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MDT and Transmission

On the eve of the International Leprosy Congress in Beijing, China, in September, this issue of our Journal is largely devoted to the issue of the elimination of leprosy. Dr. Noordeen (p. 218) thoughtfully outlines the program of the World Health Organization to "eliminate leprosy as a public health problem." Dr. Felton Ross (p. 222) points out the dangers to existing leprosy programs if the World Health Organization's elimination campaign is declared a success, and this success is then misinterpreted to mean that leprosy is eradicated.

In this issue we have a number of very interesting original observations which are directly relevant to the subject of the elimination of leprosy. In a series of three papers by Schreuder (pp. 149, 159, 170), the operation of a vertical program in northeastern Thailand offers insights into the prognosis for patients treated with MDT. Relapses are rare in the short term but reactions are common, and many patients develop new nerve function impairments during and after treatment. It seems clear that the well-being of an individual leprosy patient is best served by having the highest possible level of expertise available to manage these potentially disabling complications. This may well be impossible if leprosy becomes the responsibility of primary general health care providers.

Valverde, *et al.* (p. 140) document a case of spontaneous leprosy in a wild-caught, female cynomolgus macaque monkey from The Philippines. This extends the animal reservoirs of leprosy from feral armadillos in North and South America, and chimpanzees and sooty mangaby monkeys in West Africa, to an Asian nonhuman primate species. As the authors discuss, while leprosy patients can serve as a reservoir of contagious *Mycobacterium leprae,* other sources of the infection could be naturally infected animals or soil harboring infectious leprosy bacilli.

Abraham, *et al.* (p. 131) carefully studied large numbers of children with single leprosy lesions as to the site of the lesion. By comparing the sites of the leprosy lesions with the sites of trauma to the skin of children living under the same conditions without leprosy, they conclude that *M. leprae* probably enters the body through breaks in the skin contaminated with infectious bacilli from the environment. This is consistent with the body of knowledge built up with armadillos with the natural infection and with experimental transmission studies in nude mice in which the easiest means of infecting an animal is to expose broken skin in cooler parts of the animal's body to infectious *M. leprae.*

Vijayakumaran, *et al.* (p. 225) studied the attack rates within households of multibacillary (MB) leprosy patients. Household contacts who lived in the household before the index case was diagnosed and started on MDT had an attack rate of 9.1 per 1000 person-years of follow up. Household contacts who only lived in the household after the index case was started on MDT had an attack rate of 4.2 per 1000 years of follow up. If the index case ceased shedding infectious *M. leprae* shortly after MDT was started, then the source of the bacilli infecting the household members who contracted the disease after the index case started MDT must have come from the environment. If the environment contains infectious leprosy bacilli, then MDT of known MB patients cannot eliminate transmission.

In short, the environment contains large numbers of infectious *M. leprae.* These bacilli enter the body via breaks in the skin occurring in the cooler parts of the body where *M. leprae* can survive. Treating known MB patients with MDT diminishes, but does not stop transmission of the disease to household contacts.

Where does this leave us in regard to the "elimination" of leprosy by the year 2000? Is this the time for self congratulation on the progress that has been made? Or is this the time for new efforts to find out what the problem really is?

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