detected 706 cases of invasive GBS pneumonia, 1,244 cases of noninvasive GBS pneumonia, and 1,470 cases of respiratory colonization with GBS. Most patients were male (97%), with an average age of 69.0 years (SD, 12.0 years). The prevalence of several comorbid conditions differed between those with invasive and noninvasive disease: diabetes mellitus (61% and 46%, respectively); chronic pulmonary diseases (53% and 65%, respectively); chronic heart disease (58% and 44%, respectively), chronic kidney disease (43% and 27%, respectively). Mortality was similar among those with invasive and noninvasive GBS pneumonia at 30 days (17% and 18%, respectively) and at 1 year (38% and 43%, respectively) (Fig. 1). **Conclusions:** We identified important differences in underlying comorbid conditions between patients with invasive and noninvasive GBS pneumonia, which may give rise to differences in their clinical presentation. Overall mortality, however, was similar: more than one-third of patients with GBS pneumonia died within 1 year. These findings indicate that noninvasive GBS pneumonia is an important clinical entity.

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Surgical Site Infections with Predominance of Multidrug Resistant in Benin: A Multicenter Study

Carine Laurence YEHOUEYOU, Supranational laboratory of mycobacteriology; Hector RODRIGUEZ-VILLALOBOS, Microbiologie, Clinique Universitaire Saint Luc, Université Catholique de Louvain, UCLouvain, Brussels, Belgium; Olivia DALLEUR, Clinical Pharmacy research Group (CLIP), Louvain Drug Research Institute (LDRI),

Université Catholique de Louvain UCLouvain, Brussels, Belgium; Anne SIMON, Microbiologie, Cliniques Universitaires Saint-Luc, Université Catholique de Louvain, UCLouvain, Brussels, Belgium. / Pole de Microbiologie, Institut de Recherche Expérimentale et Clinique (IREC), Université Catholique de Louvain, UCLouvain, Brussels, Belgium

Background: Surgical site infections remain common and widespread; they contribute to increasing antimicrobial resistance among the etiological agents. Antimicrobial resistance is the ability of a microorganism like bacteria to stop an antimicrobial from working against it. This study was conducted to determine the spectrum of bacterial isolates from surgical site infections and their susceptibility patterns. A secondary outcome was to compare bacterial identification by a local lab and a European one. **Methods:** This descriptive cross-sectional study was conducted between January and August 2019 in 6 public hospitals in Benin. Pus specimens were processed using standard microbiological procedures, and identification was performed using the analytical profile index (API). Antimicrobial susceptibility testing was performed in Benin following the modified Kirby-Bauer disk-diffusion technique and was confirmed in Belgium by MALDI-TOF mass spectrometry. A second antimicrobial susceptibility test was performed using BD Phoenix automated microbiology system (Becton Dickinson). Clinical data of enrolled patients were obtained from hospital records. **Results:** The mean age of patients was 32 ± 11 years (range, 18–76). The median time for surgical site infections was 9 postoperative days. Of the 229 patients from whom wound swabs were collected, 195 (85.15%) showed positive aerobic bacterial growth. In total, 164 pathogenic bacteria were isolated, including 41 gram-positive organisms (25%), 78 gram-negative fermentative bacteria (47.5%), and 45 gram-negative nonfermentative bacteria (27.5%). We observed 3 discrepancies between API technique and MALDI-TOF. Two *Klebsiella pneumoniae* and 1 *Pseudomonas* spp (API) versus, respectively, *Klebsiella varicola* and *Pseudomonas mendocina* (MALDI-TOF). The most prevalent bacterial species were *E. coli* (31%), followed by *S. aureus* (25%), *Pseudomonas aeruginosa* (18%), and *Klebsiella pneumoniae* (11%). Of the 41 *S. aureus*, 26 (63.41%) were methicillin-resistant *Staphylococcus aureus* (MRSA), and 3 of these were carrying both MRSA and induced clindamycin resistance (ICR). Extended-spectrum β-lactamase (ESBL)-producing Enterobacteriaceae were observed in 60 of 78 isolates tested (77%). All of 2 *Morganella morganii* and 89% of *K. pneumoniae* were ESBL producers. **Conclusions:** Among *S. aureus*, 2 of 3 were MRSA, whereas almost *K. pneumoniae* and *E. coli* were ESBL producers. Three strains are pan-drug resistant in nonfermentative bacteria, and no isolate was susceptible to all antibiotics. These findings are of high interest for better management of patients and control of antimicrobial resistance in Benin.

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