

Original Article

Bacteremia in leprosy

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Abstract *Background* Leprosy can infect many tissues besides peripheral nerves and skin. *Mycobacterium leprae* can occasionally invade blood stream.

Objectives The aim of the study was to determine the frequency of bacteremia in leprosy patients.

Patients and methods Buffy coat smears and smears from peripheral blood samples and slit-skin smears of 20 patients with Hansen's disease (6 with lepromatous, 8 with borderline lepromatous, and 3 each with borderline tuberculoid and pure neuritic leprosy) were stained with Ziehl-Neelsen method for acid-fast bacilli.

Results Out of 20 patients, slit-skin smears were positive in 10 patients (5 each with lepromatous and borderline lepromatous leprosy) while buffy coat smears and blood smears were positive in 2 and 1 patients of lepromatous leprosy, respectively.

Conclusion Bacteremia rarely occurs in leprosy.

Key words

Bacteremia, leprosy.

Introduction

Leprosy produces its major clinical manifestations in cool, superficial tissues, especially the skin and peripheral nerves. Nevertheless, involvement of many internal organs like liver, spleen and bone marrow has been reported in leprosy patients, particularly towards lepromatous leprosy (LL) spectrum. It is generally assumed that bacteremia occurs at some point of time during the illness.¹ Our objective was to detect bacteremia in patients with leprosy.

Patients and methods

Twenty patients with a clinical diagnosis of Hansen's disease were enrolled in the study, which included 6 cases of lepromatous leprosy (LL), 8 cases of borderline lepromatous (BL), 3 cases each of borderline tuberculoid (BT) and pure neuritic leprosy (PNL). Eighteen of them were on WHO-MDT (13 on MB-MDT and 5 on PB-MDT), while the remaining 2 were untreated, new cases. Under aseptic precautions, 5 ml of blood was drawn from the antecubital vein into a syringe containing EDTA. This was centrifuged at 1500 rpm for 30 minutes. The supernatant plasma was discarded and smear was prepared from the buffy coat (BC). Slit-skin smear (SSS) and peripheral smear (PS) were also done in all patients. All the smears (BC, SSS, and PS) were stained with Ziehl-Neelsen method.

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Results

Slit-skin smear for acid-fast bacilli (AFB) was positive in 10 patients, 5 cases of LL and 5 cases of BL. Buffy coat smear showed AFB in 2 LL patients, who had a bacteriological index (BI) of 5+ and 4+, respectively. Out of these 2, one also had AFB in the peripheral blood. Bacilli were extracellular in location and granular in morphology. Both of them were receiving MB-MDT at the time of the test.

Discussion

Bacteremia in leprosy patients can be determined using buffy coat (BC) smear, leukocyte adherence (LA) or hemolysis (HA) technique.² Using BC, AFB could be detected in 33.3% of our LL patients in contrast to Padma *et al.* who had detected AFB in 68% of their LL patients.³ False positivity was high in their study when finger prick method was used to collect blood. In order to minimize contamination with skin flora, they preferred antecubital vein, as the bacilli are found in much smaller number in the skin of body fold than elsewhere in the body. Also, to enhance true positivity rate, they have used the double syringe method and have counted only

intracellular bacilli.³ This may be erroneous as bacilli laden cells may rupture spontaneously or during preparation of the smear, thereby releasing bacilli into the extracellular space. Though we could not do a quantitative assessment, previous studies have reported bacteremia to the tune of 10^5 bacilli/ml of blood.¹ No correlation exists between the bacterial loads in the skin to that in the blood, so the chance of finding AFB in blood is small compared to skin.³ Though bacillemia has been reported in various types of leprosy, we could detect AFB only in lepromatous leprosy.

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