Lactobacillus Rhamnosus Sepsis in an Immunosuppressed Patient with Tuberculous Meningitis and Myeloradiculitis

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Abstract
Portugal has reduced the incidence of tuberculosis disease in last years, but has an incidence that surpasses the average in Europe. The risk of reactivation of latent tuberculosis in patients about to undergo immunosuppressive and immunomodulatory therapy is high, and therefore, screening and treatment is mandatory in order to avoid the evolution of the disease from latent to active, with severe forms often difficult to treat.

We report a case of a 37 years old female, previously medicated with prednisolone and mycophenolate mofetil for a bullous pemphigus until the diagnosis of disseminated tuberculosis. In the course of the disease, a central venous catheter was placed for total parenteral nutrition due suspicion of poor absorption of antituberculous drugs. The patient had an endocarditis and septic thrombophlebitis with bacteremia due to Lactobacillus rhamnosus and difficult to treat tuberculosis complicated with meningomyeloradiculitis, which resulted in paraplegia associated with a neurogenic bladder.

Introduction
Despite the advances of microbiology, immunology and pharmacology, tuberculosis (TB) remains a serious public health problem, particularly in poor countries. Portugal, which has reduced the incidence of the disease in 2009, had an incidence of new cases of about 27.0 per 100,000 inhabitants, a figure which surpasses the average in Europe (15/100,000 inhabitants) and also values considered of low endemiocity (<20 cases/100,000 inhabitants) [1]. In patients about to undergo immunosuppressive and immunomodulatory therapy, the risk of reactivation of latent tuberculosis is high and therefore, screening is mandatory in order to avoid the evolution of the disease from latent to active, with severe forms often difficult to treat.

The extra-pulmonary involvement of the central nervous system (CNS) occurs in approximately 1% of cases. CNS TB is the most severe form of the disease with high morbidity and mortality (20% to 50%), and is often associated with serious complications and permanent sequelae [2].

Case Report
A 37-year-old Portuguese female patient was hospitalized in February 2011 in another hospital unit with the diagnosis of disseminated tuberculosis (meningal and pulmonary). As relevant past history, the patient had been diagnosed with bullous pemphigus 2 years before, and had been medicated, until the date of admission, with a prednisolone and mycophenolate mofetil.

The diagnosis of tuberculosis was based on clinical symptoms and microbiologic study: presence of acid-fast bacilli (AFB) in gastric aspirate and PCR for Mycobacterium tuberculosis in cerebrospinal fluid. She started antituberculous therapy with isoniazid (INH), rifampicin (RIF), pyrazinamide (PZA) and ethambutol (EMB). Serum testing for HIV was negative. On the day 22 of hospitalization, diplopia and paresis of the sixth cranial nerve appeared. She had fever, bad general condition with progressive malnutrition (weight=39 kg). The brain CT showed no changes. Cerebrospinal fluid (CSF) study showed white blood cell count 76/mm³ (72% lymphocytes), protein 252 mg/dL, and glucose 35 mg/dL and ADA=192U/ L. In CSF culture grew Mycobacterium tuberculosis, which was susceptible to INH, RIF, PZA and EMB.

In day 50 of hospitalization, due to suspicion of malabsorption, a central venous catheter (CVC) was placed in the right subclavian vein for parenteral nutrition and parental antituberculous drugs. The patient showed significant improvement.

On the day 66 of hospitalization, CVC nosocomial sepsis was diagnosed. Blood cultures were collected and empirically antibiotics were started. Trans-thoracic echocardiogram showed a large ehogenic mass in the right atrium, mobile, protruding into the right ventricle in diastole; the mass appeared to have been originated in the superior vena cava (SVC), suggesting a thrombus or intra-cavity vegetation. The diagnosis of septic thrombophlebitis and infective endocarditis was considered.

The patient was transferred to our Hospital on the day 69 of hospitalization and admitted to the Infectious Disease Ward. She was clinically and hemodynamically stable without signs of peripheral embolization. Antituberculous therapy was restarted orally with INH+RIF+PZA+EBM. Given the clinical stability, the thoracic surgery was programmed to the 2nd of May, but no thrombus was found. In postoperative period, she was admitted in the Intensive Care Unit of Infectious Diseases (ICU-ID). The evaluation in the postoperative period showed a pulmonary thromboembolism (PTE) and a thrombus of the SVC in CT angiography. Given the severity of PTE, it was decided to initiate fibrinolytic therapy.

Fever and persistently positive blood cultures were documented between days 66 and 71. Cultural identification of the microorganism
Lactobacillus rhamnosus had been difficult but, with the help of molecular biology, a Lactobacillus rhamnosus was identified in blood cultures. Antimicrobial Susceptibility Test (AST) was obtained by E Test. She made multiple antibiotic regimens, the last one with ampicillin, clarithromycin and amikacin according to AST. With the latter, and due to the interaction of clarithromycin with rifampicin, it was decided to swap rifampicin with ciprofloxacin. There was a progressive defervescence, reduction of clarithromycin with rifampicin, it was decided to swap rifampicin amikacin according to AST. With the latter, and due to the interaction of endovascular surfaces is uncommon [4]. Lactobacillus rhamnosus and severe underlying diseases, as well as prior surgeries, but infection is sporadically seen in patients with impaired host defenses and severe underlying diseases, as well as prior surgeries, but infection of endovascular surfaces is uncommon [4]. Lactobacillus rhamnosus bacteremia range from asymptomatic to severe sepsis and may be combined with pneumonia, deep abdominal abscesses, or endocarditis, a rare focalization [5].

The patient described developed a very rare and severe form of tuberculosis – a myeloradiculitis. Moreover, it has appeared after 4 months of appropriate therapy based on susceptibility testing, behaving like a paradoxical response. This paradoxical response may explain the fact that the patient, even with appropriate therapy, has progressed towards subdural empyema and intramedullary spinal cord abscess, very rare forms of neurological involvement. The diagnosis may have been delayed because the patient had been sedated and ventilated for several weeks.

The use of steroids in tuberculous of CNS is controversial. There is concern regarding the bioavailability of the antituberculous drugs entrance in CNS, upon restoration of the blood-brain barrier due to the anti-inflammatory effects of corticoids. However, there is evidence to suggest that their use is warranted and beneficial [8,9]. In our case, steroids were not started initially when meningitis was diagnosed because mental status was preserved and no neurologic deficit was present. The tuberculosis myeloradiculitis can occur by three ways: as a primary tuberculous lesion, as an extension upstream of tuberculous meningitis, or as a secondary extension of spinal tuberculosis. Macroscopically, a common feature is the presence of extensive exudates [8].

A combination of antituberculous drugs should be initiated soon after diagnosis and treatment, with or without surgical intervention.
intervention, should last at least 12 months. In some situations, myeloradiculitis occurs not due to the failure of antituberculosis drugs, but to a paradoxical reaction to treatment [10,11]. The importance of laminectomy remains controversial; however, it should always be considered when evidence of spinal cord suffering is present, as in the case described [5,12,13]. The myeloradiculitis tuberculosis is rare, but its diagnosis should be considered when a patient develops symptoms of spinal cord involvement, as in the present case. MRI is the method of choice for diagnosis.

In conclusion, this case report shows two rare diagnosis: catheter associated bacteremia complicated by septic thrombophlebitis by *Lactobacillus rhamnosus* and a disseminated form of tuberculosis complicated by myeloradiculitis during treatment.

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