POSTER ABSTRACTS

238. Comparative Evaluation of Diatherix Target Enriched Multiplex Polymerase Chain Reaction and BioFire FilmArray in the Detection of Viral and Bacterial Respiratory Pathogens

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Background. The speed and efficiency of etiologic determination of influenza-like illness (ILI) has been greatly improved with multiplex diagnostic assays. We conducted a comparative evaluation of 2 multiplex assays with coverage of viral and bacterial respiratory pathogens.

Methods. Specimens (n = 403) were derived from an observational study of febrile ILI among otherwise healthy subjects at 5 US military hospitals from 2009 to 2014. Specimens were first tested by single-plex polymerase chain reaction (PCR) for influenza. Specimens were then tested by 2 assays: (1) target-enriched multiplex PCR (TEM-PCR; Diatherix Laboratories, Inc, Huntsville, AL) and (2) BioFire FilmArray Respiratory Panel (FilmArray; BioFire Diagnostics, Salt Lake City, UT). The panels have 8 viral (human rhinovirus/enterovirus [HRV/EV], influenza A, influenza B, coronavirus, respiratory syncytial virus (RSV), parainfluenza, human metapneumovirus [hMPV], adenovirus [ADV]) and 3 bacterial (*Mycoplasma pneumoniae, Bordetella pertussis*, and *Chlamydophila pneumoniae*) pathogens in common. Specimens were selected based on availability, and tests were performed in separate laboratories. Kappa (κ) coefficients and 95% confidence intervals (CIs) were computed.

Results. The multiplex evaluation of influenza-PCR-positive specimens (n = 34) was incomplete and thus excluded from analysis. Of the 308 specimens with complete results, TEM-PCR and FilmArray detected at least 1 viral pathogen among 197 (64.0%) and 198 (64.3%) specimens, respectively. The frequency of viral codetection (i.e. 2 or more viral pathogens in a specimen) was 7.1% for TEM-PCR and 6.5% for BioFire FilmArray (p = 0.67; McNemar's test). Only 1 (0.3%) specimen was positive for *C pneumoniae* by FilmArray, and neither assay detected *B pertussis*. Pathogen-specific agreement between the panels was as follows: HRV/EV (κ = 0.75; 95% CI, 0.66–0.84), coronavirus (κ = 0.91; 95% CI, 0.86–0.97), RSV (κ = 0.85; 95% CI, 0.77–0.94), parainfluenza (κ = 0.97; 95% CI, 0.91–1), hMPV (κ = 0.85; 95% CI, 0.74–0.96), ADV (κ = 0.21; 95% CI, −0.15 to 0.58), and *M pneumoniae* (κ = 0.72; 95% CI, 0.42–1).

Conclusion. These results reveal a high degree of concordance between Diatherix Laboratories TEM-PCR and BioFire FilmArray in the detection of viral respiratory pathogens.

Disclosures. **L. Malone**, Diatherix Laboratories, LLC: Employee, Salary; **E. Grigorenko**, Diatherix Laboratories, LLC: Employee, Salary; **D. Stalons**, Diatherix Laboratories, LLC: Employee, Salary

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