1484. Prevalence of Pyuria With and Without Bacteriuria in Healthy Pre-Menopausal Women

Ann E. Stapleton, MD; Pacita Roberts, MS; Thomas M. Hooton, MD; University of Washington, Seattle, Washington; University of Miami Miller School of Medicine, Miami, Florida

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Background. Pyuria has long been considered key to diagnosis of urinary tract infection in women, but there is paucity of data on its prevalence and association with asymptomatic bacteriuria (ASB) in healthy women, even though pyuria and ASB often trigger inappropriate antimicrobial treatment.

Methods. We enrolled 104 healthy premenopausal women with a history of recurrent urinary tract infection (UTI) in an observational care unit (ICU) performed daily assessments of bacteriuria, pyuria (leukocyte esterase strips) and UTI symptoms over a 3-month period. These data enabled an evaluation of the prevalence of pyuria and ASB and associations between them.

Results. The mean age of participants was 22 and 74% were white. Pyuria occurred frequently in this cohort of women, with 72 (77%) of 94 evaluable subjects having pyuria on at least one day with no symptomatic UTI diagnosed. The median percent of days with pyuria reported was 7% (range, 0–100%). Asymptomatic bacteriuria (ASB, urobacterium with colony count ≥10^5 CFU/mL of uropathogen on days with no symptomatic UTI diagnosed) occurred in 45 (45%) women on 159 (2.5%) of 6,283 days. ASB was most commonly caused by E. coli, which was present in 1.4% of days with median duration one day (range, 1–10). The positive predictive value of pyuria in detecting ASB was 4%. Five women had 11 transient episodes of pyuria, significant bacteriuria, and UTI symptoms (‘pseudolical UTI’) but did not seek medical attention.

Conclusion. In this population of healthy women at high risk for UTI and ASB, asymptomatic pyuria was a frequent occurrence and ASB rarely lasted more than 2 days. In our study, UTI was associated with bacteriuria. The prevalence of the above was reported to be higher in asymptomatic women.

Disclosures. All authors: No reported disclosures.

1485. Trends in Important-Resistant Gram-Negative (GN) and Gram-Positive (GP) Urinary Bacterial Pathogens in Hospitalized Patients in the United States: A Multicenter Evaluation from 2013 to 2018

Thomas Lodise, PharmD, PhD; Steven P. Gelone, PharmD; Kalvin Yu, MD; Kalpana Gupta, MD, MPH; Maureen Early, MT, MBA; Gang Ye, PhD; Jennifer Schranz, MD; Vikas Gupta, PharmD, BCPS; College of Pharmacy and Health Sciences, Albany, New York; Nabriva Therapeutics US, Inc., King of Prussia, Pennsylvania; Becton, Dickinson and Company, Franklin Lakes, New Jersey; YA Boston Healthcare System and Boston University School of Medicine, West Roxbury, Massachusetts

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Background. The US CDC has identified a number of antibiotic-resistant (AR) bacteria as urgent or serious public health threats. This study sought to quantify the prevalence and incidence of extended-spectrum β-lactamase (ESBL) and carbapenem-resistant (CRE) Enterobacteriaceae (ENT), Carbapenem-resistant ENT (CRE), P. aeruginosa (Carb-NS PsA), vancomycin-resistant enterococci (VRE), and methicillin-resistant S. aureus (MRSA) in the urine of adult hospitalized patients.

Methods. Hospitalized adult patients with a positive urine culture (first urine isolate of a species per 30-day period) were evaluated from over 400 US hospitals (2013–2018; BD Insights Research Database, Becton, Dickinson and Company). The following five groups of AR bacteria were examined: (1) ESBL ENT if ESBL-positive per commercial panels or intermediate-resistant (non-susceptible [NS]) to a third-generation cephalosporin; (2) CRE ENT if NS to imipenem (IPM), meropenem (MEM), doripenem (DOR) or ertapenem; (3) Carb-NS PsA if NS to IPM, MEM or DOR; (4) VRE if resistant to vancomycin; and (5) MRSA as resistant to methicillin/oxacillin. For each AR grouping, % NS and rates of NS per 100 admissions were calculated and trends were examined using Logistic regression and Poisson models.

