Mycobacterium haemophilum: Emerging or Underdiagnosed in Brazil?

To the Editor: Mycobacterium haemophilum was first described in 1978 by Sompolinsky et al. (1) as the cause of cutaneous infections in a patient with Hodgkin disease. Since then, fewer than 100 cases have been reported worldwide, mostly among immunocompromised patients (2), although M. haemophilum infection has also been described in immunocompetent patients as the cause of cervical, submandibular, and perihilar lymphadenopathy in children and of pulmonary nodules in an adult (3–5). Cases have been reported from United States, Australia, Canada, France, Israel, and the United Kingdom, but to date no reports have originated in South America.

The most frequent clinical sign of M. haemophilum infection in adults is a skin or joint lesion. Less common sites for isolation of M. haemophilum include the respiratory tract, blood, bone marrow, bone, and central venous catheters (2,6). M. haemophilum is unique among Mycobacterium species owing to its special growth requirements: it grows best at 30°C and requires an iron supplement (hemin or ferric ammonium citrate).

We report here the characterization of three strains of M. haemophilum isolated from patients living in three states in two distinct regions of Brazil, Rio de Janeiro and São Paulo (southeast region) and Bahia (northeast region). The first strain was detected in Rio de Janeiro in December 2000 from a blood culture of a 67-year-old man who had received a kidney transplant in 1988 at the age of 55 years and was undergoing immunosuppressive treatment with prednisolone and mycophenolate mofetil. The second strain was detected in São Paulo in March 2001 in a 43-year-old HIV-seropositive man from a biopsied specimen of a nasal ulcer. A direct acid-fast stain showed many acid-fast bacilli. At time of diagnosis, the patient’s CD4+ cell count was 8/mm³ and his viral load was 290,000 copies/mL. The third isolate was detected in Bahia in a 30-year-old HIV-seropositive man who had osteomyelitis in an elbow. A direct acid-fast stain showed rare acid-fast bacilli.

The isolate from the Rio de Janeiro patient grew only in Myco/F Lytic media (Becton Dickinson Microbiology Systems, Sparks, MD) plus blood in primary isolation and subculture; it failed to grow on chocolate agar at 30°C after 6 weeks. The isolates from São Paulo and Bahia showed a slight growth in 12B media on primary isolation; this growth was likely supported by the iron provided by the biopsied tissue. Subcultures on chocolate agar showed good growth after 2–3 weeks at 30°C. The isolates did not grow on Middlebrook 7H10 agar without hemin and grew on the same media when supplemented with 60 MM of hemin. Both strains showed a negative catalase reaction.

The species of all isolates was identified through polymerase chain reaction amplification of the gene encoding for the 65-kDa heat shock protein, followed by restriction analysis with the enzymes BsrEI and HaeIII as described by Talenti et al. (7), with minor modifications. The three isolates showed the same restriction pattern as that obtained for M. haemophilum American Type Culture Collection 29548 prototype strain. Isolates from Rio de Janeiro and São Paulo were also molecularly characterized as previously described by Roth et al. (8), corroborating M. haemophilum species identification.

To our knowledge, these M. haemophilum isolates are the first to be reported in Brazil. These three patients came from cities 429–962 km apart, demonstrating the dispersion of M. haemophilum infection in Brazil. Given the specific requirements of M. haemophilum for its growth in culture, our findings suggest that its true incidence in Brazil is greatly underestimated. Consequently, we strongly recommend that clinical laboratories in Brazil include an iron-supplemented medium, such as chocolate agar, incubated at 30°C, for primary isolation of Mycobacterium spp in samples from selected patients.

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LETTERS

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has multidrug-resistant TB is not fea-
sible in most cases.

The AIDS epidemic in adults in
Mumbai has adversely affected the
epidemic within the population of
children with TB. HIV infection in
young adults has resulted in a large
number of HIV-infected infants, the
result of a lack of any large-scale pro-
gram aimed at preventing vertical
transmission. To combat the growing
problem with HIV-infected infants,
India’s National AIDS Control Or-
ganization is performing feasibility stud-
ies for implementing interventions to
prevent mother-to-child transmission of
HIV infection. Clinical trials with
nevirapine are currently being con-
ducted at five major public hospitals
in Mumbai.

Multidrug-resistant TB frequently
develops in adult AIDS patients (7).
Accordingly, many pediatric AIDS
patients in Mumbai are also develop-
ing primary multidrug-resistant TB.
Since most families cannot afford anti-
retroviral therapy, HIV-infected chil-
dren in whom TB is diagnosed are
prescribed a four-drug TB treatment
(consisting of isoniazid, rifampicin,
pyrazinamide, and ethambutol) and
cotrimoxazole for *Pneumocystis cari-
nii* pneumonia prophylaxis. Although
deaths in these children are being
attributed to AIDS, we think that
many of these deaths are related to
multidrug-resistant TB.

To combat the TB epidemic, the
Revised National Tuberculosis Con-
Control Program directly observed treatment
strategy has been implemented
as part of a public health program.
However, most patients receive treat-
ment from private physicians and thus
remain outside the purview of the
strategy. Private physicians seldom
refer their patients to centers offering
directly observed treatments because
of potential for loss of income (3). In
1991, Uplekar and Shepard (10)
reported that 100 private physicians
in the Dharavi slums in Mumbai pre-
scribed 80 different anti-TB regimens;
most were both inappropriate and
expensive. Since private physicians
have not yet been involved in the gov-

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**Children and Multidrug-Resistant Tuberculosis in Mumbai (Bombay), India**

To the Editor: India has the high-
est number of tuberculosis (TB) cases
in the world. Each year in India, over
2 million new cases of TB are diag-
osed, and approximately 500,000
persons die of the disease (1). During
the last decade, multidrug-resistant TB
has burgeoned in India, resulting in an
extremely large number of multidrug-
resistant TB cases, second only to the
number of cases noted in Latvia (2).
Since 1993, in response to this epi-
demic, the government of India has
implemented the Revised National Tuberculosis Control Program, which
is based on directly observed treatment
(short course) principles (1).

Mumbai (formerly Bombay),
India, is a densely populated metropo-
lis with a population of approximately
12 million, 4.8 million (40%) of
whom reside in overcrowded slums.
Since 1990, a resurgence of TB has
occurred, characterized by a 70% to
140% increase in the rate of TB-
related deaths among adults aged 25–
44 years (3). A vital factor contribut-
ing to this phenomenon is HIV infec-
tion. A recent review of autopsy
reports from Mumbai showed that 85
(59%) of 143 adult patients with AIDS
were diagnosed with pulmonary TB
(4), indicating that the disease is the
most common opportunistic infection
for persons with AIDS. Commensu-
rate with the increase in TB cases is a
surge in the prevalence of multidrug-
resistant TB in adult patients. Two ref-
derence mycobacterial laboratories in
private hospitals in Mumbai have
reported a high prevalence of multi-
drug-resistant TB strains; 56 (11%) of
521 cases in 1991–1995, and 58 (58%)
of 100 cases in 1994–1995 (5,6).

The crisis of multidrug-resistant
TB in adults in Mumbai has been well
documented (7). However, little atten-
tion has been directed at children also
affected by the resurgent TB epi-
demic. We think that TB is developing
in more children in Mumbai today
than a decade earlier. Moreover, close
proximity to adult patients with multi-
drug-resistant TB makes children
prone to developing primary multi-
drug-resistant TB, a vulnerability doc-
umented in a South African study (8).
Similarly, disseminated TB is occur-
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