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## Current applications of mass spectrometry in clinical microbiology

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Identification of microbes has been a time consuming component of Clinical microbiology laboratory. Automation in microbiology can reduce the turn-around time significantly. Identification of protein signatures has been considered as an alternative approach for identification. Currently Microflex LT Biotyper system and Mass Spectrometry has revolutionized the identification of pathogens. Our study focussed on estimating the reliability and feasibility of Microflex Biotyper for identification of bacterial and yeast isolates in a Neurocare centre. We analyzed a total of 64 bacterial and 19 fungal isolates obtained from clinical specimen with suitable control strains. The spectra were recorded in the linear mode and subsequently analysed using microflex MALDI Biotyper software and database. The study was able to identify most of the gram positive and gram negative common bacterial isolates, *Candida species* and *Cryptococcus neoformans* with good resolution and confidence. However, in terms of mycobacterial isolates issues of inability to identify control and clinical isolates was noted. We proposed that refinement of Mycobacterial database can help us in achieving better identification. Most notable in our study was the results were available in less than 10 minutes which is unprecedented. Prospects of proteomics based identification approach are very encouraging. Systems such as MS or Biotyper provide rapid identification of the isolates. Our study shows Biotyper to be sufficiently rapid and reliable identification for most bacterial and yeast isolates. We also found the system to be less efficient for mycobacterial identification. Moreover the system has indirect means of detecting testing of antibiotic resistance in infectious agents.

## Biography

Raju Ravikumar has completed his Doctor of Medicine from Bangalore University and further got certificate course in Immunology from University of London. He is the professor and Head of Neuromicrobiology at National Institute of Mental Health and Neurosciences Bangalore, India. He has published more than 40 scientific papers in national and international journals and is serving as life member in many Microbiology associations. He has conducted many workshops, CME's and one chapter conference in Microbiology. He is in several administrative committees of the Institute. He is one of the senior microbiologists of India.

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