Infeção por Mycobacterium tuberculosis Subsp. canettii
Mycobacterium tuberculosis Subsp. canettii Infection

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To the editor:
As we know, the Mycobacterium tuberculosis complex (MTC) includes different slow growing mycobacteria: M. tuberculosis, M. canettii, M. africanum, M. bovis, M. bovis BCG, M. caprae, M. microti and M. pinnipedi.1 M. canettii, a rarely identified one, was first isolated in a 20-year-old French farmer suffering from pulmonary tuberculosis by George Canettii in 1969 and added to the group in 1997.2 It is considered smooth tubercle bacilli, a group that includes members of the MTC characterized by smooth and cordless organisms,3 probably due to particular membrane characteristics that allow their growth in adverse conditions,4 like experimental infected soil for 12 months.3 Clinical and radiological manifestations are indistinguishable from tuberculosis caused by other members of MTC,1 but its genetic might be unique. It is characterized by trimethoprim-sulphametoxazole susceptibility, growth on trypticase-soy media and a shorter generation time in liquid medium4 and recent data also showed it is intrinsic resistant to pyrazinamide.4 Lack of inter-human transmission.3 geographic restriction and the genetic diversity of M. canettii suggest a yet unknown non-human reservoir.4 Some authors consider the possibility of contamination of drinking water and food, with replication in oropharynx and cervical lymph nodes and dissemination in the respiratory and digestive tracts.3 Besides genetic studies have been suggested M. canettii is one of the most ancient phylogenetic lineages of the tubercle bacilli, we do not have certainties about its natural reservoir, host range and mode of transmission, because many laboratories use tests that identify only the MTC level.1 Because of this, M. canettii infection prevalence must be underestimated.

In Microbiologic laboratory of Centro Hospitalar do Porto, it is standard to develop molecular biology tests when resistance to pyrazinamide is detected. The goal is to determine if it’s a M. bovis or other mycobacteria. In this way, from a total of 9 cases of pyrazinamide resistance, five cases of M. canettii infection were detected in that hospital for the past five years. The five patients were from nearby rural areas in the north of Portugal and two of them were farmers and at least one had diary contact with cattle and goats. One of them usually ingested food and water directly from the soil. All of them present with respiratory symptoms and one progressed to disseminated tuberculosis. (See table 1).

We found some epidemiologic characteristics that may have some importance, namely the rural residence, the contact with goats and cattle and the food and water ingestion directly from the soil.

In conclusions, despite its rarity, smooth tubercle bacilli deserve more investigation because of their unique epidemiologic, clinical and microbiological characteristics. Many laboratories use tests that identify only the MTC level, that’s why M. canettii prevalence is probably underestimated. Routine identification of this mycobacteria is necessary to determine its natural reservoir, host range and mode of transmission and then better understand its clinical importance.

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Table 1: Patients characteristics.

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Residence</th>
<th>Occupation</th>
<th>Food and/or water ingestion directly from the soil</th>
<th>Pets</th>
<th>Recent travels</th>
<th>Risk factors/Comorbidities</th>
<th>Diagnosis</th>
<th>New case/retreatment</th>
<th>Clinical presentation</th>
<th>Local of identification of <em>M. canetti</em></th>
<th>Antimicrobial susceptibility test</th>
<th>Antimicrobial susceptibility test</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>Male</td>
<td>Rural</td>
<td>Security</td>
<td>No</td>
<td>Cat</td>
<td>No</td>
<td>Alcohol and tobacco consumption</td>
<td>10/2012</td>
<td>Retreatment</td>
<td>Pulmonary</td>
<td>Bronchial aspirate</td>
<td>Resistance to pyrazinamide</td>
<td>Resistance to pyrazinamide</td>
</tr>
<tr>
<td>38</td>
<td>Male</td>
<td>Rural</td>
<td>Farmer and Breeder of cattle and goats</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3/2015</td>
<td>New case</td>
<td>Pulmonary</td>
<td>Respiratory secretions</td>
<td>Resistance to pyrazinamide</td>
<td>Resistance to pyrazinamide</td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>Male</td>
<td>Rural</td>
<td>Gardener</td>
<td>No</td>
<td>-</td>
<td>French, Germany and Spain in the past two years</td>
<td>Chronic pulmonary obstructive disease</td>
<td>5/2015</td>
<td>New case</td>
<td>Disseminated</td>
<td>Blood</td>
<td>Resistance to pyrazinamide</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Male</td>
<td>Rural</td>
<td>Administrative</td>
<td>Yes</td>
<td>Dogs and Cats</td>
<td>France, Germany, Netherlands and England in the past few years</td>
<td>VIH infection</td>
<td>8/2015</td>
<td>New case</td>
<td>Pulmonary</td>
<td>Respiratory secretions</td>
<td>Resistance to pyrazinamide</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Male</td>
<td>Rural</td>
<td>Farmer</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5/2016</td>
<td>New case</td>
<td>Pleural</td>
<td>Pleural effusion</td>
<td>Resistance to pyrazinamide</td>
<td></td>
</tr>
</tbody>
</table>

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