

## Letters to the Editor

### *Legionella* Pneumonia: Experience in a Community Teaching Hospital

#### To the Editor:

Legionnaires' disease accounts for 2% to 9% of cases of community-acquired pneumonia. Among patients with pneumonia who can be treated as outpatients, the frequency of legionnaires' disease is less than 1%.<sup>1</sup> By contrast, *Legionella* pneumonia is much more frequent among hospitalized patients, especially among those with severe pneumonia.<sup>2</sup> The incidence and recognition of nosocomial *Legionella* pneumonia depend on the extent of colonization of the hospital water supply with *Legionella*, the number of immunocompromised hosts hospitalized, and the availability of culture methods within the hospital.<sup>3</sup> Transplant recipients are at higher risk.<sup>4</sup> Due to the high potential for morbidity and mortality of this disease, empiric *Legionella* treatment has been practiced frequently for immunosuppressed patients. It therefore seems important for hospitals to establish the incidence of *Legionella* infection among their patients to guide empiric treatment and prompt new control measures as indicated.

To address this issue at Huron Hospital, a 287-bed acute care teaching facility in East Cleveland, Ohio (the only healthcare facility in the area), a retrospective study of the patients with pneumonia, both community acquired and nosocomial, was designed. Patients with pneumonia between July 2001 and October 2002 were included. We also determined the total number of urine *Legionella* antigen tests performed within the same time period. The immunochromatography assay from Binax (Portland, ME), a 15-minute test used for the detection of *L. pneumophila* serogroup 1 antigen in urine, is currently employed at Huron Hospital. It has a sensitivity of 70% and a specificity of 90% to 99% for patients with doc-

umented *L. pneumophila* serogroup 1 infection, which has accounted for approximately 80% of *Legionella* infections.<sup>5</sup> A total of 1,074 cases of pneumonia were identified, including nosocomial and community-acquired cases. Eighty-six urinary antigen tests were performed during the study period and only one had positive results.

The incidence of legionnaires' disease depends on the degree of contamination of the aquatic reservoir, the susceptibility of the individuals exposed, and the intensity of the exposure. The epidemiology of hospital-acquired legionnaires' disease depends on the presence of *Legionella* in the potable water system.<sup>6</sup> Huron Hospital is located in East Cleveland, Ohio, an urban area that receives its water supply from the Cleveland Division of Water. The discovery of *Legionella* infection also depends on the availability of specialized laboratory tests and their application to the infected patients. Studies have amply documented the presence of unsuspected legionnaires' disease that surfaced only after routine application of these tests (eg, culture on selective media).<sup>7</sup> In our study, only the urinary antigen test was applied.

Investigators from Pittsburgh recommended routine cultures of the hospital hot water supply regardless of whether cases of legionnaires' disease have been diagnosed.<sup>8</sup> The rationale was that the discovery of *Legionella* colonizing the water system should lead to an increased index of suspicion, increased orders for the specialized laboratory tests for *Legionella* in patients with nosocomial pneumonia, and introduction of *Legionella* testing methods including urinary antigen.<sup>8</sup> At Huron Hospital, urinary antigen testing was being used for clinically suspected cases, but the apparent rate of *Legionella* infection was low. This could be because of the lack of transplant services at Huron Hospital.<sup>9</sup>

*Legionella* pneumonia seems to be uncommon among hospitalized patients in East Cleveland, Ohio, sug-

gesting that empiric *Legionella* treatment could be reserved for patients suspected to be at increased risk. Limitations to this study included the absence of *Legionella* cultures on selective media, which is the gold standard of diagnosis, the use of *Legionella* antigen testing for only 8% of pneumonia cases, and the relatively short study period. Hospitals should routinely perform such surveillance for *Legionella* infections.

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Obi Okoye, MD  
 Manhal Tannous, MD  
 Raja Shekar, MD, FACP  
 Keyvan Ravakhah, MD, MBA, FACP  
 Department of Medicine  
 Huron Hospital/Cleveland Clinic Health System  
 Cleveland, Ohio