

M. R. Malekzadegan¹, R. J. Durrance², T. M. Arab¹, K. Cervellione³, F. Bagheri⁴

¹Department of Pulmonology, Jamaica Hospital Medical Center, Richmond Hills, NY, United States.
²Department of Internal Medicine, Jamaica Hospital Medical Center, Richmond Hills, NY, United States.
³Research Department, Jamaica Hospital Medical Center, Richmond Hills, NY, United States.
⁴Department of Infectious Disease, Jamaica Hospital Medical Center, Richmond Hills, NY, United States.

Introduction :

Legionella pneumophila is an important causative agent of community-acquired and nosocomial pneumonia. While the incidence of Legionella pneumonia has increased significantly in recent years due to increased awareness and improved diagnostic techniques, an underestimate of its true incidence is suspected. Though well-known to cause outbreaks of disease, more than 80% are isolated cases. Mortality rates highly depend on timely recognition of disease and appropriate antibiotics. We conducted a case series to describe the clinical outcomes of Legionella pneumonia at a community hospital.

Materials and Methods :

A comprehensive chart review of the past 4 years of all cases of patients admitted for legionella pneumonia in a community hospital in Queens, NY was conducted.

Patient Characteristics	N (%)
Average Age	22 (100%)
Male Gender	59
Past Medical History:	17 (77.3%)
Hypertension	17 (77.3%)
Diabetes Mellitus	8 (36.3%)
Hyperlipidemia	10 (45.4%)
Coronary Artery Disease	3 (13.6%)
Chronic Obstructive Pulmonary Disease	4 (18.2%)
Chronic Kidney Disease	6 (27.3%)
Cancer	4 (18.2%)
HIV	2 (9.1%)
Alcohol Use Disorder	5 (22.7%)
Smoker	11 (50%)

Patients at this hospital are routinely subjected to urine legionella antigen testing. Demographic and clinical characteristics were collected.

Results :

A total of 22 cases were identified. There was a 77% male predominance, with an average age of 59-years-old. Chief complaint on hospital presentation were gastrointestinal symptoms in 36% of cases. Fever of $\geq 101.8^{\circ}\text{F}$ was appreciated in 59% of patients. Labs showed a significantly elevated CPK in 63% of patients and hyponatremia in 59% of patients.

Signs and Symptoms on Presentation:	
Cough	41%
Shortness of Breath	22%
Fever	41%
Weakness / Lethargy	27%
Abdominal pain / Diarrhea / Nausea / Emesis	36%
Confusion / Delirium / Altered Mental Status	27%

Literature has shown a greater occurrence of cases in the summer and early fall, when air-conditioners are in use. This was similar in our population where 77% of cases presented between June 15th and October 15th of each year.

Labs on Admission:	St. Dev.
Leukocyte Count (WBC x 10 ⁹ / L)	13.82 4.87
Serum Sodium (mEq/L)	133 5.77
Lactic Acid (mg/dL)	2.33 1.38
Creatinine Kinase U/L)	12480 28969.11

Indicators of Severity	
ICU Admission:	50%
Septic Shock / Vasopressors	40.90%
Intubated	36.40%
Average Length of Stay	11.8 days

The average length of hospital stay was 11.8 days, with 50% of patients required ICU monitoring. Overall, 36% of patients required intubation for airway protection and 41% developed septic shock requiring vasopressor support. Overall mortality was calculated at 13.64%, however one patient had an advanced directive on admission indicating comfort measures only.

Conclusion :

Overall, most demographic and clinical characteristics in our sample were similar to those traditionally reported in cases of Legionella pneumonia including elevated CPK and hyponatremia. As reported previously, respiratory symptoms may not be the initial complaint in Legionella pneumonia. Reported mortality has been between 5-10% of cases, which is similar to our sample. Half of our cases had severe disease requiring ICU admission, and nearly half requiring use of vasopressors. Further characterization of this disease in different regions is important for timely identification and treatment to reduce mortality.

References:

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