Results. Across the 6-year study period, there were 24,558,856 admissions, accounting for 2,285,971 non-duplicate urine isolates; 1,016,642 were ENT, 87,450 were VRE, 203,231 were enterococci, and 41,979 were S. aureus. The % NS for ESBL ENT, Carb-NS PsA, VRE, and MRSA were 12%, 9%, 13%, 19%, and 55%, respectively. The % of NS for ESBL increased from 2013 to 2018 (P < 0.001) whereas % NS for PsA and % MRSA decreased during the same time period (P = 0.001) (Figure 1). The rates of NS per 100 admissions for ESBL, CRE ENT, Carb-NS PsA, VRE, and MRSA were 0.44, 0.04, 0.05, 0.16, and 0.09, respectively. The annual NS rates per 100 admissions for tend to increase for ESBL and CRE ENT were increasing (all P < 0.001) while the trends for Carb-NS PsA, VRE, and MRSA were decreasing (all P < 0.001).

Conclusion. While the percent of ESBL, CRE ENT, Carb-NS PsA, VRE, and MRSA have remained relatively constant over the past 6 years, there has been a notable increase in the rates of ESBL and CRE ENT per 100 admissions among adult hospitalized patients with positive urine cultures.

1486. Evaluation of the Impact of Homelessness on Presentation and Outcomes of Gram-Negative Sepsis

Chiao An Chiu, PharmD; Dominique A. Werge, PharmD; Niko Arab, PharmD; Miguel Palafoux, PharmD Candidate; Emi Minejima, PharmD; University of Southern California, California; LAC+USC Medical Center, Los Angeles, California; West Coast University, Los Angeles, California

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Background. Low socioeconomic status has been shown to contribute to an increased likelihood and intensive care unit (ICU) admission in patients with sepsis. The role of homelessness on outcomes of gram-negative sepsis is currently unknown.

Methods. Single-center, retrospective cohort study of hospitalized adults with Enterobacteriaceae infections between 2015 and 2017. Medical charts were reviewed for pertinent data. Patients were grouped as homeless (H) vs. non-homeless (NH) and compared for patient characteristics, clinical presentation, and course. Primary outcome was 30-day mortality. Secondary outcomes were 30-day readmission and hospital length of stay (LOS).

Results. 198 patients were included; 68 in H group vs 130 in NH group. H group were younger (mean 51 years vs. 57 years, P = 0.01), more likely to be male (71% vs. 37%, P < 0.01) and non-Hispanic White (57% vs 21%, P < 0.01). Two groups had similar comorbidities, except H group had more liver dysfunction (16% vs. 7%, P = 0.05); however, less heart failure (7% vs. 18%, P = 0.03). H group had a more severe presentation with higher rate of ICU admission (57% vs. 41%, P = 0.04) although initial SOFA score (median 6 vs. 4, P = 0.14) and need for vasopressors (16% vs. 18%, P = 0.19) were similar. Urinary tract infection (37% vs. 45%, P = 0.36) and bacteremia (38% vs. 42%, P = 0.76) were the most common sources. Total antibiotic duration was similar (median 7d, P = 0.61); H group received more empirical vancomycin (16% vs. 7%, P = 0.05) and fluoroquinolones as definitive therapy (13% vs. 8%, P = 0.03). 30d mortality was similar (13% vs. 8%, P = 0.21); however, H group had significantly prolonged LOS by 4d (median 9 days vs. 5 days, P < 0.01) and higher 30 days re-admission (41% vs. 18%, P < 0.01).

Conclusion. Within a medically underserved population, homeless patients with gram-negative sepsis were younger and had more liver disease compared with patients with housing. As this group had increased utilization of healthcare resources including need for ICU-level care, prolonged LOS, and 30-day re-admission, additional targeted interventions to prevent and optimally treat Enterobacteriaceae infections in homeless patients may be needed.

Disclosures. All authors: No reported disclosures.

