expected to cause respiratory system infections, including lung abscess [9, 10]. This makes moxifloxacin a highly effective drug for bacterial eradication, and its efficacy has been demonstrated in several clinical trials in patients with community acquired respiratory system infections [9, 10]. Additional advantage of moxifloxacin is once daily administration, which translates to better patient adherence to therapy, and the low propensity for drug interactions [9, 10]. To our knowledge this is the first study showing the utility of moxifloxacin for treatment of lung abscess. We conclude that moxifloxacin is a safe and effective treatment of lung abscess. Excellent oral bioavailability and once daily dosing make it very attractive option for long-term management of lung abscess. Additional prospective studies are required to validate these data.

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References


Sır—We read with great interest the report by O’Reilly et al. [1] describing persistent Legionella infection in an immunocompromised patient after chemotherapy. The authors reported severe pneumonia caused by Legionella pneumophila that grew on culture over a period of 30 days, despite administration of appropriate antibiotic therapy. The prolonged infection was explained by the patient’s impaired cell-mediated immunity, as well as an occult pulmonary abscess. A few additional cases of prolonged Legionella infection were reported in immunocompromised persons, including HIV-infected patients, sometimes concomitant with a nidi of infection, such as a pulmonary abscess [2–4].

In our opinion, it is important to report a case of refractory Legionella infection in an immunocompetent 74-year-old Bosnian man who was admitted to our hospital for neurosurgical meningioma resection. The findings of a presurgical laboratory examination and a chest radiograph were unremarkable. Medical history revealed peripheral arterial occlusive disease. Immunosuppressive medications (e.g., steroids) were not administered during the neurosurgical intervention. Two weeks after successful surgical intervention, the patient developed clinical, laboratory, and radiological signs compatible

Table 1. Characteristics of adult men with community-acquired lung abscess who received moxifloxacin.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age in years</th>
<th>Site of infection</th>
<th>Risk factor for lung abscess</th>
<th>Intervention</th>
<th>Treatment duration, days</th>
<th>Outcome</th>
<th>Duration of follow-up</th>
<th>Adverse events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>48</td>
<td>RUL</td>
<td>Alcohol use and gingivitis</td>
<td>None</td>
<td>28</td>
<td>Clinical cure</td>
<td>1 Year</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>43</td>
<td>LLL</td>
<td>Alcohol use, gingivitis, and COPD</td>
<td>None</td>
<td>42</td>
<td>Clinical cure</td>
<td>1 Year</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>54</td>
<td>LUL</td>
<td>Alcohol use and COPD</td>
<td>None</td>
<td>42</td>
<td>Clinical cure</td>
<td>3 Years</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>39</td>
<td>LLL</td>
<td>None</td>
<td>Percutaneous drainage</td>
<td>56</td>
<td>Clinical cure</td>
<td>3 Years</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>54</td>
<td>RUL</td>
<td>Alcohol use, gingivitis, seizure, and COPD</td>
<td>Percutaneous drainage</td>
<td>42</td>
<td>Clinical cure</td>
<td>1 Year</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>57</td>
<td>RLL</td>
<td>Alcohol use, gingivitis, and COPD</td>
<td>None</td>
<td>42</td>
<td>Clinical cure</td>
<td>6 Months</td>
<td>None</td>
</tr>
</tbody>
</table>

NOTE: COPD, chronic obstructive pulmonary disease; LLL, left lower lobe; LUL, left upper lobe; RUL, right upper lobe.
with left upper lobe pneumonia. Calculated antibiotic therapy with piperacillin-tazobactam and tobramycin was initiated. After 12 h, intravenous erythromycin was added to the antibiotic regimen. The patient was admitted to the intensive care unit, where, after 24 h, acute respiratory distress syndrome and septic shock were diagnosed.

The causative agent, \textit{L. pneumophila}, was isolated 5 days after onset of symptoms, and high-dose treatment with erythromycin was continued. Despite slow clinical improvement, \textit{Legionella} culture was still positive during and after 22 days of erythromycin therapy. The antibiotic treatment regimen was then switched to intravenous ciprofloxacin, and after 14 days, it was switched again to clarythromycin-rifampicin, which was administered for 24 days. During antibiotic treatment, \textit{Legionella} species were cultured from 13 sputum or bronchoalveolar lavage specimens during a total period of 58 days. Pulmonary abscess and endobronchial obliteration were excluded repeatedly by CT and bronchoscopy. A transient pleural exudate was sufficiently drained. During the rest of the stay, the patient improved, and he was able to be discharged from the hospital.

Microbiological examinations exhibited infection by \textit{L. pneumophila} serogroup 1 MAb type Knoxville. Macrorestriction analysis of chromosomal DNA was performed as described elsewhere [5], proving the identity of the isolated strains. Susceptibility testing demonstrated that the \textit{Legionella} strains were highly susceptible to the administered antibiotics.

Our case proves that persisting \textit{Legionella} infection is also possible in immunocompetent patients. The reason for our patient’s prolonged infection remained unclear, because a nidus (such as a pulmonary abscess) and any sign of impaired immunity were absent. Furthermore, there was no in vitro resistance to the antibiotics used. Because routine diagnosis of \textit{Legionella} infection often relies on non-culture methods, especially urine antigen detection, the true incidence of prolonged \textit{Legionella} infection is probably underestimated, and the importance of these circumstances remains unclear. Additional studies are needed to understand the microbiological, epidemiological, and clinical implications of cases involving patients who have positive results of \textit{Legionella} cultures for a prolonged period of time.

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