BACKGROUND
- Infections are a major cause of morbidity and mortality in patients with systemic lupus erythematosus (SLE).
- An increased susceptibility to infections exists in SLE patients, either related to immunosuppressive therapies or from disease-related immunological dysfunction.
- Central nervous system (CNS) infections in patients with SLE are rare, affecting approximately 1.4% of patients; however, a death rate of higher than 40% has been reported in this patient group.
- *Listeria monocytogenes* (LM) is an intracellular gram-positive bacillus which directly spreads from cell to cell without being exposed to the humoral immune system.
- In the US and France, LM has been reported as the third or fourth most common cause of encephalitis-associated deaths, respectively.
- Those most vulnerable to Listeria infection are healthy adults older than age 65, neonates, pregnant women, immunocompromised individuals, including those having received immunosuppressive therapy.

CASE PRESENTATION
A 68-year-old female with history of SLE, ischemic cardiomyopathy, and chronic diarrhea presented with acute worsening of diarrhea and rectal pain over 3 days. She had been hospitalized the prior month for new choreiform movements and dysarthria believed to be secondary to CNS involvement of SLE; at the time, she had been taking prednisone 40 mg daily and mycophenolate 750 mg twice daily for immunosuppression. Notable labs on admission included leukocytosis 11.9 K/mcL, sodium 128 mmol/L, bicarbonate 18 mmol/L, glucose 273 mg/dL, BUN 30 mg/dL, and creatinine 1.25 mg/dL.

The patient developed altered mentation with high fevers shortly after admission and was emergently intubated, then transferred to ICU; CT head was negative and lumbar puncture (LP) was performed. Empiric IV cefepime, vancomycin, ampicillin, acyclovir and oral vancomycin were started. Cerebrospinal fluid (CSF) culture and rapid meningitis panel grew *Listeria monocytogenes*, as did initial blood cultures. Repeat blood and CSF cultures were negative, and she completed antibiotic treatment for 3 weeks. Patient clinically improved and was transitioned back to her home from a skilled nursing facility.

DISCUSSION
- Due to their similar manifestations, CNS infections and neuropsychiatric systemic lupus erythematosus (NPSLE) may be difficult to distinguish from one another.
- The most common pathogens involved in CNS infections in SLE patients include *M. tuberculosis*, *C. neoformans*, and *L. monocytogenes*.
- A transient gastroenteritis may precede Listeria meningitis, providing an important clue for accurate diagnosis and therapy.
- SLE patients with CNS infection may present with fever, febrile gastroenteritis, anorexia, and headache; less common features are neck stiffness, coma, and seizures.
- Ampicillin is the recommended first-line agent, and trimethoprim-sulfamethoxazole is the drug of choice for penicillin-allergic patients.
- In order to mitigate high mortality, clinicians must have high suspicion for meningitis and respond with early diagnosis and treatment.

REFERENCES