1487. Recent Resurgence of Salmonellosis-Related Mortality in the United States, 1990–2015

Pakal Panchal, MPH; Frank Sorvillo, PhD; Mark S. Dworin, MD, MPH; University of Illinois at Chicago, Chicago, Illinois; UCCLA Fielding School of Public Health, Los Angeles, California

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Background. Non-typoidal salmonellosis is one of the most common causes of foodborne illness in the United States. The objective of this study was to update the epidemiology of salmonellosis-related mortality in the United States by examining multiple-cause-of-death data (MCOD).

Disclosures. All authors: No reported disclosures.
Methods. MCD data from the National Center for Health Statistics (NCHS) for the years 1990–2015 were analyzed. Mortality rates and 95% confidence intervals (CI) were calculated for age, sex, race/ethnicity, year, and state. Poisson regression models were used to examine temporal trends. Logistic regression was used to determine whether selected comorbid conditions were associated with salmonellosis-related deaths. Overall, 1,096 salmnoellosis-related deaths (3.1%) were identified as an underlying and/or associated cause of death. The average annual age-adjusted mortality rate was 0.027 per 100,000 person-years. Salmonellosis mortality rates were higher among males with an age-adjusted rate ratio (RR) of 1.89 (95% CI, 1.79–2.01) compared with females. Mortality rates were higher among non-Hispanic Blacks and Hispanic/Asian/Pacific Islanders with an age-adjusted RR of 2.46 (95% CI, 2.19–2.77) and 2.06 (95% CI, 1.67–2.55) compared with Whites, respectively. The highest number of salmonellosis deaths were reported among the 75–84 year age group (x = 467, 24% of all cases). A significant increase in trend was observed in age-adjusted salmonellosis mortality rates from 1990 to 2015. Since 2006, a significant increase of 66% in mortality rates was observed. Among selected comorbid conditions, HIV, acute renal failure, cancers affecting bone marrow, and diseases of the digestive system were associated with salmonellosis deaths. A RRs associated with odds ratios of 1.35 (95% CI, 1.30–1.41), 1.30 (95% CI, 1.24–1.36) and 1.29 (95% CI, 1.24–1.34), respectively.

Conclusion. Salmonellosis is an underlying and/or associated cause of death, especially among those with immune senescence and suppression. Despite a substantial decline in mortality rates, since 2006 rates have increased, a concerning trend. If rates continue to increase, an evaluation of Salmonella prevention efforts will be warranted.

Disclosures. All authors: No reported disclosures.

1488. Effects of Clostridium difficile Infection in Hospitalized Patients with Inflammatory Bowel Disease, National Inpatient Sample Study 2016
Bing Chen, MD; Omar Mahmoud, MD; Bolun Liu, MD; Mount Sinai St Luke's and Mount Sinai Morningside, New York, New York; John H. Stroger Hosp of Cook County, Chicago, Illinois

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Background. Patients with inflammatory bowel disease (IBD) including ulcerative colitis (UC) and Crohn's disease (CD) have been shown to have increased Clostridium difficile infection (CDI) rates. In this study, we aimed to determine the effects of concurrent CDI in the outcomes of hospitalized patients with IBD.

Methods. In this retrospective cohort study, we analyzed the 2016 National Inpatient Sample (NIS) database of hospitalized patients with a first or secondary diagnosis of IBD and CDI using their respective ICD-10 codes. Primary outcomes of interest were all-cause mortality, hospital length of stay, total cost for hospital stay, and rate of colectomy. Multivariable regression was used to adjust for age, gender, race, hospital bed size, and Charlson comorbidity index. We studied 14 for analysis.

Results. There were a total of 3,306 patients admitted with IBD and CDI, of which 1,864 had a diagnosis of UC and 1,460 had a diagnosis of CD. 58.02% of the patients were male, and the mean age of the patients in the CD group (48.97 [47.79–50.15]) was lower than the UC group (55.16 [54.01–56.31]). The results of in-hospital outcomes are shown in Tables 1 and 2.

Conclusion. We observed a significant increase in all-cause mortality, hospital length of stay, and total cost for hospital stay in IBD patients with concurrent CDI. There was no statistical difference in the rate of colectomy.

Disclosures. All authors: No reported disclosures.

