

**O0449 Impact of the FILMARRAY pneumonia panel on antimicrobial stewardship in pneumonia patients**

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**Background:** Guidelines recommend that patients with pneumonia be treated according to the results of microbiologic studies performed on respiratory samples, rather than empirically. The FilmArray<sup>®</sup> (bioMérieux) Pneumonia Panel (FA-PP) is a diagnostic device based on multiplex PCR analysis allowing fast semi-quantitative detection of a wide range of respiratory pathogens and resistance markers. Our objective was to assess its potential impact on optimization of antibiotics in pneumonia.

**Materials/methods:** Prospective cohort study in four wards (internal medicine, emergency department, intensive care unit [ICU], thoracic surgery) of a 1500-bed university hospital. Between July and October 2018, infectious diseases (ID) physicians prospectively screened respiratory specimen sent to the laboratory. Patients meeting IDSA 2016 criteria of pneumonia were included. Respiratory specimens were tested with both standard laboratory techniques and FA-PP. We collected demographic data, microbiological results and timing of analyses. Two senior physicians (one ID specialist and one ICU physician), independently assessed clinical cases and, based on the results of the FA-PP, agreed on a preferred antibiotic choice that was compared to antibiotics actually administered to the patient.

**Results:** We screened samples from 334 patients and included 63 episodes of pneumonia (in 61 patients): 40 episodes of hospital-acquired [HAP] and 23 community-acquired [CAP] pneumonia, 37 in ICU and 26 out of ICU. Median age was 64 years (range 27-88), 46 patients were male. Samples were collected either by endotracheal aspiration, (36/63) or sputum induction (27/63). Most frequent microorganisms detected by FA-PP were *Pseudomonas aeruginosa* in HAP (11/40), *Staphylococcus aureus* (5/23) and *Streptococcus pneumoniae* (4/23) in CAP. Overall, results of the FA-PP would have led to an early switch of antibiotics in 50/63 episodes (79%): de-escalation in 35/63 (55%) and escalation in 15/63 (24%). Early switch would have been appropriate in 42/50 cases (84%): 33/35 for de-escalation and 9/15 for escalation. Early de-escalation of the antibiotic regimen, based on the FA-PP results combined with advice from an antimicrobial stewardship expert, would have saved 133 days of broad-spectrum antibiotics.

**Conclusions:** FA-PP has the potential to optimize antimicrobial treatment and reduce inappropriate use of broad-spectrum antibiotics in pneumonia patients. These promising results must be confirmed by randomized studies.

