

# RESPIRATORY VIRUS DETECTIONS AND BACTERIAL INFECTIONS AMONG NON-HOSPITALIZED CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA TREATED WITH AMOXICILLIN: A PROSPECTIVE COHORT

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**Background:** Community-acquired pneumonia (CAP) imposes big morbidity and mortality in children and may be caused by several pathogens. Amoxicillin is the first-choice antibiotic to treat empirically non-hospitalized children with CAP.

**Aims:** We described the frequency of virus detections and bacterial infections in non-hospitalized children with CAP treated with amoxicillin and compared the amoxicillin substitution rate due to treatment failure among children with or without typical bacterial infection.

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**Methods:** Children aged 2-59 months with non-severe CAP (respiratory complaints plus radiographic pulmonary infiltrate/consolidation) were enrolled in a prospective cohort, in Salvador, Brazil.

From 820 patients recruited in a clinical trial (ClinicalTrials.gov Identifier NCT01200706), 705 (86.0%) had nasopharyngeal aspirates (NPA) and serum collected upon admission and serum collected 2-4 weeks apart. NPAs were tested for 16 respiratory viruses by PCRs and bacterial infections were investigated by serology. Follow-up assessments occurred at 2, 5, and 14 days after enrolment.

**Results:** Respiratory viruses were detected in 643 (91.2%) cases, typical and atypical bacterial infections being diagnosed in 166 (23.5%) and 141 (20.0%), respectively. Typical bacterial infections comprised pneumococcal (18.3%), *Haemophilus influenzae* (5.8%), and *Moraxella catarrhalis* (2.7%) infections. The majority of the cases (55.6%) had only virus detection. Amoxicillin was substituted in 4 (0.6%) and in 19 (2.7%) patients due to adverse event or clinical failure, respectively.

There was no significant difference when the amoxicillin substitution rate due to clinical failure was compared among children with or without typical bacterial infection (P=0.2):

Amoxicillin substitution due to failure	Typical bacterial infection		Total
	Yes	No	
Yes	7 (4.3%)	12 (2.2%)	19 (2.7%)
No	157	525	682
Total	164	537	701

**Conclusions:** Respiratory viruses were detected in almost all cases and typical bacterial infection was found in approximately one fourth of them. It is crucial to distinguish children with from children without typical bacterial infection in order to rationalize antibiotic use.



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