

Nosocomial Infection Caused by *Listeria monocytogenes* in a Patient With a Lung Transplant

To the Editor: *Listeria monocytogenes* is a gram-positive bacillus that favors immunodepressed patients, especially neonates, elderly people, and pregnant women and on occasions affects solid organ transplant recipients. We report the case of a woman who developed a disseminated nosocomial infection caused by *L. monocytogenes* 3 months after having received a lung transplant.

Our patient was a 52-year-old female with a history of idiopathic pulmonary fibrosis (usual interstitial pneumonia) and allergy to amoxicillin and ampicillin. After a left unilateral lung transplant was performed, the patient presented complications of graft dysfunction and pulmonary aspergillosis with secondary respiratory distress. Three months later, during which time the patient was unable to leave the hospital, she had a fever of up to 39°C, headache, and impaired level of consciousness. Physical examination revealed no neurologic abnormalities or signs of meningitis. Additional tests showed leukopenia (white cell count 2800/mL; 65% neutrophils, 30% lymphocytes, and 3.5% monocytes) and a platelet count of 57 000/mL. Biochemistry showed the following values: aspartate-transaminase, 224 U/L; alanine-aminotransferase, 272 U/L; γ -glutamyl transpeptidase, 982 U/L; and lactate dehydrogenase, 2462 U/L. A computed tomography (CT) brain scan, undertaken to investigate the impaired level of consciousness, revealed no abnormalities. However, a magnetic resonance (MR) brain scan revealed signs of brainstem encephalitis. A lumbar puncture was performed; analysis of the fluid showed white cells, 10/dL; glucose, 110 mg/dL; and proteins, 256 mg/dL. *L. monocytogenes* grew on

blood cultures started during a new febrile peak. Treatment commenced with meropenem and tobramycin. There was no clinical response, and 10 days later the patient died.

Infections are the main cause of morbidity and mortality during the first year in patients who have received a solid organ transplant and it is estimated that up to 34% of these cases affect the central nervous system (CNS) in some way.¹ Although the virulence of *L. monocytogenes* is very low, its behavior changes radically in immunocompromised patients like ours and the prognosis is poor, especially in patients with CNS involvement.² Our patient was also allergic to amoxicillin and ampicillin, and this led to our choosing alternative antibiotics that had been described as effective³ but which were not so in this case. Our patient presented disseminated disease virtually from the outset. There was marked involvement of the liver (very rare but more frequent in immunodepressed⁴), brain (in the form of brainstem encephalitis), and bacteremia. It is worth noting that in the majority of patients the site of infection reflects the intake of food (milk, dairy products, and meats). The case we report was nosocomial as the infection occurred inside the hospital. This is quite rare in the medical literature reviewed.

Fungal infections (caused by *Aspergillus*, *Candida*, and *Cryptococcus* species) are especially important in the differential diagnosis of CNS involvement in lung transplant recipients and these mainly present in the form of abscesses. As for parasites, *Toxoplasma* species is worthy of mention. *Nocardia* species are notable bacteria whereas

Listeria species are only rarely the agents of infection,⁵ although they should not be overlooked in the differential diagnosis of CNS involvement in immunodepressed patients.

José María Hernández Pérez,^a
Rosalia Laporta Hernández,^b
and Piedad Ussetti Gil^b

^aHospital General de La Palma, Breña Alta,
Isla de La Palma, Spain

^bHospital Universitario Puerta de Hierro,
Madrid, Spain

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