

1422. Burden of Pertussis in South Korea: Implications for adults

Bruce Mungall, PhD¹; Hyungwoo Kim, MD, MPH¹; Kyu-Bin Oh, MD¹; ¹GSK, Seoul, Seoul-t'ukpyolsi, Republic of Korea

Session: P-65. Public Health

Background. There are a limited number of published studies on pertussis disease burden and epidemiology in South Korea, particularly those evaluating the impact in adults.

Methods. We conducted a systematic literature review on pertussis epidemiology and burden of disease in South Korea. The objective was to highlight evidence gaps which could help improve awareness about pertussis disease in adults in South Korea.

Results. Of 940 articles published between January 2000 to December 2019, 19 articles provided data for pertussis epidemiology and 9 provided data in adults. Laboratory confirmation rates in adults varied according to methodology, likely influenced by study/sampling variations. Three studies reported serological evidence of infection in adolescents and adults (33-57%). Among cases, the average cough duration was 16.5 days (range 7-30 days) and over 85% of cases presented with paroxysmal cough, while only 25% of cases or less presented with a characteristic whoop or post-tussive vomiting. Importantly, in 4 studies reporting vaccination status, almost all adult cases had no history of pertussis vaccination since childhood.

Conclusion. Primary childhood vaccination rates in South Korea are among the highest globally, while adult pertussis vaccine uptake appears to be quite low. Our literature review suggests that pertussis is underreported in adults, as evidenced by serology data demonstrating that tetanus antibody levels are low while pertussis toxin antibody levels are relatively high, suggesting continued circulation of community pertussis. These findings highlight the need for strategies such as maternal immunization and decennial revaccination of adults to address the changing epidemiology and waning immunity. Active pertussis testing/reporting and better utilization of adult vaccine registries is required to help provide robust data for vaccine decision-making at the national level. In the current COVID-19 environment, strategies that can reduce clinic or hospital visits will have substantial benefits to authorities managing rapid increases in health care resource utilization, and vaccine preventable diseases provide an easy and immediate target for achieving that goal.

Disclosures. Bruce Mungall, PhD, the GSK group of companies (Employee, Shareholder) Hyungwoo Kim, MD, MPH, the GSK group of companies (Employee) Kyu-Bin Oh, MD, the GSK group of companies (Employee, Shareholder)

1423. Clinical Presentation Of Brucellosis: An Experience Of 29-Year Period

Fatma Hammami, MD¹; Makram Koubaa, MD¹; Fatma Smaoui, MD¹; Amal Chakroun, MD¹; Khaoula Rekiq, MD¹; Emna Elleuch, MD¹; Chakib Marrakchi, MD¹; Mounir Ben Jemaa, MD¹; ¹Infectious Diseases Department, Hedi Chaker University Hospital, University of Sfax, Tunisia, Sfax, Tunisia

Session: P-65. Public Health

Background. Brucellosis is a multi-organ zoonotic disease which may present with a myriad manifestation. In our country, brucellosis remains endemic and represents a public health problem. We aimed to study the clinical, therapeutic and evolutionary features of brucellosis.

Methods. We conducted a retrospective study including all patients hospitalized for brucellosis in the infectious diseases department between 1990 and 2018. Positive blood cultures to *Brucella spp* and/or standard agglutination test (SAT) titer > 1/160 confirmed the diagnosis.

