admission were included in the analysis. cTnI above upper limit of normal (≥0.03 ng/dL) was defined as elevated. Demographic and clinical data were abstracted from chart review. Outcomes were myocardial infarction (MI) on admission, 30- and 90-day re-admissions due to cardio-respiratory illness and 30- and 90-day all-cause mortality. For the univariable analysis of baseline factors and outcomes we used unpaired t-tests for continuous variables and χ² or Fisher exact test for categorical variables as appropriate.

Results. Ninety-four of 332 cases were vPCR positive and cTnI levels on admission were available in 86. Demographics and comorbidities were all similar for the high (N = 42) and normal (N = 44) cTnI groups. Compared with normal cTnI group, those with high cTnI had similar 30- and 90-day re-admission rates (14% vs. 9%, P = 0.4, and 26% vs. 16%, respectively, P = 0.2). However, 30- and 90-day mortality rates were higher for high cTnI patients (10% vs. 0% and 19% vs. 5%, P < 0.03).

Conclusion. Troponin elevation on patients with a documented viral respiratory infection is associated with higher 30- and 90-day mortality rates. Troponin levels should not be dismissed as a trivial finding in this group of patients. Further work on its pathogenesis is warranted.

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Session: 69. Respiratory Infections: Viral
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Background. The 2013-2014 influenza season was characterized by high levels of influenza A(H3N2) and influenza B viruses in the Northern and Southern Hemispheres, respectively. The H3N2 viruses had been circulating in the Northern Hemisphere since early 2013, while the seasonal B viruses had been circulating in the Southern Hemisphere since late 2012. The WHO recommended influenza vaccine contained A/H1N1pdm09, B/Brisbane/60/2010, and B/Phuket/3073/2013. The influenza season was characterized by increased respiratory illness and hospitalization rates. Vaccine effectiveness was assessed using data from the National Health and Nutrition Examination Survey (NHANES) and the National Influenza Surveillance System (NIS).

Methods. Vaccine effectiveness was estimated using a case-control study design. Laboratory-confirmed cases of influenza were identified from the NIS and confirmed cases of pneumonia were identified from the NHANES. Data were obtained from participating states and enrolled participants were interviewed in a computer-assisted telephone interview. Participants were matched by age, sex, and date of illness and cases were assigned a vaccine effectiveness estimate by calculating the ratio of the odds of influenza among persons vaccinated compared to those not vaccinated.

Results. Vaccine effectiveness was estimated by calculating the ratio of the odds of influenza among vaccinated compared to unvaccinated persons. Vaccine effectiveness was estimated at 76.9% (95% CI 63.8%–86.4%) for A/H1N1pdm09, 77.1% (95% CI 62.7%–88.1%) for B/Brisbane/60/2010, and 87.2% (95% CI 77.7%–93.1%) for B/Phuket/3073/2013. Vaccine effectiveness was not significantly different between age groups and by sex. Vaccine effectiveness was higher for persons receiving influenza vaccine during the season compared to those receiving vaccine prior to the season.

Conclusion. Vaccine effectiveness was estimated at 76.9% for A/H1N1pdm09, 77.1% for B/Brisbane/60/2010, and 87.2% for B/Phuket/3073/2013. Vaccine effectiveness was not significantly different between age groups and by sex. Vaccine effectiveness was higher for persons receiving influenza vaccine during the season compared to those receiving vaccine prior to the season.

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74.6. Antibiotic Therapy for Community-Acquired Pneumonia: A Systematic Review and Network Meta-Analysis of Randomized Trials

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Background. Antibiotic resistance for community-acquired pneumonia (CAP) is one of the top causes of illness lost globally. The optimal empiric antibiotic therapy regimen is uncertain. Randomized controlled trials (RCTs) provide useful information about relative anti- biotic effectiveness.

