Leprosy Transmission: Still a Challenge

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Leprosy, a chronic infectious disease caused by *Mycobacterium leprae*, is under control in developed countries; however, 244,796 new cases were detected worldwide during 2009. Brazil, with 37,610 new cases detected in 2009, has the highest prevalence rate in the world (2.19/10,000 population) and has not yet eliminated leprosy as a public health problem (1).

Levis et al. (2) presented a case and discussion of endemic leprosy in New York City, USA. This infectious disease rarely affects citizens who have never travelled outside the continental United States. We recently detected a case of leprosy in a hyperendemic area of the Brazilian Amazon that helps to elucidate this phenomenon.

CASE REPORT

A 37-year-old woman presented at our institution with a 3-year history of a 7-cm wide, slightly hypochromic macule associated with skin infiltration and hypoesthesia, on the right malar region. A skin smear was positive for acid-alcohol-resistant bacillus in the lesion, and enzyme-linked immunoassay (ELISA) for anti-PGL-I IgM in plasma was also positive (optical density: 0.435; cut-off: 0.295). Thus, she was diagnosed with borderline-borderline leprosy. There were no other symptoms.

The patient has lived in Europe for almost 10 years and returns to Brazil every year to see her family. Her mother had borderline-borderline leprosy in 1999, was treated for one year, and discharged as cured after 12 doses of multibacillary multidrug therapy, with grade 2 disability. When the first symptoms appeared, the patient did not consider leprosy, but she was referred to us after a general practitioner included leprosy as a possible diagnosis.

DISCUSSION

The mode of transmission of leprosy is still not conclusively proven, although person-to-person spread via nasal droplets is believed to be the main route (3). Some authors have pointed out the possibility of zoonotic leprosy, with a reservoir of disease in wild armadillos, in the Southern United States (4), but this hypothesis does not explain the occurrence of leprosy in other areas of the world where there are no infected wild armadillos.

According to the WHO, a few cases of leprosy still occur in the European region, but they are rare and seldom reported by the Ministry of Health in the host country (1). Leprosy is a disease of poverty and is still a public health problem in some developing countries, such as Brazil and India, and especially in the very underdeveloped communities of these nations. Globalization and the intensifying flow of migration increase the risk of the transmission of communicable diseases, such as leprosy, in areas where they have previously been eliminated as a public health problem.

Massone et al. (5) showed that leprosy is no more infrequent in non-endemic countries, mainly due to immigration flows, and that the numbers are increasing. Due to the long incubation period of the disease, it is very difficult to state firmly when a patient was infected, as was recently demonstrated by a well-documented lepromatous leprosy case in a chimpanzee (6).

It is not possible to estimate how many people could be infected by *M. leprae* from a single bacilliferous leprosy patient during a period of approximately 3 years (which is the period that the present case remained without treatment in Europe), or who will develop the clinical disease in the future.

Taking into account the long incubation period and the fact that the patient described here will return to Europe after finishing her treatment in Brazil, if susceptible European people develop leprosy, they will be among the one-third of patients who are unable to recall any known contact with a person who had leprosy.

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