Results. During the study period, we encountered 216 cases of brucellosis, among whom 140 cases were males (64.8%). The mean age was 40±17 years. Patients came from rural areas (89.8%) and had a close contact with animals (70.8%). The consumption of unpasteurized milk was noted in 182 cases (84.2%). A family history of brucellosis was noted in 53 cases (24.5%). In total, 68 patients had a previous medical history of treated brucellosis (31.4%). There were 113 cases (52.3%) of acute brucellosis and 103 cases (47.7%) of sub-acute brucellosis. Spondylodiscitis (65 cases; 63.1%), neurobrucellosis (17 cases; 16.5%) and sacroiliitis (12 cases; 11.7%) were the most common forms of the sub-acute brucellosis. The revealing symptoms were fever (83.8%), night sweats (71.3%), arthralgia (55.1%) and back pain (53.2%). Laboratory investigations revealed leukopenia (14.4%), anemia (49%) and elevated C-reactive protein levels (42.1%). Blood cultures were positive to *Brucella* in 17.1% of the cases. Patients received a combination therapy based on doxycycline and rifampicin in 141 cases (65.2%). Triple therapy regimen including doxycycline, rifampicin and co-trimoxazole was prescribed in 51 cases (23.6%). The mean treatment duration was 52±20 days in the acute form and 6±3 months in the sub-acute form. The disease evolution was favourable in 94.4% of the cases. Sequelae were noted in 12% of the cases and relapse in 3.7% of the cases. Four patients were dead (1.9%).

Conclusion. Due to its various clinical presentation, the diagnosis of brucellosis might be delayed. High index of suspicion is required in order to promptly diagnose the disease. Control and eradication of brucellosis in animals are mandatory so as to eradicate brucellosis.

Disclosures. All Authors: No reported disclosures

1424. Factors Associated with Failure to Clear Candidemia Infection: Surveillance Data from Eight States, 2017

David H. Oh, MD/MPH¹; Emma Seagle, MPH²; Shawn R. Lockhart, PhD, D(ABMM)³; Joelle Nadle, MPH⁴; Devra Barter, MS⁵; Helen Johnston, MPH⁵; Monica M. Farley, MD⁶; Andrew Revis, MPH⁷; Brittany Pattee, MPH⁸;

Erin C. Phipps, DVM, MPH⁹; Brenda L. Tesini, MD¹⁰; Alexia Y. Zhang, MPH¹¹; William Schaffner, MD¹²; Brendan R. Jackson, MD, MPH³; Meghan Lyman, MD¹³; ¹Tufts University School of Medicine, San Leandro, California; ²Centers for Disease Control and Prevention, Mycotic Disease Branch, Atlanta, Georgia; ³Centers for Disease Control and Prevention, Atlanta, Georgia; ⁴California Emerging Infections Program, Oakland, California; ⁵Colorado Department of Public Health and Environment, Denver, Colorado; ⁶Emory University, Atlanta, Georgia; ⁷Foundation for Atlanta Veterans Education and Research/VA Health System, Georgia Emerging Infections Program, Atlanta, Georgia; ⁸Minnesota Department of Health, St. Paul, Minnesota; ⁹University of New Mexico, Albuquerque, New Mexico ¹⁰New York Emerging Infections Program, Rochester, New York ¹¹Oregon Public Health Division- Acute and Communicable Disease Prevention, Portland, Oregon; ¹²Vanderbilt University Medical Center, Nashville, Tennessee; ¹³CDC, Atlanta, Georgia

Session: P-65. Public Health

Background. Candidemia is a bloodstream infection commonly associated with high morbidity and mortality. Failure to clear candidemia can lengthen hospitalization and treatment. Factors associated with candidemia clearance are unknown.

Methods. We analyzed 2017 candidemia surveillance data from the Centers for Disease Control and Prevention's Emerging Infections Program. Data from eight sites (counties in California, Colorado, Georgia, Minnesota, New Mexico, New York, Oregon, and Tennessee) were included. Clearance was defined as having a blood culture negative for *Candida* ≤30 days after initial culture date (ICD). Cases with unknown clearance, unknown survival outcome, or death ≤30 days of ICD were excluded. Demographic and clinical factors associated with clearance were assessed with bivariate analysis using chi-square tests and multivariable logistic regression to calculate adjusted odds ratios (aOR) using backward selection (p-value< 0.10).

