

Role of *Mycoplasma pneumoniae* in the exacerbation of childhood asthma in Sri Lanka

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Asthma is a major public health concern, particularly in children. Exacerbation of asthma (EOA) is life-threatening and respiratory infections (RIs) play a key role. Pediatric RIs are empirically treated with macrolides aiming *M. pneumoniae*. Although EOA and *M. pneumoniae* have been reported in many countries, no published data on them is in Sri Lanka. The present study aimed to identify the role of *M. pneumoniae* in EOA in children in Sri Lanka. A case-control study was conducted in the pediatric unit of North Colombo Teaching Hospital, Sri Lanka involving children between 3-15 years. Cases-children with EOA. Controls-children with stable asthma without exacerbation. Each group consisted of 100 children. Sputum/throat swabs were tested for *M. pneumoniae* using GeneProof *M. pneumoniae* RT-PCR kit, which targets community-acquired respiratory distress syndrome (CARDS) toxin. Age distribution-80% of cases and 87% of controls were 5-10 years. Males and females were equally distributed in cases while it was 47% and 53% respectively in the control group. Of the samples, 78% were sputum and 22% were throat swabs in cases and 100% were throat swabs in controls. Macrolides were used to treat 42% of cases. As per *M. pneumoniae* RT-PCR data, 1/100 were positive from cases and none was positive from the control group. *M. pneumoniae* was uncommon in cases (1%) and absent from the control group. Macrolides are used widely in children for RIs aiming *M. pneumoniae*. Yet, it does not seem a major contributing factor to asthma exacerbation in the study cohort. However, a large proportion of cases receiving macrolides may have reduced the detection of *M. pneumoniae*. Empiric use of antibiotics in children with asthma may be better targeted with microbiological screening to inform treatment. Inappropriate use may result in the development of resistance to other common respiratory pathogens.

Keywords: Exacerbation of asthma, *Mycoplasma pneumoniae*, Antibiotic use

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