

Conclusion. Short course IV antibiotics for < 48 hours for young infants with nonbacteraemic UTI are safe provided bacterial meningitis has been excluded. Treatment failure and serious complications were rare in young infants with UTI.

Disclosures. All Authors: No reported disclosures

1438. Prevalence and Risk Factors for Extended Spectrum Betalactamases Among Hospitalized Patients with Community Acquired Pyelonephritis in Colombia
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Session: P-81. UTIs

Background. Urinary tract infections (UTI) are the most frequent bacterial infection in hospitalized patients. Extended spectrum betalactamases (ESBL) producing bacteria causing UTI have become more prevalent. *Escherichia coli* (*E. coli*) is the most frequent ESBL producing bacteria isolated in UTI. This drug resistant organisms are associated with poorer outcomes for patients. In low income countries, approaching to and treating ESBL *E. coli*, represent a major challenge for health care centers.

Methods. A retrospective cohort of adult patients with community acquired pyelonephritis caused by *Escherichia coli* was identified in a tertiary hospital in Colombia. Susceptibility was performed with Vitek (BioMerieux, France); extended spectrum beta lactamase (ESBL) production was defined phenotypically. Inclusion criteria were adult patients hospitalized with a positive urine culture for *E. coli*. Demographic and clinical characteristics were searched in electronic records. Risk factors associated with ESBL production were identified by using a multivariate logistic regression analysis.

Results. During 7 years 817 patients with pyelonephritis caused by *E. coli* were identified. 79 (9.7%) of them were caused by ESBL producers. Women were 66% and 408 (74.8% of them) had menopause. Mean age was 64.2 years (standard deviation of 19.1). Of the cohort, 481 (561.1%) had at least some comorbidity and was frequent to find diabetes (18.5%), immunosuppression due to oncologic disease or medications (18.4%), urolithiasis or previous surgical procedures (17%). After logistic regression, risk factors identified to predict ESBL production, were: being a man (aOR 5.4, 2.1-18.2), a woman with menopause (aOR 2.9, 1.3 -9.9), and the Charlson score (aOR 0.83, 0.73 - 0.96). Previous antibiotic use was not related to ESBL infection.

Conclusion. In this relatively large cohort of patients with pyelonephritis caused by *E. coli*, ESBL production risk factors were not clearly identified other than sex and menopause. Curiously, Charlson score predicted a lower risk of resistance. Other factors (food consumptions and others) might be driving the resistance in the community in *E. coli*.

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1439. Epidemiology and 12- Month Antibiotic Use in the Outpatient Setting among Adult Patients with Complicated Urinary Tract Infections: A Retrospective Database Analysis

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Session: P-81. UTIs

Background. Complicated urinary tract infections (cUTI) are one of the most common bacterial infections and represent substantial burden to the health care system. Here, we examine the epidemiology and treatment patterns associated with cUTI in a large US database containing longitudinal inpatient (IP) and outpatient (OP) patient-level data.

Methods. We conducted a retrospective cohort study of adult patients in the IBM MarketScan® Commercial or Medicare Supplemental Databases with at least 1 IP or non-diagnostic OP claim with a diagnosis for cUTI between January 1, 2017 and June 30, 2019. Patients meeting the following criteria were included for analysis: (1) ≥18 years of age on the index date, (2) ≥6 months of continuous enrollment (CE) with medical and pharmacy benefits prior to the index date, (3) ≥12 months of CE following the index date or evidence of death, and (4) no evidence of a prior cUTI during the 6-month baseline period. Demographics and clinical characteristics were quantified. Patients were classified as IP if they were hospitalized during 30-day post index date; remaining patients were classified as OP. Antibiotics received in the OP setting in the 12-months post index date were examined.

Results. 95,423 patients met study criteria. Most (86.4%) patients were Commercially insured, mean (SD) age was 53.6 (18.1) and 70.4% were female. Mean baseline Charlson Comorbidity Index was 0.77. During the 30-day post index date, 22.2% were treated as IP and 77.8% were strictly treated as OP. In the 12-month OP follow-up period among index IP, 78.2% required ≥ 2 antibiotics, 38.2% required ≥4 antibiotics, and 41.6% received an IV antibiotic. In the 12-month OP follow-up period among index OP, 81.8% required ≥2 antibiotics, 38.2% required ≥4 antibiotics, and 46.8% received an IV antibiotic. For both IP and OP, fluoroquinolones were the most common oral antibiotic class (57.7%), followed by cephalosporins (39.2%), penicillins (30.3%), trimethoprim-sulfamethoxazole (29.8%), and nitrofurantoin (25.2%). Cephalosporins were the most common IV antibiotic class (38.5%).

