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731. Investigating Clinical Factors Contributing to Continued Antibiotic Therapy in Patients with Viral Upper Respiratory Tract Infections

Alexander Lawandi, MD CM, MSc¹ and Charles Frenette, MD, FSHEA²; ¹Internal Medicine, McGill University Health Centre, Montreal, QC, Canada, ²McGill University Health Center, Montréal, QC, Canada

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Background. It has previously been demonstrated that upwards of 50% of patients presenting to Emergency Departments with symptoms of an upper respiratory tract infection receive empirical antibiotics, and that even with a demonstrated viral infection, 70% of these patients are continued on antibiotics. However, the clinical and biochemical factors contributing to this continued therapy is unclear. This study assessed parameters that may impact antibiotic prescriptions in patients with a confirmed viral respiratory infection.

Methods. Positive respiratory virus PCRs (RVPs) from nasopharyngeal aspirates performed on adult patients presenting to the McGill University Health Centre Emergency Departments and outpatient clinics over a period of 10 days during the peak of influenza season were included. For each patient, antibiotic administration pre- and post-PCR result were determined, as were the presence of leukocytosis, neutrophilia, an abnormal chest X-ray, and sepsis. Each parameter's effect on antibiotic use was then determined.

Results. During the study period, there were 123 positive RVPs included. These consisted of 34% Flu A, 43% Flu B, and 23% were a mixture of other common respiratory viruses. Antibiotics were administered in 38% of patients before the test was resulted and continued in 79% of these patients afterwards. There was no correlation between the presence of leukocytosis, neutrophilia, signs of sepsis or abnormalities on chest X-ray and continued antibiotic therapy.

Conclusion. Despite identification of a respiratory virus infection, patients are routinely treated with antibiotics even without significant evidence of a bacterial process. The impact of testing for respiratory viruses in limiting antibiotic therapy could be improved by education and direct antibiotic stewardship interventions in this population.

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732. Description of Diagnoses and Antibiotic Management of Otitis Media and Otitis Externa in Adults

Benjamin Pontefract, PharmD¹; Karl Madaras-Kelly, PharmD, MPH²; McKenna Nevers, MS³; Katherine Fleming-Dutra, MD⁴ and Matthew Samore, MD, FSHEA⁵; ¹Pharmacy, Boise Veterans Affairs Medical Center, Boise, Idaho, ²Pharmacy Service, Boise Veterans Affairs Medical Center, Boise, Idaho, ³Salt Lake City Veterans Affairs Medical Center, Salt Lake City, Utah, ⁴CDC, Atlanta, Georgia, ⁵University of Utah School of Medicine, Division of Epidemiology, Salt Lake City, Utah

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Background. Otitis diagnoses include acute otitis media (AOM), otitis media with effusion (OME), and acute otitis externa (AOE). AOM and OME occur primarily in children, whereas AOE occurs with similar frequency in children and adults. Treatment with amoxicillin or close observation without antibiotics is recommended for pediatric AOM, and oral antibiotics are not routinely recommended to treat OME or uncomplicated AOE. Data on otitis diagnoses in adults is limited. This study's purpose is to characterize the incidence and antibiotic management of otitis diagnoses in adults.

Methods. A retrospective cohort of ambulatory veterans who presented at one of six VA Medical Centers during years 2014–2016 with an ICD-9 or -10 code for AOM, OME, and AOE diagnoses was developed. Data extracted included demographics, vital signs, diagnoses, and antibiotic prescriptions. Incident density rates for adult AOM, OME, and AOE were calculated and compared with rates for acute rhinosinusitis. Antibiotic prescribing rates were calculated.

Results. Of 4,759 otitis visits identified, the most frequent diagnoses included AOM (38%), OME (25%), and AOE (34%). A single otitis diagnosis was coded in 95.6% of visits and 13.0% had co-diagnosis of another acute respiratory infection (ARI). The incidence density ($\pm 95\%$ confidence interval) was 5.4 (5.2, 5.7), 3.6 (3.5, 3.9), and 4.9 (4.7, 5.2) cases per 1,000 patient-years for AOM, OME, and AOE, respectively. For comparison, the incidence density of rhinosinusitis was 16.6 (16.2, 17.0) cases per 1,000 patient-years. Oral antibiotics were prescribed in 48% of visits: AOM (50%), OME (49%), and AOE (47%). Topical antibiotics were prescribed in 32% of AOE visits. The most common oral and otic antibiotics prescribed were amoxicillin/clavulanate (36%), amoxicillin (28%), azithromycin (11%), and hydrocortisone/neomycin/polymyxin (65%), respectively.

Conclusion. Otitis diagnoses in adults were common independent of ARI co-diagnoses, but less frequent than rhinosinusitis. Almost half of the patients received an oral antibiotic including those with AOE and OME, indicating a possible focus for antibiotic stewardship programs. Studies to evaluate diagnostic accuracy and treatment of otitis diagnoses in adults are needed.

