1451. Change in Clinical Characteristics of Community-Acquired Acute Pyelonephritis in South Korea: Comparison Between 2010–2011 and 2017–2018

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Background. The aim of this study was to examine the change in clinical characteristics of community-acquired acute pyelonephritis (CA-APN) in South Korea between 2010–2011 and 2017–2018.

Methods. We recruited all CA-APN patients with age ≥19 years who visited 4 hospitals in South Korea from September 2017 to August 2018 prospectively. The inclusion criteria were: (i) presence of fever (body temperature ≥37.8°C), (ii) pyuria [≥25–9 white blood cells per high power field (WBC/HPE)], and (iii) clinical symptoms or signs relevant to APN. Patients diagnosed with APN more than 48 hours after admission, those transferred from other hospitals during treatment of APN, those with other reasons for fever and pyuria, and those with insufficient data were excluded. Each patient was included for the first episode during the study period. The collected data were compared with those from the previous study with the same design in 2010–2012, in which the same hospitals were participated.

Results. Total number of patients was 141, including 112 (79.4%) who had received carbapenem and 29 (20.6%) received non-carbapenem as definitive therapy against to APN with ESBL-producing Enterobacteriaceae. The duration of hospitalization in 2017–2018 was 11.74±11.72 days in 2017–2018, P < 0.001, and there was no significant difference in time to febrile days and definitive therapy between two groups.

Conclusion. The emerence of carbapenem-resistant strains of Enterobacteriaceae, non-carbapenem antibiotics are suggested as the alternative treatment of extended-spectrum β-lactamase (ESBL) producing Enterobacteriaceae in South Korea. In this study, efficacy of non-carbapenem antibiotics on acute pyelonephritis (APN) with ESBL-producing Enterobacteriaceae was compared with that of carbapenem.

Disclosures. All authors: No reported disclosures.

1452. Is Carbapenem-Sparing Therapy as Effective as Carbapenem Against Extended-Spectrum β-Lactamase Producing Enterobacteriaceae in UTI? Jonghoon Hyun, MD,1 Yongseop Lee, MD,2 Hye Seong, MD3; Jung Ho Kim, MD1; Nam su Ku, MD, PhD4; Jun yong Choi, MD, MD3; Joon-Sup Yeom, MD, PhD5; Su Jin Jeong, MD, PhD6; Yonsei University College of Medicine, Seoul, seoulukypol, Republic of Korea; 7Department of Internal Medicine, Yonsei University College of Medicine, Seoul, Seoul-seoulkypol, Republic of Korea; 8Division of Infectious Diseases, Department of Internal Medicine, Soonchunhyang University Seoul Hospital, Soonchunhyang University College of Medicine, Seoul, Seoul-seoulkypol, Republic of Korea; 9Department of Internal Medicine, Kyonggi-do University College of Medicine, Songsan-gu, Seoul-seoulkypol, Republic of Korea

Session: 157. Urinary Tract Infections Friday, October 4, 2019: 12:15 PM

Background. With the emergence of carbapenem-resistant strains of Enterobacteriaceae, non-carbapenem antibiotics are suggested as the alternative treatment of extended-spectrum β-lactamase (ESBL) producing Enterobacteriaceae in UTI. This study aimed to compare extended-spectrum β-lactamase producing Enterobacteriaceae UTI in South Korea from September 2017 to August 2018, prospectively. The inclusion criteria were: (i) the presence of fever (body temperature ≥37.8°C), (ii) pyuria [≥25–9 white blood cells per high power field (WBC/HPE)], and (iii) clinical symptoms or signs relevant to APN.

Methods. The medical records of patients who had diagnosed to have acute pyelonephritis with ESBL-producing Enterobacteriaceae on their urine culture, from January 2011 to December 2018, were reviewed retrospectively. Patients were classified as carbapenem and non-carbapenem group according to the definitive antibiotics they had treated with.

Results. Total number of patients was 141, including 112 (79.4%) who had received carbapenem, and 29 (20.6%) received non-carbapenem as definitive therapy against APN with ESBL-producing Enterobacteriaceae. The duration of hospitalization in 2017–2018 was 11.74±11.72 days in 2017–2018, P < 0.001. The patients in 2017–2018 were older (60.71±17.29 vs. 55.77±18.60, P < 0.001), and the median days of admission was higher for patients in 2017–2018 (10 vs. 8, P < 0.001).

Conclusion. Non-carbapenem therapy against APN with ESBL-producing Enterobacteriaceae has no significant difference in clinical outcome compared with carbapenem therapy.

Disclosures. All authors: No reported disclosures.

1453. Cephalexin and Cefadroxil Are Not Therapeutic Equivalents for Uncomplicated Cystitis (uUTI): Further Analysis of Cefazolin Surrogate Susceptibility Testing Criteria Ronald N Jones, MD1; Hien M Nguyen, MD2; United States Committee on Antimicrobial Susceptibility Testing (USCAST), Silverton, Oregon; 3Northwest Permanente, Clackamas, Oregon

Session: 157. Urinary Tract Infections Friday, October 4, 2019: 12:15 PM

Background. Cephalexin (CLEX) and cefadroxil are first-generation oral cephalosporins (OCs) with similar antimicrobial spectra, side-effects, and high urine concentrations; and are US-FDA approved for uUTI. Some stewardship programs are replacing CLEX with cefadroxil (4 × daily) for dosing convenience. The USCAST Committee on Antimicrobial Susceptibility Testing (USCAST) and CLSI recommend a cefazolin (CZOL) UTI surrogate breakpoint (≤16 mg/L; ≥15 mm) to predict susceptibility (S) for OCs against indicated Enterobacteriaceae. Direct cephalosporin antimicrobial susceptibility testing (AST) does not exist in US breakpoint interpretive documents, limiting specific results.

Methods. We reanalyzed and compared the CZOL surrogate testing for cefadroxil, CLEX and 5 other OCs using AST data previously reported (Schuetz et al., 2013; HIMA). Broth microdilution AST was used against 205 isolates: E. coli (92.40% with β-lactamase), K. pneumoniae (62), P. mirabilis (31; 10% with β-lactamase), and other enteric bacilli (20). A CZOL surrogate S breakpoint (≤16 mg/L) was used to infer S for OCs.

Results. CZOL X cefadroxil cross-S accuracy rate was only 91.6% (unsatisfactory; ε 95%) and the false resistance was 9.7% (acceptable). CLEX susceptibility (S) for 7 OC's against indicated Enterobacteriaceae has no significant difference in clinical outcome compared with carbapenem therapy.

Disclosures. All authors: No reported disclosures.