Methods. We systematically searched Medline, EMBASE, and CENTRAL for RCTs comparing at least two antibiotic regimens in adults with CAP, from March 17, 2017. We performed a systematic review and network meta-analysis and network meta-regression using a Bayesian framework. We used GRADE to assess certainty in the effect estimates.

Results. From 18,056 citations, we included 303 RCTs. Most studies (69.9%) were not blinded. All studies had low global heterogeneity (I² 0%). There were 26,423 participants included in the analysis of mortality and 30,559 for treatment failure. Seven hundred and twenty-six (2.9%) participants died. Patients randomized to third generation cephalosporins alone had higher mortality than those randomized to early generation fluoroquinolones (risk ratio [RR] 2.08, 95% credible interval 1.17–3.90), later generation fluoroquinolones (RR 2.32, 1.44–4.26), and cephalosporin-fluoroquinolone combinations (RR 3.21, 0.99–12.19). Participants who were randomized to a cephalosporin plus macrolide were less likely to die than those who received a third generation cephalosporin alone (OR 0.47, 0.21–0.99). The evidence was similar for treatment failure. B-lactam plus β-lactamase inhibitors (e.g., piperacillin–tazobactam), early generation cephalosporins, and daptomycin appeared to confer a higher risk of mortality and/or treatment failure than most other antibiotic regimens including third-generation cephalosporins alone. For key comparisons, the GRADE quality of evidence was low or moderate.

Conclusion. In patients with CAP, an antibiotic regimen that includes a fluoroquinolone may possibly reduce mortality; it is associated with a lower risk of treatment failure compared with β-lactams (with or without a β-lactamase inhibitor) and cephalosporins alone. High quality, blinded and pragmatic randomized evidence would be helpful to increase certainty in the evidence.

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74.7. The Impact of a Positive Respiratory Viral Panel on Hospitalized Adult Patients with Negative Rapid Influenza Testing at an Academic Tertiary Care Facility: A Matched Cohort Study

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Background. Multiplex nucleic acid amplification assays (NAATs) are increasingly used to evaluate respiratory illnesses. Viral diagnosis has the potential to change clinical management; specifically, the use of antibiotics. However, the assays are expensive, and their effect on clinical management is unknown. This study evaluated the incremental impact of a multiplex respiratory viral panel after negative rapid influenza testing.

Methods. We completed a retrospective review of all adult patients with respiratory viral panel (RVP; GenMark) and/or rapid influenza or RSV/fluorescent PCR tests (PCR; Cepheid Xpert) collected within 48 hours of admission to non-ICU, inpatient units from September 1, 2015 to April 15, 2016. We matched hospitalizations with a positive RVP simultaneously with or following negative PCR testing (PCR–RVP+) 1:1 with patient encounters with negative rapid PCR testing only (PCR−). Matching the referent RGP cohort occurred without replacement based on age (≥10 years), sex, race, season of testing (≥50 days), and any respiratory viral test in the prior 30 days. The primary outcome was a change in management, defined as antimicrobial de-escalation (discontinuation, switch from intravenous to oral administration, and/or narrowing of spectrum), antiviral initiation, and/or change in isolation precautions.

Results. During the study period, there were 153 PCR–RVP+ patient encounters and 524 with PCR− testing only from which we identified 134 matched pairs. In the matched cohort, the median age was 60 years (IQR: 41–73), 47.8% were female, and 34.3% were non-White. Respiratory viral testing was associated with management change in 3.7% of PCR− and 23.9% of PCR–RVP+ patients (risk difference 20.1%, 95% CI 12.2–28.0%). Antimicrobial de-escalation did not occur after testing for any PCR− patients but did occur for 15.7% of PCR–RVP+ patients (95% CI 9.5–21.8%).

Conclusion. Among patients with negative rapid influenza testing, a subsequent or simultaneous positive RVP was associated with a higher frequency of antibiotic de-escalation. This suggests multiplex NAATs could play a role in improving antimicrobial de-escalation in the respiratory ward. This work was supported by the National Institute of Allergy and Infectious Diseases.

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