Conclusion. Regardless of index treatment setting, approximately 40% of all cUTI patients required ≥4 antibiotic therapy and almost half with receive an IV antibiotic in the outpatient setting in the 12-months post index date.

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1440. Meta-regression Analysis of Worldwide Herpes Zoster Incidence

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Session: P-82. Virology: Studies of the Epidemiology of Viral Infections

Background. Many studies have been conducted worldwide to estimate Herpes Zoster (HZ) incidence rates and temporal trends. We systematically reviewed and synthesized studies of HZ incidence rates in the general population using meta-analysis models.

Methods. A random-effects meta-analysis was conducted to estimate HZ incidence from a published worldwide systematic literature review (SLR) including only individuals aged 50 years and older. Meta-regression was used to explore if variability in incidence rates could be explained by a combination of study-specific characteristics in the base model: age, gender, continent and year of data collection. The impact of adding additional covariates: case detection, case definition, study design, incidence type, patient type and latitude to the base model was also assessed.

Results. 65 out of 69 studies from the SLR, were included in the analysis: 27 from Europe, 20 from North America, 11 from Asia and 7 from Oceania. There was much variability in study methodology and outcomes. Heterogeneity of incidence rates was greatest across studies conducted in Asia. Meta-analysis results showed that: incidence increased with age; was lower in males compared to females; was lower in Europe and North America compared to Asia and Oceania; and increased from the period prior to 2003 to the period after 2003. The final meta-regression model included continent, year of data collection, gender, age, cubic and quadratic terms for age, as well as an age x gender interaction term. The age x gender interaction suggests that the difference in incidence between males and females is greater in younger ages (e.g. 50-59), whereas in older age groups (e.g. 80+) incidence rates are similar between males and females. None of the additional covariates contributed significantly to the model. It was estimated that 15.5 million HZ cases occurred in 2020 worldwide in individuals aged 50 years and older, which in the absence of vaccination, is projected to increase to 19.8 million by 2030.

Conclusion. The model allows for trends in incidence data to be explored based on influential covariates. Incidence rates were shown to vary by age, gender, continent, and over time.

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1441. Significant Decrease in the Incidence Rate of Common Outpatient Upper Respiratory Tract Infection Diagnoses per Clinic Visit in the First Respiratory Season of October 2020 to March 2021 During the Covid-19 Pandemic. A Report From an Outpatient Antimicrobial Stewardship Program at a community hospital in Brooklyn

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Session: P-82. Virology: Studies of the Epidemiology of Viral Infections

Background. As part of our outpatient Antimicrobial Stewardship Program, we do surveillance of diagnoses and antibiotic use for common upper respiratory tract infections such as acute upper respiratory tract infection, acute bronchitis, sinusitis, and pharyngitis. We sought to evaluate the impact of the Covid-19 pandemic on the incidence rate of upper respiratory tract infection diagnoses per clinic visit during October 2020 to March 2021 season compared to the three prior respiratory seasons. We also sought to reflect impact of increase in televisits and overlapping symptoms of COVID 19 and upper respiratory tract infections.

Methods. Our cohort study extending from October 2017 to March 2021. We collected number of diagnoses of upper respiratory infections and number of unique clinic visits during four consecutive respiratory seasons at our primary care sites via electronic health records.

Results. During the recent October 2020 to March 2021 respiratory season which coincided with the second NYC Covid-19 wave, we had 11569 unique clinic visits and 39 diagnoses of an upper respiratory tract infection - incident rate of 1.29. In the three prior respiratory seasons combined, we had 40939 unique clinic visits and 833 diagnoses of an upper respiratory tract infection - incident rate of 1.49. The incident rates showed a dramatic decline using the test based method and the chi square-statistic $p < 0.0001$ with an incident rate ratio using a poisson exact method of 6.0359. Statistical comparisons of the current season to each prior individual season yielded similar results. The percentage of Tele-visits during the current season was 19% compared to 0% in the 3 prior seasons.

Conclusion. During the first respiratory season from October 2020 to March 2021 in midst of the Covid-19 pandemic which also coincided with the second Covid-19 wave in New York, we saw a statistically significant decrease in incidence of common upper respiratory tract infection diagnoses per clinic visit compared to the three prior respiratory seasons. Overlapping signs and symptoms of upper respiratory tract infections and Covid-19 with the added percentage in Tele-visits did not cause an increase in incidence rates of upper respiratory tract infection diagnoses. Covid-19 related mitigation efforts may have played a role.

