



Enfermedades Infecciosas y Microbiología Clínica

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Letter to the Editor

Chlamydia trachomatis pneumonia: An underdiagnosed and potentially serious disease[☆]

Neumonitis por *Chlamydia trachomatis*: una enfermedad infradiagnosticada y potencialmente grave

Dear Editor,

We read with interest the article by Berzosa Sánchez et al. Respiratory infection due to *Chlamydia trachomatis*, four cases report,¹ published in the November issue of your journal. As the authors noted, *C. trachomatis* pneumonia is one of the most common causes of atypical pneumonia in the first few months of life.



Accurate diagnosis is essential, given that, in some cases, symptoms of respiratory failure significant enough to require admission to intensive care (IC) can develop.^{2,3} However, serious *C. trachomatis* infection has not been studied much and is a poorly recognised disease in paediatrics.

In order to assess the severity of this disease, we retrospectively reviewed the medical records of infants diagnosed with *C. trachomatis* pneumonia at our centre in the last 10 years (2010–2019).

We diagnosed a total of eight infants. Their main characteristics are described in Table 1. All were full-term newborns, except for two late preterm infants (35 and 36 weeks). Median age at diagnosis was 48 days (IQR: 28–58), and all cases began between the third and sixth week of life. The mean age of the mothers was 25.5 years (IQR: 22–32), and six of them (75%) were immigrants.

Table 1

Epidemiological characteristics, clinical signs, supplementary tests and treatment.

Patient	1	2	3	4	5	6	7	8
Year of birth	2013	2014	2015	2016	2016	2018	2019	2019
Gestational age (weeks)	35	36	38	37	37	39	38	40
Age on admission (days)	60	29	46	60	52	50	26	28
Sex	F	M	M	M	F	F	M	F
Maternal history								
Mother's age (years)	25	21	14	38	34	26	24	27
Origin	Morocco	Paraguay	Brazil	Spain	Philippines	Spain	Philippines	Philippines
Signs and symptoms								
Rhinorrhoea	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cough	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Difficulty breathing	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Apnoea	No	No	No	No	Yes	Yes	No	Yes
Fever	No	No	Yes	No	Yes	No	No	No
Prior conjunctivitis	No	No	No	Yes	No	Yes	No	Yes
Initial diagnosis	Pertussis-like syndrome	BR	Pertussis-like syndrome	BR	Pertussis-like syndrome	Pertussis-like syndrome	BR	BR
Days of admission	7	24	3	9	6	24	21	10
Days of oxygen therapy	5	26	0	6	0	18	18	9
IC admission	No	Yes	No	No	No	No	No	Yes
Laboratory tests (peak value)								
Neutrophils/ μ l	2,880	5,130	4,340	6,410	6,070	6,660	10,070	7,790
Lymphocytes/ μ l	13,680	9,920	14,760	9,350	15,690	5,770	15,200	6,260
Eosinophils/ μ l	720	3,630	430	663	300	1,180	600	400
Platelets/ μ l	758,000	560,000	531,000	643,000	43,6000	35,8000	200,000	36,6000
C-reactive protein (mg/l)	29.1	67.5	<2.9	<2.9	36.7	1.9	56.2	27.5
Diagnosis								
Nasopharyngeal aspirate PCR	Positive	Positive	ND	Positive	Positive	Positive	Positive	Positive
Urine PCR	ND	ND	Positive	ND	ND	Positive	Negative	Positive
Conjunctival PCR	ND	ND	ND	ND	ND	Negative	ND	Positive
Treatment	ERY	AZT	ERY	AZT	AZT	AZT	AZT	AZT

AZT: azithromycin; BR: bronchiolitis; IC: intensive care; ERY: erythromycin; F: female; M: male; ND: not done; PCR: polymerase chain reaction.

DOI of original article: <https://doi.org/10.1016/j.eimc.2020.12.009>

[☆] Please cite this article as: Dorado-Criado M, Fabra-Garrido C, Buitrago Gil C, Baquero-Artigao F. Neumonitis por *Chlamydia trachomatis*: una enfermedad infradiagnosticada y potencialmente grave. Enferm Infecc Microbiol Clin. 2021;39:265–266

All infants were brought in due to respiratory symptoms; only two had fever. Three had a history of conjunctivitis in the second week of life, although *C. trachomatis* infection was not suspected, and therefore they did not receive suitable treatment. In all cases, a chest X-ray was pathological, with hyperinflation and interstitial infiltrates. Notably, there were high percentages of eosinophilia (5/8) and hypergammaglobulinaemia (4/4).

