

## NEW MICROBES IN HUMANS

## Lack of *Chlamydia*-related bacteria among patients with community-acquired pneumonia

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The aetiology of community-acquired pneumonia is only determined in approximately 50% of cases [1]. *Chlamydia* and *Chlamydia*-related bacteria may be the agents of some pneumonia of unknown etiology. Indeed, *C. psittaci* and *C. pneumoniae* are well-established agents of pneumonia [2], whereas *Parachlamydia acanthamoebae* and *Simkania negevensis* are considered to be emerging agents of lung infections [3,4]. However, routine cultures fail to detect these strict intracellular *Chlamydiales*, and broad-range eubacterial 16S rRNA PCRs (applied to lung biopsy or pleural fluid samples) also fail to detect *Chlamydiales* [5]. Moreover, several additional bacteria belonging to the *Chlamydiales* order might possibly be involved in lung infections, including *Rhodochlamydia* spp. and *Waddlia* spp., as well as new lineages.

To fully investigate the role of all members of the *Chlamydiales* in lung infections, we thus investigated by a pan-*Chlamydiales* PCR oropharyngeal samples taken from a total of 564 patients with moderately severe community-acquired pneumonia included in a prospective study [6].

Briefly, DNA was extracted using the QIAamp DNA Mini Kit (Qiagen, Hilden, Germany). Then we performed in duplicate a

homemade pan-*Chlamydiales* real-time PCR, as described elsewhere [7]. The results of all tests but one were negative. The positive sample, taken from a 79-year-old Swiss man, showed the presence of *C. psittaci* DNA. The patient was hospitalized for fever and cough. He complained of acute-onset cough, dyspnea on minimal exertion and fever. His medical history was notable for cerebrovascular disease, coronary artery disease and diabetes mellitus. There was no recent travel or documented exposure to animals. At admission the patient was disoriented, hypoxemic and febrile (38.3°C), with mild tachypnea and tachycardia. Chest examination revealed dullness on percussion and crackles at the left pulmonary base. He exhibited mild leukocytosis and elevated urea. Consolidation of the left lower lobe and a small pleural effusion were documented by chest X-ray.

Intravenous cefuroxime and oral clarithromycin were administered. His condition rapidly improved, and the patient was transferred on the tenth day after admission to a rehabilitation facility. Two pairs of blood cultures, obtained before the administration of any antibiotics, remained sterile. Urine was negative for the presence of *Legionella pneumophila* and *Streptococcus pneumoniae* antigens. Normal oropharyngeal flora was recovered by culture from a sputum sample. Testing for the presence of *C. pneumoniae* and *Mycoplasma pneumoniae* by PCR on the oropharyngeal swab was also negative.

Contrarily to what we expected, no *Chlamydia*-related bacteria have been detected by the pan-*Chlamydiales* PCR in the largest cohort published to date. This contrasts with previous work by Marrie *et al.* [8], who identified two seroconversions among 255 patients with community-acquired pneumonia requiring hospitalization (0.8%), and with the study by Casson *et al.* [9] documenting DNA of *Parachlamydia acanthamoebae* in 15% of nasopharyngeal swabs taken from children with a bronchiolitis. The difference may be due to the different study populations. Here, only adults with mild and moderate community-acquired pneumonia were enrolled and immunocompromised patients were excluded, whereas in previous studies *P. acanthamoebae* was mainly documented among immunosuppressed patients [8,10] and children [7,9]. The absence of *S. negevensis* DNA argues against a pathogenic role of *Simkania*, a still-controversial question [2,3]. On the other hand, the documented *C. psittaci* infection underlines the importance of a complete diagnostic assessment, including *C. psittaci*, even in absence of history of exposure to birds. These data, taken together with the findings of our study, demonstrate that outside specific local conditions that may lead to cases clusters or outbreaks, different members of the *Chlamydiales* order, including *C. pneumoniae*, are not common agents of community-acquired pneumonia [11].

## Conflict of interest

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None declared.

## References

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