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1442. Spatiotemporal Clusters of Varicella and the Regional Risks through Bayesian Approach: A National Five-year Cohort Analysis

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Session: P-82. Virology: Studies of the Epidemiology of Viral Infections

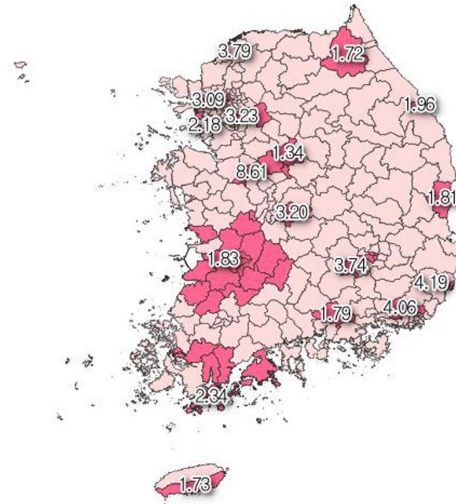
Background. Since varicella epidemics repeatedly occurred in Korea, it is essential to control varicella outbreaks preemptively in the targeted region. Therefore, we aimed to reveal spatiotemporal clusters of varicella and the regional risk factor of varicella incidence at the national level.

Methods. All varicella cases (defined as ICD-10 codes, B01-B09) from 2013 to 2017 in Korea were extracted from National Health Insurance Service. Of the total, 566,978 cases were realigned spatially by 250 administrative districts of Korea and temporally by a week. Spatial autocorrelation was tested using the global Moran's I statistics using Monte Carlo simulation. Kulldorff's prospective space-time scan statistics were used to reveal space-time clusters of varicella. Possible risk factors were extracted from the Korean Statistical Information Service and Community Health Survey of Korea, including hand hygiene perceptions, alcohol and smoking status, the proportion of children under 15 years old, the number of households, and household income by regions. After selecting significant risk factors through non-spatial generalized linear models, a conditional autoregressive spatiotemporal model with Bayesian extension was applied to estimate the regional factors affecting varicella incidence.

Results. There was spatial autocorrelation using Global Moran's I statistics ($P < 0.01$). When the maximum cluster size was limited to 10% of the population, 17 spatiotemporal clusters were detected in specific regions in Korea (figure 1). Low perception of hand hygiene, the high proportion of alcohol drinking and cigarette smoking, high children proportion, low number of familial member, and low household income were associated with varicella spatiotemporal incidence (odds ratio:

0.97, 1.01, 2.31, 1.10, 0.99, 0.99, respectively; 95% credible intervals of all risk factors did not include 1).

Figure 1. Space-time prospective clusters of varicella in Korea using varicella incidence from 2013 to 2017.



Relative risks ratio of each cluster is described at the point.

Conclusion. Varicella incidence shows spatiotemporal clustering patterns in specific regions. Since regional factors such as the perception rate of hand hygiene, child proportion, alcohol drinking, cigarette smoking, and low household income affect varicella's spatiotemporal incidence, strategies for targeted control of high-risk regions are strongly recommended.

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1443. Seroprevalence of HTLV-I/II in a Tertiary-Level Hospital in Newark, NJ

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Session: P-82. Virology: Studies of the Epidemiology of Viral Infections

Background. Human T-cell lymphotropic virus type I (HTLV-I) remains amongst the most neglected tropical diseases in the medical field due to its low prevalence in developed countries and the low incidence of its associated diseases, Adult T-cell lymphoma/leukemia (ATLL) and tropical spastic paraparesis (TSP). We proposed a higher prevalence of infections with this virus in Newark given its significant percentage of foreign-born residents of HTLV-endemic countries such as Jamaica, the Dominican Republic, Peru, and Brazil.

Methods. Descriptive study from secondary data. We obtained the total number of HTLV-I/II tests performed at University Hospital in the last 2 years (05/2018-10/2020). Subsequently, medical charts were reviewed to obtain epidemiological and clinical data.

Results. A total of 89 patients underwent screening for HTLV-I/II, of whom 4 (4%) were positive. The test was more frequently ordered in male (61%) and foreign-born (84%) individuals. The main reasons for testing were positive Strongyloides antibody in transplant candidates (20%), neurological symptoms (20%) and hematological symptoms (20%). In most cases, the test was ordered by Infectious Diseases (58%) and Neurology (18%). Being foreign-born was significantly associated with being tested in the case of non-transplant candidates (93% vs 56%, $p < 0.001$). Amongst the patients with positive serology, there were 2 cases of ATLL and 2 of TSP. Three of them had their country of origin registered (Ecuador, Barbados and Ghana). Family testing was only offered to one of the positive HTLV-I/II participants. Interestingly, this was the only case referred to Infectious Diseases.