Reply to Boethel et al

To the Editor—We agree with Dr Boethel and colleagues that regional epidemiology must be considered for any diagnostic testing strategy for Legionnaires’ disease [1]. We emphasize this in our article, and suggest that a period of systematic polymerase chain reaction (PCR) testing can better characterize the regional epidemiology of Legionnaires’ disease and inform local testing strategies [2]. Thereafter, ongoing systematic PCR testing may not be suitable for all regions of the world, but may be warranted during seasonal peak periods of activity.

Importantly, regional epidemiology will not be properly assessed if the only diagnostic tools used are the urinary antigen test and the occasional use of culture. The survey in the abstract referred to by Boethel and colleagues [3] has only provided data on Legionella pneumophila serogroup 1, as this is the only species and serogroup detected by the urinary antigen test. There is no information on other L. pneumophila serogroups or other Legionella species. This diagnostic bias is widespread in many countries that rely on diagnostic tests that favor or detect only L. pneumophila serogroup 1, and is partially responsible for the lack of attention to non–L. pneumophila species and sporadic disease. In our study, we would have missed 86% of cases of Legionnaires’ disease had we used the urinary antigen test as our sole diagnostic method [2].

With the combination of good diagnostic accuracy, the ability to detect all Legionella species, and rapid turnaround time, PCR can be regarded as the diagnostic test of choice for Legionnaires’ disease. Cost and technical expertise are also not the barriers they previously were. Boethel and colleagues have misquoted their Centers for Disease Control and Prevention source (available at: http://www.cdc.gov/legionella/diagnostic-testing.html); the variability of assays between laboratories is listed as a disadvantage, but there is no recommendation against the use of PCR.

As we have shown, with our PCR testing strategy we detected a greater proportion of Legionnaires’ disease patients with less-severe disease [2]. However, 29% still required intensive care unit admission and 9% died in hospital, and PCR was the only positive diagnostic test for more than one-third of these patients. Therefore, we disagree with the implication that PCR will mainly detect less-severe disease. Concern about Legionnaires’ disease is a major driver for the widespread reliance on broad-spectrum empiric antibiotic treatment for community-acquired pneumonia [4]. Use of Legionella PCR provides the opportunity for more rational use of antibiotics, especially in regions with a relatively high incidence of Legionnaires’ disease.

The old adage “look and you will find it” is particularly pertinent to Legionnaires’ disease diagnostics. Similarly, you can only truly understand the regional epidemiology of Legionnaires’ disease by using a comprehensive testing strategy that detects all Legionella species and serogroups.

Note

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

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