

2nd International Conference on

MEDICAL AND CLINICAL MICROBIOLOGY

July 16-17, 2018 Melbourne, Australia



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Diagnostic solutions for musculoskeletal tuberculosis in disease endemic regions

Musculoskeletal tuberculosis most often involves the spine, followed by tuberculous arthritis in weight-bearing joints and extra spinal tuberculous osteomyelitis. Microbiological diagnosis of osteoarticular tuberculosis is difficult since it is mostly a paucibacillary disease. This study had been designed to evaluate the results of the Mycobacteria Growth Indicator Tube (MGIT) over conventional methods for diagnosis of musculoskeletal tuberculosis. Clinically suspected cases of musculoskeletal tuberculosis having an abscess were enrolled in the study. A total of 30 aspirate samples were collected and processed as follows: (1) Direct microscopy by Ziehl-Neelsen staining, (2) Culture on Lowenstein-Jensen (LJ) medium and (3) Culture in mycobacteria growth indicator tube. The samples that yielded a positive culture for *Mycobacterium tuberculosis* on LJ medium and MGIT were further subjected to drug susceptibility testing using proportion method and MGIT SIRE kit, respectively. Out of the 30 samples tested, 10 (33.33%) showed growth of *Mycobacterium tuberculosis* in MGIT, 7 (23.33%) showed growth of MTB on Lowenstein-Jensen medium and only 4 (13.33%) showed presence of Acid Fast bacilli on Ziehl-Neelsen staining. The mean duration for detecting MTB by MGIT was 15.09 days whereas on LJ culture it was 29.33 days. Of the 10 samples that were positive for MTB using MGIT, 1 (1.00%) sample was detected as Rifampicin and Isoniazid resistant. No drug resistant MTB was detected using proportion method. The key advantage of MGIT was that it detected MTB in 3 cases that showed no growth on LJ culture. The MGIT results were available in about half the time. MGIT also yielded one resistant case which was missed by LJ culture. Thus, MGIT offers a faster and improved method of detecting musculoskeletal tuberculosis in disease endemic regions.

Biography

Chandra Prakash Baveja is the Director, Professor and Head of Microbiology at Maulana Azad Medical College, New Delhi. He was awarded an International Fellowship at Royal Postgraduate Medical School and Hammersmith Hospital, London, UK. He has also conducted research work on Polymerase Chain Reaction at London School of Hygiene and Tropical Medicine. He has been teaching microbiology to medical undergraduates for past three decades. He was honored with the Best Medical Educationist award in 2000. He has been mentoring postgraduates for the last 25 years. He has been involved in research work with particular emphasis on diagnosis of tuberculosis. He has supervised a number of PhD students with research work on tuberculosis. He is also the Nodal Officer and In-Charge for State Reference Laboratory for HIV testing.

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