

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

Ann E. Stapleton, MD<sup>1</sup>; Pacita Roberts, MS<sup>1</sup>; Thomas M. Hooton, MD<sup>2</sup>; <sup>1</sup>University of Washington, Seattle, Washington; <sup>2</sup>University of Miami Miller School of Medicine, Miami, Florida

**Session:** 157. Urinary Tract Infections

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**Background.** Pyuria has long been considered key to diagnosis of urinary tract infection in women, but there is a 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 study and 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, urine culture with colony count  $\geq 10^5$  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 (“preclinical 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. Pyuria, whether associated with bacteriuria or not, was generally not accompanied by urinary symptoms and did not appear to be clinically meaningful. Young women with recurrent UTI are often advised by their providers to test their urine with dipsticks for pyuria or bacteriuria, and be treated if either are positive, regardless of absence of UTI symptoms. Such practices, which contribute to antimicrobial resistance, are not supported by our data.

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

Thomas Lodise, PharmD, PhD<sup>1</sup>; Steven P. Gelone, PharmD<sup>2</sup>; Calvin Yu, MD<sup>3</sup>; Kalpana Gupta, MD, MPH<sup>4</sup>; Maureen Early, MT, MBA<sup>2</sup>; Gang Ye, PhD<sup>5</sup>; Jennifer Schranz, MD<sup>2</sup>; Vikas Gupta, PharmD, BCPS<sup>2</sup>; <sup>1</sup>Albany College of Pharmacy and Health Sciences, Albany, New York; <sup>2</sup>Nabriva Therapeutics US, Inc., King of Prussia, Pennsylvania; <sup>3</sup>Becton, Dickinson and Company, Franklin Lakes, New Jersey; <sup>4</sup>VA Boston Healthcare System and Boston University School of Medicine, West Roxbury, Massachusetts

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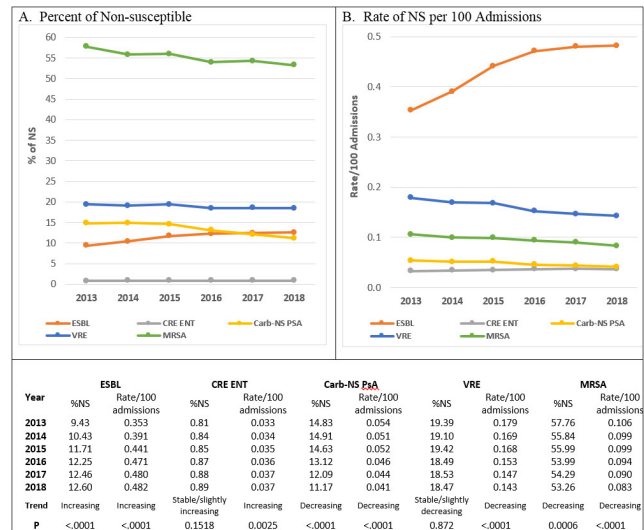
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**Background.** The US CDC has identified a number of antibiotic-resistant (AR) bacteria as urgent or serious public health threats. This study sought to quantify the prevalence and incidence of extended-spectrum  $\beta$ -lactamase (ESBL) Enterobacteriaceae (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.** All 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 PsA, 203,231 were enterococci, and 41,979 were *S. aureus*. The % of NS for ESBL, CRE ENT, Carb-NS PsA, VRE, and MRSA were 12%, 0.9%, 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 admission trends for ESBL and CRE ENT were increasing (all  $P < 0.0001$ ) while the trends for Carb-NS PsA, VRE, and MRSA were decreasing (all  $P < 0.0001$ ).

**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.



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

Chiao An Chiu, PharmD<sup>1</sup>; Dominique A. Werge, PharmD<sup>2</sup>; Niki Arab, PharmD<sup>3</sup>; Miguel Palafox, PharmD Candidate<sup>1</sup>; Emi Minejima, PharmD<sup>1</sup>; <sup>1</sup>University of Southern California, Cypress, California; <sup>2</sup>LAC+USC Medical Center, Los Angeles, California; <sup>3</sup>West Coast University, Los Angeles, California

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**Background.** Low socioeconomic status has been shown to contribute to an increase in mortality and intensive care unit (ICU) admission in patients with sepsis. The role of homelessness on outcomes of gram-negative sepsis is currently unknown. The primary objective was to evaluate the impact of homelessness on presentation and outcomes compared with low socio-economic status patients with housing.

**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 re-admission 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%,  $P = 0.05$ ). 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.

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

Palak Panchal, MPH<sup>1</sup>; Frank Sorvillo, PhD<sup>2</sup>; Mark S. Dworkin, MD, MPH<sup>1</sup>; <sup>1</sup>University of Illinois at Chicago, Chicago, Illinois; <sup>2</sup>UCLA Fielding School of Public Health, Los Angeles, California

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**Background.** Non-typhoidal 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 (MCCOD).