unaffected infants or after developing severe RSV-related disease. We describe the cumulative incidence (CI) of AW among hospitalized/ambulatory neonates/infants/toddlers after RSV/bronchiolitis infection diagnosis, in a large clinical database.

Methods. Using deidentified Optum Integrated commercial claims and electronic medical records, we identified patients (0–<3 years old) with a first clinical diagnosis of RSV/bronchiolitis infection from 01 January 2008–31 March 2016. Patients with a diagnosis of asthma/wheeze/bronchiolitis ≥ 30 days after first RSV/bronchiolitis diagnosis were excluded. Three cohorts were created with 1/3/5 years of follow-up time required, respectively. Patients were grouped by specific high-risk factors (HRF+/-), including pre-term births and predefined pre-existing disease. Descriptive statistics are reported with comparisons made by logistic regression analyses.

Results. 9,811/4,524/1,788 patients with RSV/bronchiolitis infection and HRF+ were included in the 1/3/5-years follow-up cohorts. 14.9%/28.2%/36.3% had AW events by the end of follow-up in the three cohorts. 6.5%/6.9%/5.8% were hospitalized for RSV/bronchiolitis. 3,030/1,378/552 patients with RSV/bronchiolitis infection and HRF+ were included in the 1/3/5-years follow-up cohorts. 18.1%/32.9%/37.9% had AW events by the end of follow-up in the three cohorts. 11.4%/11.1%/11.6% were hospitalized for RSV/bronchiolitis. The CI rates of AW in the 1/3/5-year HRF+/-cohorts stratified by hospitalized for RSV/bronchiolitis Y/N are shown in Figure 1. Logistic regression confirmed that hospitalization for RSV/bronchiolitis was associated with an increased (P < 0.05) likelihood of AW, for HRF+ and HRF− patients at each follow-up year.

Conclusion. Thirty-eight percent of RSV/bronchiolitis infants/neonates/toddlers HRF+, and 36% among infants/neonates/toddlers HRF−, developed AW in the 5 years after first RSV/bronchiolitis diagnosis. RSV/bronchiolitis hospitalization was associated with a significantly increased risk of AW development in 1/3/5 years of follow-up; confirming previous observational study results.

Disclosures. V. Wyffels, Janssen: Employee, Salary. M. Smuldres, SmartAnalyst: Consultant, Consulting fee. S. Gavart, Janssen: Employee, Salary. D. Mazumder, SmartAnalyst: Consultant, Consulting fee. R. Tyagi, SmartAnalyst: Consultant, Consulting fee. N. Gupta, SmartAnalyst: Consultant, Consulting fee. R. Fleischhackl, Janssen: Employee, Salary.

718. Viral Coinfection and Nasal Cytokines in Children with Acute Bacterial Sinusitis (ABS) Santiago Lopez, MD1; Judith M. Martin, MD2; Monika Johnson, BS3; John V. Williams, MD4; and Nader Shaikh, MD1; Pediatrics, Children’s Hospital of Pittsburgh of UPMC, Pittsburgh, Pennsylvania, 1Department of Pediatrics, Children’s Hospital of Pittsburgh, Pittsburgh, Pennsylvania, 2Children’s Hospital of Pittsburgh of UPMC, Pittsburgh, Pennsylvania, 3Children’s Hospital of Pittsburgh, Pittsburgh, Pennsylvania, 4Children’s Pittsburgh of UPMC, Pittsburgh, Pennsylvania

Session: 69. Respiratory Infections: Viral Thursday, October 4, 2018: 12:30 PM

Background. ABS is one of the most common infections in childhood leading to an increased need for antibiotics but remains a clinical challenge. Laboratory testing does not aid in diagnosis and there are no predictors to identify those who will respond to therapy or develop complications. Thus, the tools to diagnose and manage ABS remain limited. Initial viral infection predisposes to development of ABS. However, there is poor understanding of the contribution of viral infection to pathogenesis, rate of complications, or the immune response to ABS. The objective of this study was to define bacterial upper airway colonization, viral co-infection and cytokine response in the upper airway during ABS.

Methods. In the context of an ongoing larger prospective clinical study, children were enrolled who were diagnosed with ABS using standardized clinical criteria. Nasopharyngeal (NP) samples were processed for bacterial culture for S. pneumoniae, H. influenzae, S. pyogenes and M. catarrhalis; real-time PCR viral testing and cytokine measurement by qPCR. We correlated these findings with clinical symptoms at the time of presentation.

Results. Of 184 enrolled children (median age 4.9 years), 134 (72.8%) had a positive bacterial culture for potentially pathogenic bacteria and 50 (27.2%) had growth of normal flora. A total of 129 (70.4%) subjects tested positive for a virus. The most common viruses detected were rhinovirus (n = 86) followed by influenza virus (n = 23) and adenovirus (n = 21). A total of 102 patients (70.4%) had both a positive pathogenic bacterial culture and viral detection. Patients who had a bacterial pathogen plus a viral detection had a significantly higher expression of IL-6, IL-8 and IL-25 (P < 0.001). Univariable analysis did not confirm no correlation between clinical presentation with viral and/or cytokine expressions.

Conclusion. Children meeting clinical criteria for ABS and a NP swab with a pathogenic bacteria plus viral detection demonstrated higher expression of inflammatory cytokines compared with subjects whose culture had normal respiratory flora.

