

1239. Low Co-infection Rate in Children With Community-Acquired Pneumonia in Spain

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Background. Areas of priority research include defining the epidemiology of community-acquired pneumonia (CAP) after the development of the molecular diagnostic tests. Previous studies have reported high rates of combined infection (8-51%). Our objective is to describe the etiology of CAP in hospitalized children, with a focus on the incidence of co-infections.

Methods. From April 2012 until March 2015, hospitalized children with CAP were recruited in two hospitals of Madrid, Spain. An extensive microbiological work-up was performed, including: blood cultures, *S. pneumoniae* by PCR in blood,

S. pneumoniae antigen in urine, paired serum for *M. pneumoniae*, *C. pneumoniae* and *L. pneumophila*, and PCR for 16 viruses, *M. pneumoniae* and *C. pneumoniae* in nasopharyngeal aspirate (NPA). Culture and *S. pneumoniae* antigen in pleural fluid was added if thoracentesis was performed. Organisms were considered the causative agents of pneumonia in the following situations: any bacteria in blood culture or *S. pneumoniae* by PCR in blood, urinary *S. pneumoniae* antigen plus C-reactive protein >100 mg/L and/or procalcitonin >1.5 ng/mL, seroconversion to any agent, presence of nucleic acids of *M. pneumoniae*, *C. pneumoniae*, RSV, hMPV, ADV, PIV or flu virus on NPA, and any bacteria on culture or *S. pneumoniae* antigen detection in pleural fluid. Following recent recommendations, rhinovirus, enterovirus, bocavirus and coronavirus were excluded as causality, if detected.

Results. We recruited 151 patients. They had a median age of 41 months (range 2–201), and 53% were male. Two-thirds were under 60 months. A total of 93% were fully immunized against Hib, and 64% of them had received one or more dose of PCV13. One or more pathogens were documented in 66%: typical bacteria in 24 (16%, 23 [90%] of them *S. pneumoniae*), atypical bacteria in 31 (20%) (28 of them *M. pneumoniae*) and significant viruses in 60 (40%). Of note, half of the patients with *M. pneumoniae* were under 60 months. There were only 19 patients (13%) with co-infection with more than an agent. If we included non-significant viruses, 81% of patients had more than one organism identified and the co-detection rate raised up to 31%.

Conclusion. Viruses are the main etiological agents of CAP in children. Considering significant etiological agents only, the co-infection rate was not as high as reported elsewhere. *M. pneumoniae* is not uncommon in children under 5 years.

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