1489. Vancomycin 125 mg vs. 250 mg for the Treatment of Non-Severe and Severe Clostridium difficile Infections
Amy Hsu, PharmD; Caitlin Richardson, PharmD, BCP; Steve M. Kuriyama, MD; Skaag School of Pharmacy and Pharmaceutical Sciences, University of California, San Diego, La Jolla, California; Scripps Memorial Hospital Encinitas, Encinitas, California

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Background. Infectious Diseases Society of America (IDSA) guidelines recommend oral vancomycin 125 mg four times daily for 10 to 14 days for both non-severe and severe Clostridium difficile infections (CDI). Although 125 mg achieves sufficient fecal concentrations, doses of 250 mg are still commonly used in practice. There is limited data available comparing vancomycin 125 mg to higher doses. To the best of our knowledge, there are no studies that compare the effectiveness of vancomycin 125 mg vs. 250 mg in the treatment of CDI.

Methods. Single-center, retrospective cohort analysis of oral vancomycin 125 mg vs. 250 mg for the treatment of CDI between June 2016 and February 2019. Diagnosis of CDI involved symptomatic patients with positive Clostridium difficile toxin by either polymerase chain reaction or toxin enzyme immunoassay. We used IDSA guideline criteria of severe and non-severe to evaluate those who received a 10- or 14-day course of oral vancomycin. We excluded patients with concomitant metronidazole or fidaxomicin use, history of CDI in the past 8 weeks, fulminant CDI, or mortality prior to completion of therapy. The primary outcome was resolution of clinically significant diarrhea. Secondary outcomes included duration of loose stools, relapse of CDI within 30 days of diagnosis, and 30-day all-cause mortality.

Results. A total of 93 patients were included in the study, with 71 patients (76.3%) in the 125 mg group and 22 patients (23.7%) in the 250 mg group. Both groups were well matched with no significant differences at baseline or during treatment. Results showed no statistical difference in clinical resolution between the 125 mg and 250 mg groups, with 70 patients (98.6%) and 22 patients (100%) achieving clinical resolution, respectively (P = 1.00). Secondary outcomes revealed no statistical difference in duration of symptoms, relapse, or 30-day all-cause mortality.

Conclusion. There was no difference in clinical resolution of CDI between the vancomycin 125 mg and 250 mg groups. Furthermore, the dose of vancomycin did not have a significant effect on duration of symptoms, relapse, or 30-day all-cause mortality. Using the lower, guideline-recommended dose of vancomycin could potentially reduce patient exposure and provide cost-savings benefits without sacrificing efficacy.

Disclosure and Treatment Characteristics

Table 1: In-hospital outcomes in IBD patients with and without CDI and CD group

Table 2: Adjusted odds ratio/coefficient of in-hospital outcomes in IBD patients with CD and CD group

Disclosures. All authors: No reported disclosures.

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Background. Over a 2-year period at a University hospital, the GI panel only had a positive result. In our study, we excluded patients with concomitant metronidazole or fidaxomicin use, history of CDI in the past 8 weeks, fulminant CDI, or mortality prior to completion of therapy. The primary outcome was resolution of clinically significant diarrhea. Secondary outcomes included duration of loose stools, relapse of CDI within 30 days of diagnosis, and 30-day all-cause mortality.

Results. A total of 93 patients were included in the study, with 71 patients (76.3%) in the 125 mg group and 22 patients (23.7%) in the 250 mg group. Both groups were well matched with no significant differences at baseline or during treatment. Results showed no statistical difference in clinical resolution between the 125 mg and 250 mg groups, with 70 patients (98.6%) and 22 patients (100%) achieving clinical resolution, respectively (P = 1.00). Secondary outcomes revealed no statistical difference in duration of symptoms, relapse, or 30-day all-cause mortality.

Conclusion. There was no difference in clinical resolution of CDI between the vancomycin 125 mg and 250 mg groups. Furthermore, the dose of vancomycin did not have a significant effect on duration of symptoms, relapse, or 30-day all-cause mortality. Using the lower, guideline-recommended dose of vancomycin could potentially reduce patient exposure and provide cost-savings benefits without sacrificing efficacy.