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733. Incidence and Evaluation of the Change in Functional Status Associated with Respiratory Syncytial Virus Infection in Hospitalized Older Adults

Angela Branche, MD¹; Evelyn Granieri, MD, MPH²; Edward Walsh, MD, FIDSA^{1,3}; Lynn Finelli, DrPH⁴; William Greendyke, MD^{2,5}; Ann R. Falsey, MD^{1,3}; Angela Barrett, BA⁶; Celibell Vargas, MD^{6,7} and Lisa Saiman, MD, MPH^{5,8}; ¹Department of Medicine, Division of Infectious Diseases, University of Rochester, Rochester, New York,

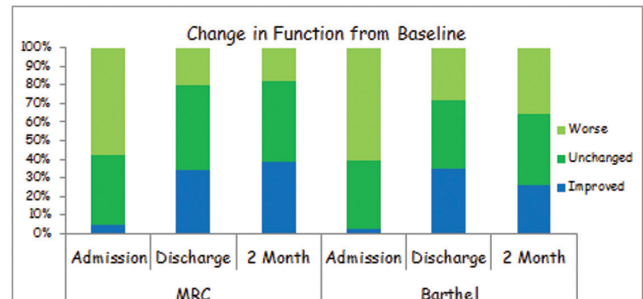
²Department of Medicine, Columbia University Medical Center, New York, New York, ³Department of Medicine, Division of Infectious Diseases, Rochester General Hospital, Rochester, New York, ⁴Center for Observational and Real-World Evidence, Merck & Co., Inc., Kenilworth, New Jersey, ⁵Infection Prevention and Control, NewYork-Presbyterian Hospital, New York, New York, ⁶Infection Prevention and Control, New York-Presbyterian Hospital, New York, New York, ⁷Department of Pediatrics, Columbia University Medical Center, New York, New York, ⁸Pediatrics, Columbia University Medical Center, New York, New York

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Background. Respiratory Syncytial Virus (RSV) causes severe respiratory illnesses in infants and older adults. Mortality disproportionately affects the elderly, can exacerbate chronic cardiopulmonary conditions and may result in loss of function. The purpose of this study was to determine the incidence of RSV infection in hospitalized adults and evaluate functional changes associated with RSV hospitalization in older adults ≥ 60 years.

Methods. Adults ≥ 18 years of age admitted with an acute respiratory infection (ARI) or exacerbation of chronic cardiopulmonary disease (e.g. CHF, COPD, asthma) preceded by an ARI within 14 days were screened. Subjects were included if hospitalized for ≥ 24 hours with laboratory confirmed RSV and residing in two catchment areas (Rochester, NY and New York, NY). Illness history, comorbidities and demographic characteristics were collected at enrollment. Enrolled subjects ≥ 60 years underwent functional status evaluation retrospectively 2 weeks prior to hospitalization, at enrollment, discharge and 2 months using the Lawton-Brody Instrumental Activity of Daily Living (IADL) Scale (0–8), Barthel (ADL) Index (0–100), MRC Breathlessness score (1–5) and Mini-Cog instrument.

Results. From October 2017 to March 2018, 2,883 adults hospitalized with ARI were tested and 322 (11%) positive for RSV. Seventy-two adults ≥ 60 years underwent functional assessment. Mean age was 75 years, 53% were female and 58% demonstrated impaired cognition on admission. Five subjects died during hospitalization and one prior to 2-month follow-up. Interim analysis of 2-month functional assessment was available for 39 subjects. RSV illness resulted in acute functional loss in almost all patients. Although there were no statistically significant differences between mean pre-hospitalization and 2-month functional scores, IADL (6.7 vs. 6.0, $P = 0.27$), ADL (90.4 vs. 88.5, $P = 0.67$) and MRC (2.96 vs. 2.7, $P = 0.57$), 23% of subjects required a higher level of care at discharge. Additionally, RSV hospitalization resulted in decreased ADL scores in 36% of subjects and worsening respiratory function in 18% assessed at 2 months (figure).



Conclusion. Older adults hospitalized with RSV infection demonstrate acute functional decline which may result in prolonged loss of function in some patients.

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734. Post-exposure Management of Influenza in Roommates at a Tertiary Care Cancer Center

Sandra Carlino, BS¹ and Mini Kamboj, MD²; ¹Infection Control, Memorial Sloan Kettering Cancer Center, New York, New York, ²Memorial Sloan Kettering Cancer Center, New York, New York

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Background. Post-exposure antiviral chemoprophylaxis with neuraminidase inhibitors (NI) is 80% effective in preventing influenza in household members. In hospital settings, management of exposed roommates has not been specifically addressed in clinical studies. Some experts recommend immunocompromised individuals exposed to influenza to receive therapeutic doses of NI as a preventive measure regardless of duration of exposure. The objective of this study was to determine optimal intervention in high-risk patients exposed to influenza based on duration of spatial overlap and viral testing at the time exposure is recognized.

Methods. MSK is a 473-bed tertiary care cancer center. Infection Control performs contact investigation for cases diagnosed with influenza including baseline testing of exposed roommates using a multiplex PCR test. The primary team is notified of exposures and makes recommendations regarding prophylaxis. Retrospective review of patients considered exposed to influenza during three seasons was performed. Information on spatial overlap, prophylaxis, and viral testing was extracted.