

TITLE: IDENTIFICATION AND QUANTIFICATION OF *CHLAMYDIA PNEUMONIAE* AND *STAPHYLOCOCCUS AUREUS* IN CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA USING QPCR

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ABSTRACT:

Community-acquired pneumonia (CAP) is associated with high rates of morbidity and mortality in developing countries, especially among children under 5 years of age. After the worldwide vaccination against *Streptococcus pneumoniae* and *Haemophilus influenzae*, there was a reduction in the number of pneumonia cases caused by these bacteria. However, the incidence of others bacteria, such as *Chlamydia pneumoniae* (*Cpn*) and *Staphylococcus aureus* (*S. aureus*) in the CAP remains poorly understood. To identify and quantify *Cpn*-DNA and *S. aureus*-DNA in respiratory samples of children with CAP and healthy, as well as to make an epidemiological characterization of them. It was selected 251 children in which 150 were patients with CAP and 101 healthy children as controls, between 2014 and 2016 in two pediatric hospitals. Samples were collected from the nasopharynx and clinical and epidemiological data were obtained from patients and controls through an applied questionnaire. After DNA extraction from the samples, *Cpn*-DNA and *S. aureus*-DNA were identified and quantified by real-time polymerase chain reaction (qPCR). It was observed that malnutrition, low birth weight, premature birth, incomplete vaccination, incomplete prenatal care and maternal schooling were risk factors associated with CAP. In addition, *Cpn*-DNA and *S. aureus*-DNA were identified in 65.1% and 36.2% of the nasopharyngeal samples of PAC patients, respectively. Taking into account the cutoff value of 2×10^4 copies of *Cpn*-DNA / mL and *S. aureus*-DNA / mL as suggestive for acute infection, it was observed that 3.3% of PAC patients were infected by *Cpn* and 2.6% by *S. aureus*. A high frequency of the main risk factors for CAP was observed in the study population. As well, a high presence of *Cpn* and *S. aureus* were observed in children with CAP.

Keywords: Pneumonia, *Chlamydia pneumoniae*, *Staphylococcus aureus*, qPCR.

Development Agency: Fundação de Amparo a Pesquisa no Maranhão (FAPEMA).