All patients were admitted, and the median duration of hospitalisation was 9.5 days (IQR: 6–23). Six patients required oxygen therapy for a mean of 7.5 days (IQR: 1–18). High-flow systems were used in three patients. Two infants required IC admission for respiratory failure: one needed non-invasive ventilation and the other needed invasive mechanical ventilation for two days.

The microbiological diagnosis was made by polymerase chain reaction (BD maxTM multiplex PCR) in nasopharyngeal aspirate (positive in seven cases) and in urine (positive in three of the four cases for which it was ordered). In two cases with associated conjunctivitis, conjunctival PCR was performed, and was positive in one case.

All patients received treatment with an oral macrolide, following a favourable course. The mothers and their partners were referred to the gynaecology clinic for evaluation.

In developed countries, *C. trachomatis* infection is the most prevalent sexually transmitted disease.⁴ It is an underdiagnosed disease in pregnant women because it usually follows an asymptomatic course,^{1,2} which can lead to a delay in diagnosis for the child and a need for hospital admission.

Perinatal infection causes colonisation of the pharynx, rectum and genital tract of newborns. In 30%–50% of colonised neonates, it causes conjunctivitis in the first two weeks of life.⁵ It is important to be attentive to this first sign, which is usually self-limiting, to make a correct diagnosis by PCR in conjunctival discharge.

Without suitable treatment, these patients can develop a nasopharyngeal infection, which in 30% of cases can progress to pneumonia.⁶ This usually presents with prolonged hypoxaemia and, in some cases, a need for respiratory support and IC admission.^{3,7,8} In our series, two patients were transferred to IC for severe respiratory failure. In 1985, Attenburrow and Barker reported five cases of severe neonatal pneumonia due to *C. trachomatis* in premature infants (25–32 weeks); all required mechanical ventilation, and one died.⁸

We agree with Piñeiro et al.⁹ on the need to implement screening programmes for *C. trachomatis* in pregnant women 15–25 years of age and in women with risk factors for infection. In our series,

75% of the mothers were under 30 years of age and many were immigrants from areas with a high prevalence of the disease. In areas where screening is not implemented, it should be suspected in infants under 2 months of age with slowly progressing bronchiolitis or cough with pertussis-like features, a history of previous conjunctivitis, eosinophilia and hypergammaglobulinaemia. Early diagnosis and treatment in the infant can prevent hospital admission and associated complications.

Funding

This work received no specific funding from public, private or non-profit organisations.

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<https://doi.org/10.1016/j.eimce.2021.02.007>

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on behalf of Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica.

Reply to «*Chlamydia trachomatis* pneumonia: An underdiagnosed and potentially severe disease»[☆]

Respuesta a «Neumonitis por *Chlamydia trachomatis*: una enfermedad infradiagnosticada y potencialmente grave»

Dear Editor,

After carefully reading the letter to the editor from Dr Dorado et al.¹ entitled “*Chlamydia trachomatis* pneumonia: An underdiag-

nosed and potentially severe disease”, we would like to make the following comments.

First of all, we would like to thank Dr Dorado and her collaborators for the interest shown in our article and the great review they conducted on *Chlamydia trachomatis* pneumonitis in infants in our setting. Their experience is consistent with our data in that *Chlamydia trachomatis* is not an uncommon cause of afebrile pneumonia in infants and is probably underdiagnosed. Clinical suspicion and early diagnosis are of great importance, since, as they indicated, it can lead to serious complications and intensive care (IC) admission.

None of the patients in our series² required IC admission and the duration of hospitalisation was shorter (median of 6.5 days versus 9.5 days), perhaps because our patients had an older median age at diagnosis (58 days versus 48 days). However, we do agree on the

[☆] Please cite this article as: Berzosa Sánchez A, Kirchschräger Nieto SB, Ruiz Jiménez M, Ramos Amador JT. Respuesta a «Neumonitis por *Chlamydia trachomatis*: una enfermedad infradiagnosticada y potencialmente grave». *Enferm Infecc Microbiol Clin*. 2021;39:266–267