Results. Of 1,024 candidemia cases, 737 were included and 582 (79%) demonstrated clearance, of which 79% had evidence of clearance ≤5 days after ICD. In bivariate analysis, clearance was associated with central venous catheter (CVC) ≤2 days before ICD, CVC removal ≤7 days after ICD, and systemic antifungal medication within 14 days before ICD. Clearance was inversely associated with black race and admission from another hospital. In multivariable analysis, only race and admission from another hospital were significant predictors; age, sex, and CVC presence and subsequent removal were also retained for their clinical relevance. In the final model, clearance was less likely among black patients (aOR 0.51, 95% confidence interval [CI] 0.29-0.91) and those admitted from another hospital (aOR 0.28, 95% CI 0.11-0.75).

Table 1. Bivariate associations for select variables between individuals with documented candidemia clearance and those without documented clearance in eight Emerging Infections Program surveillance sites, 2017

Characteristic	No documented clearance (N=155)	Documented clearance (N=582)	p-value
Sex (female)	80 (51.6)	264 (45.4)	0.307
Race			
White	96 (61.9)	383 (65.8)	0.341
Black	44 (28.4)	133 (22.9)	
Other	15 (14.9)	66 (11.3)	
Central venous catheter(s) present ≤2 days prior to initial culture date (yes)	75 (48.4)	397 (68.2)	<0.0001
Central venous catheter(s) removed/changed within 7 days after initial culture date (yes)	45 (58.4)	322 (80.7)	<0.0001
Systemic antifungal(s) within 14 days before initial culture date (yes)	96 (61.9)	547 (94.0)	<0.0001
Systemic antifungal(s) to treat candidemia (yes)	55 (35.5)	344 (59.1)	<0.0001
Preadmission location (prior to candidemia-associated hospitalization)			
Private residence	105 (74.5)	433 (75.7)	0.012
Hospital inpatient (admitted from another hospital)	10 (7.1)	16 (2.8)	
Long term care facility	20 (14.2)	80 (14.0)	
Long term acute care hospital	0 (0)	9 (1.6)	
Homeless	6 (4.3)	9 (1.6)	
Incarcerated	0 (0)	4 (0.7)	
Other	0 (0)	18 (3.2)	
Unknown	0 (0)	3 (0.5)	
Underlying conditions			
Chronic kidney disease	35 (22.6)	148 (25.4)	0.466
Chronic pulmonary disease	25 (16.1)	113 (19.4)	0.351
Cystic fibrosis	0 (0)	4 (0.7)	0.301
Diabetes mellitus	50 (32.3)	196 (33.7)	0.739
HIV	4 (2.6)	7 (1.2)	0.209
Injection drug use, current	24 (15.5)	65 (11.2)	0.143
Malignancy, hematologic	4 (2.6)	22 (3.8)	0.472
Malignancy, solid organ (non-metastatic)	16 (10.3)	88 (15.1)	0.127
Malignancy, solid organ (metastatic)	11 (7.1)	46 (7.9)	0.738
Transplant, hematopoietic stem cell	1 (0.7)	3 (0.5)	0.845
Transplant, solid organ	1 (0.7)	6 (1.0)	0.660

Conclusion: We found failure to clear candidemia infection to be associated with black race and prior hospital exposure, but not other factors previously shown to be associated (e.g., comorbidities, CVC presence). These associations could reflect illness severity, access to care, or other obstacles to effective treatment. Additional research is needed to investigate these associations further and identify other factors (e.g., treatment type and timing) to improve outcomes.

Disclosures. All Authors: No reported disclosures

1425. Impact of Social Determinants on Racial Differences in Carbapenem-Resistant Enterobacteriaceae Incidence, Atlanta, 2012-2018

Gillian Smith, MPH¹; Chris W. Bower, MPH¹; Scott Fridkin, MD²; Jesse T. Jacob, MD, MSc²; ¹Georgia Emerging Infections Program, Atlanta, GA; ²Emory University, Atlanta, GA