

Virus and Mycoplasma pneumoniae are the main etiological agents of community-acquired pneumonia in hospitalized pediatric patients in Spain

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Abstract

Objetives. To perform a description of the etiology of hospitalized children with community-acquired pneumonia (CAP) in Spain and analyze predictors related to etiology. **Hypothesis.** The different etiological groups of pediatric CAP are associated to different clinical, radiographic and analytical data. **Design.** Observational, multi-center, prospective study. **Patient selection.** Patients from 1 month to 17 years admitted because of CAP from April 2012 to May 2019. **Methods.** An extensive

microbiological workup was done. Clinical, radiographic and analytical parameters were analyzed in order to differentiate viral, atypical bacteria (AB) and typical bacteria (TyB) pneumonia. Results. 495 children were enrolled. At least one likely causative pathogen was identified in 262 (52.9%). Pathogenic viruses in 155/262 (59.2%), AB in 84/262 (32.1%) and TyB in 40/262 (15.3%). Consolidation was found in 89/138 (64.5%) CAP attributed to virus only, in 74/84 (88.1%) of CAP attributed to AB and 40/40 (100%) of CAP attributed to TyB. Para-pneumonic pleural effusion (PPE) was found in 112/495 (22.6%) patients, 61/112 (54.5%) with a likely causative pathogen: virus 12/61 (19.7%), AB 23/61 (37.7%) and TyB 26/61 (42.6%). Viral etiology was significantly more frequent in younger patients and those with lower oxygen saturation, wheezing, no-consolidation and higher lymphocyte counts. Patients with AB were significantly more likely to have more days of fever at admission and a higher rate of use of antibiotics before admission. Conclusions. Viruses and AB are the main cause of pediatric CAP in Spain. Wheezing, younger age and no-consolidation on the X-ray support viral etiology. Viruses and AB can also cause PPE. The use of antibiotic in pediatric CAP can be restricted.

Madrid, Spain, June 26, 2021

To the Editorial Board of Pediatric Pulmonology,

Dear Doctors,

I submit you the manuscript titled “Virus and *Mycoplasma pneumoniae* are the main etiological agents of community-acquired pneumonia in hospitalized pediatric patients in Spain” as an Original Study for consideration for publication in the Journal.

The paper is a study about etiology of community-acquired pneumonia in children and adolescents in three regions of Spain with a very extensive microbiological workup. We also analyzed different clinical, radiographical and analytical parameters associated with the three etiological groups: viruses, atypical bacteria and typical bacteria. We try with this work improve the use of antibiotics in pediatric community-acquired pneumonia.

All authors have seen and approved the manuscript, contributed significantly to the work. The manuscript has not been previously published nor is not being considered for publication elsewhere.

We would bear the cost of reproducing the color figures and tables.

Sincerely,

Enrique Otheo

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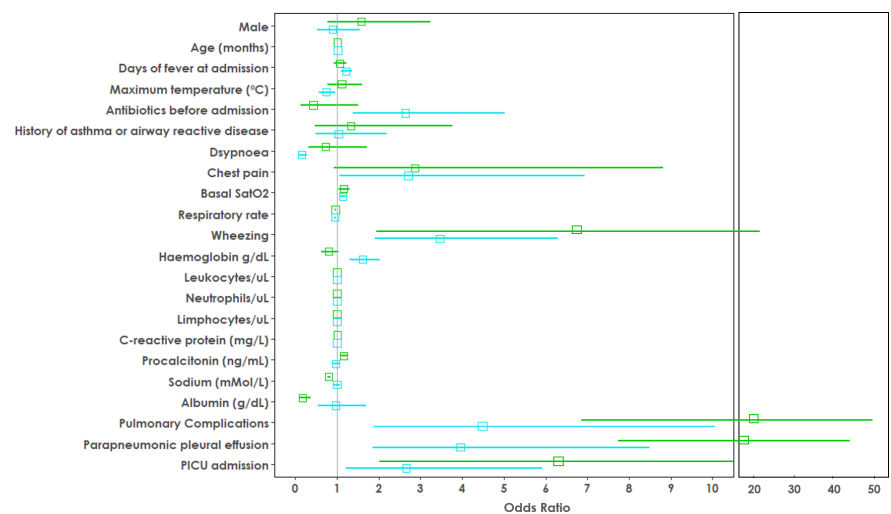
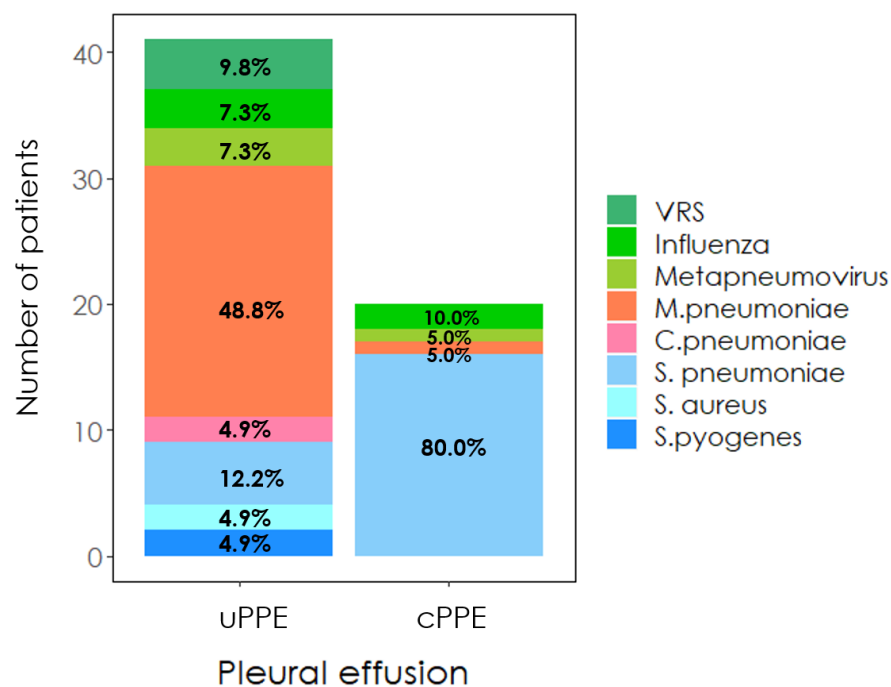
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E-Figure 1. Incidence of complicated and uncomplicated pleural parapneumonic effusion (cPPE and ucPPE) and association with the etiological groups.

