Chlamydia pneumoniae: Possible Association With Asthma in Children

Chlamydia pneumoniae has been recognized as a common cause of community-acquired pneumonia (CAP) and other acute respiratory infections (ARIs) in various age groups [1]. Lately, the prevalence of *Chlamydia*-associated ARIs has decreased to <1.5% [2], as a result of changes in epidemiology of *C. pneumoniae* and increased specificity of new diagnostic molecular methods. Moreover, *C. pneumoniae* infection may remain undetected as clinicians may not screen the infected population. Indeed, *Chlamydia pneumoniae* has been recently identified as an agent of asthma exacerbation and has been associated with its severity [3–5], thus reinforcing the importance of targeting these patients. In Lausanne, using a duplex real-time polymerase chain reaction (PCR) that detects *C. pneumoniae* and *Mycoplasma pneumoniae* DNA [6], we reported a 0.13% prevalence of *C. pneumoniae*–positive PCRs (2/1583) and identified 1 patient with *C. pneumoniae*–associated asthma, who recovered with antibiotics [7]. Below, we report a case series of *C. pneumoniae* respiratory infections in children.

From 10 September to 5 December 2013, *C. pneumoniae* was detected in upper respiratory tract specimens from 8 children (Table 1). Of these, 5 were admitted for either acute asthma exacerbation or asthmatic bronchitis. All but 2 patients presented with chronic cough without fever or systemic symptoms. These two patients, one with CAP who was coinfected with *M. pneumoniae* (patient 7) and the other one with severe asthma exacerbation who was coinfected with rhinovirus (patient 8), were admitted for severe respiratory distress in the intensive care unit, intubated, and mechanically ventilated. Both patients with severe clinical presentation were confirmed asthmatics. All patients were successfully treated with a macrolide. Interestingly, *C. pneumoniae* infection was detected by chance in 7 patients as a result of the dual format of our PCR, because a *M. pneumoniae* PCR was requested.

In conclusion, this report supports the role of *C. pneumoniae* in asthma exacerbation. Whether *C. pneumoniae*-associated asthma may be cured with antibiotics or will also require steroids remains unknown and may vary from patient to patient. This case series underlines the importance of screening asthmatic children for *C. pneumoniae*. Moreover, our findings suggest that *C. pneumoniae* prevalence is likely underestimated and children with chronic cough, even in absence of fever, should be tested for *C. pneumoniae*.

Note

Potential conflicts of interest. All authors: No reported conflicts.

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Table 1. Baseline Characteristics of Children Identified With *C. pneumoniae*

Patient	Age, y	Sex	Asthmatic Condition	Cough Duration	Fever	ICU[a]	Sample	Copies/mL	Coinfection	Treatment	Treatment Duration
1[b]	7	F	Asthma	Chronic	Yes	No	Throat	1 743 796	No	Clarithromycin	14 d
2	7	M	Asthma	Chronic	Yes	No	Nasal	197 000	No	Clarithromycin	10 d
3[b]	7	M	None	Chronic	No	No	Throat	3100	No	Clarithromycin	10 d
4	6	M	None	Chronic	No	No	Nasal	60	No	Azithromycin	5 d
5[b]	8	M	Asthmatic bronchitis	Chronic	No	No	NP	78 000	No	Clarithromycin	7 d
6[b]	12	F	None	Chronic	No	No	NP	61 000	No	Clarithromycin	7 d
7	7	F	Asthma	Acute	Yes	Yes	NP	170	*Mycoplasma pneumoniae* (570 copies/mL)	Clarithromycin	14 d
8	10	M	Asthma	Acute	Yes	Yes	NP	208	Rhinovirus (13 071 000 copies/mL)	Erythromycin	14 d

Abbreviations: ICU, intensive care unit admission; NP, nasopharyngeal.

[a] Patient 7 was admitted to the ICU for community-acquired pneumonia; patient 8, for a severe asthma exacerbation.

[b] Patient originated from the same eastern region of Vaud canton (nearby Yverdon).

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