Disclosures. J. V. Williams, Quidel: Board Member, Consulting fee. GlaxoSmithKline: Consultant, Consulting fee.

719. The Respiratory Pathogen Panel and Antibiotic Utilization in the Emergency Department Daniel Taupin, MD1; Anna Stachel, MPH, CIC2; Dan Ding, MA3; Sarah Hochman, MD4; and Michael Phillips, MD5; NYU Langone Medical Center, New York, New York, 6Infection Prevention and Control, NYU Langone Medical Center, New York, New York

Session: 69. Respiratory Infections: Viral Thursday, October 4, 2018: 12:30 PM

Background. The multiplex polymerase chain reaction respiratory pathogen panel (RPP) is used frequently in emergency departments (EDs) for the rapid identification of viruses and atypical bacteria of the respiratory tract. Its clinical value is unclear, as numerous studies have demonstrated that its use has a limited impact on antibiotic prescribing. We aimed to describe the relationship between RPP results and antibiotic prescribing rates for ED patients in our large academic medical center.

Methods. We retrospectively analyzed the charts of 1,061 patients aged 18–90 who were treated and released from two EDs from January 1, 2015 to January 31, 2018 and underwent RPP testing. Patients with evidence of bacterial infection were excluded based on RPP detection of atypical bacteria and microbiological analysis of blood, urine, wound, and sputum specimens. The results of the RPP and the rates of subsequent respiratory pathogen-directed antibiotic prescribing (including ED and outpatient pharmacy orders) were compared.

Results. Antibiotic prescription rates were 21.5% in patients who tested negative for any respiratory virus, compared with 14.5% in patients who tested positive (OR 0.70, P = 0.01). When positive RPPs were subdivided based on virus type (influenza and non-influenza) and compared with negative RPPs, only influenza detection was associated with a significant reduction in antibiotic prescriptions (Table 1).

Conclusion. In our study population, the presence of a respiratory virus detected by the RPP was correlated with a significant decrease in antibiotic prescribing. This effect was largely driven by influenza detection. This demonstrates that at our institution, the RPP may have a role in reducing unnecessary antibiotic utilization, but providers need further guidance in the interpretation of non-influenza respiratory virus positivity.

Table 1. Antibiotic Prescription Rates by RPP Result, Subdivided by Virus Type

RPP Result | N | No. of Patients | Given Antibiotics | Odds Ratio (95% CI) | P-value
--- | --- | --- | --- | --- | ---
Negative | 628 | 135 (21.5%) | Reference
Positive | 433 | 63 (14.5%) | 0.70 (0.56–0.88) <0.01
Influenza* | 169 | 20 (11.8%) | 0.49 (0.30–0.81) <0.01
Non-influenza virus(es) | 264 | 43 (16.3%) | 0.71 (0.49–1.04) 0.08

*Includes RPPs that were positive for multiple viruses if influenza was present.

Disclosures. All authors: No reported disclosures.

720. Respiratory and Nonrespiratory Complications Among Patients Hospitalized with Influenza, FluSurv-NET, 2016–2017 Shikha Garg, MD, MPH1; Charisse Nitura Cummings, MPH1; Alissa O’Halloran, MSPH1; Pam Daily Kirley, MPH2; Rachel Herlihy, MD MPH1; Kimberly Yousefy-Hinodes, MPH1; CPH2; Maya Monroe, MPH3; Seth Eckel, MPH3; Melissa McMahon, MPH3; Kathy Anggads, MPH4; Alison Muse, MPH1; Nancy M. Bennett, MD1; Laurie Billing, MPH5; Ann Thomas, MD, MPH1; H. Kepp Talbot, MD, MPH1; Andrea George, MPH1; Evan J. Anderson, MD1 and Carrie Reed, DSc, MPH1; Centers for Disease Control and Prevention, Atlanta, Georgia, 2Influenza Division, Centers for Disease Control and Prevention, Atlanta, Georgia, 3California Emerging Infections Programs, Oakland, California, 4Colorado Department of Public Health and Environment, Denver, Colorado, 5Connecticut Emerging Infections Program, Yale School of Public Health, New Haven, Connecticut, 6Maryland Department of Health and Mental Hygiene, Baltimore, Maryland, 7Communicable Disease Division, Michigan Department of Health and Human Services, Lansing, Michigan, 8Minnesota Department of Health, St Paul, Minnesota, 9New Mexico Emerging Infections Program, University of New Mexico, Albuquerque, New Mexico, 10New York State Department of Health, Albany, New York, 11Emerging Infections Program, New York, New York, 12Ohio Department of Health, Columbus, Ohio, 13Oregon Public Health Division, Portland, Oregon, 14Infectious Diseases, Vanderbilt University Medical Center, Nashville, Tennessee, 15Salt Lake County Health Department, Salt Lake City, Utah, 16Emerging Infections Program, Atlanta Veterans Affairs Medical Center, Atlanta, Georgia

Session: 69. Respiratory Infections: Viral Thursday, October 4, 2018: 12:30 PM

Background. Influenza is most commonly associated with respiratory complications. Nonrespiratory complications occur frequently among patients hospitalized with influenza. We used data from the Influenza Hospitalization Surveillance Network (FluSurv-NET) to describe complications recorded on discharge summaries of patients hospitalized with influenza.

Methods. We included children (0–17 years) and adults (≥18 years), who residing within a FluSurv-NET catchment area and with laboratory-confirmed