CAP and HCAP are different? An unresolved question

We read with interest the recent article by Polverino *et al*.[1] Data of this study show a very low incidence of multidrug-resistant pathogens (MDR) in patients with community-acquired pneumonia (CAP) and healthcare-associated pneumonia (HCAP); authors conclude that microbial aetiology of HCAP does not differ from CAP, and that patients with HCAP in Spain do not need nosocomial antibiotic coverage. Surprisingly, the reported data conflict with a recent prospective study by Giannella *et al*,[2] conducted in 72 internal medicine wards in Spain, and enrolling 1002 patients; in this study *Pseudomonas aeruginosa* and methicillin-resistant *Staphylococcus aureus* caused 17% and 12.3% of HCAP, respectively; moreover, HCAP was an independent risk factor for pneumonia due do difficult-to-treat micro-organisms.

How can these differences be explained?

The substantial differences observed in two large multicentric populations of a same country may be indicators of two important problems: (1) since most patients

of the study of Polverino *et al* were hospitalised in pneumology wards this may introduce a selection bias in term of epidemiology, diagnostic procedures and outcomes; patients hospitalised in internal medicine wards may be more frequently affected by multiple comorbidities and more likely to be repeatedly exposed to the healthcare setting;[3] (2) in both studies routine sampling included blood cultures, urine antigens and sputum cultures but patients were not prospectively assigned to invasive diagnostic procedures like bronchoscopy with bronchoalveolar lavage cultures; as matter of fact, an aetiology was obtained in a minority of cases (34.9% and 26%, respectively), and a large proportion of patients with HCAP and CAP remained without diagnosis. The importance of an aggressive diagnostic approach was demonstrated by Lacroix *et al*,[4] who, using the early mini bronchoalveolar lavage in the diagnosis of HCAP, identified a microbial aetiology in 46.3% of cases, and when the patient did not receive antibiotic therapy before the procedure pathogens were identified in 72.6% of cases (16% of cases had a MDR aetiology). This experience suggests that an aggressive diagnostic approach may be more accurate to assess aetiology of CAP and HCAP.

Since data about microbiology of CAP and HCAP are contradictory, probably we need future interventional studies to define the role of MDR pathogens in patients with community-onset pneumonia. Until then, an individualised risk assessment for MDR organisms appears reasonable in patients fulfilling HCAP definition,[5] to determine which patients presenting with pneumonia may require broad-spectrum antibiotic coverage.

Marco Falcone, Alessandro Russo, Mario Venditti

Department of Public Health and Infectious Diseases, "Sapienza" University of Rome, Rome, Italy

Correspondence to Dr Marco Falcone, Department of Public Health and Infectious Diseases, Policlinico Umberto I, "Sapienza" University of Rome, Viale del Policlinico 155, Rome 00161, Italy; marcofalc@libero.it

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