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## Molecular patterns of multidrug resistance of *Mycobacterium leprae* in India

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Leprosy caused by multidrug-resistant *Mycobacterium leprae* is an emerging public health concern worldwide. Global efforts to control leprosy by intensive chemotherapy have led to a significant decrease in the number of registered patients. Current recommended control measures for treating leprosy with MDT are designed to prevent the spread of drug-resistant *M. leprae*. However, drug resistance has been reported since 1964 for dapson, 1976 for rifampicin and 1996 for ofloxacin. We report here the identification of a multidrug-resistant strain of *M. leprae* from relapsed leprosy patients from an endemic region in India. The drug resistant profiles of the isolated strains were confirmed by the identification of mutations in genes previously shown to be associated with resistance to each drug (Rifampicin, Dapson and Ofloxacin). Two hundred and fifty slit- skin smears samples were collected from relapse leprosy cases from different hospitals of The Leprosy Mission across India between 2009 and 2016. DNAs were extracted from these samples and analyzed for PCR targeting genes associated

with drugs (Rifampicin, Dapson and Ofloxacin) in *M. leprae*. Thai-53 (Wild-type) and Zensko 4 (MDR) strains were used as reference strains. Twelve strains showed representative mutations in more than two genes and two strain showed mutation in all three genes responsible for rifampicin, dapson and ofloxacin. Among these eleven strains 9 strains were showed mutation in rifampicin and dapson and 3 showed in dapson and ofloxacin. The study showed occurrence of MDR strains of *M. leprae* in MDT treated leprosy patients from endemic regions of India.

### Speaker Biography

Mallika Lavania has completed her PhD from Agra University. She is the Senior Research Scientist of Stanley Browne Laboratory, The Leprosy Mission Trust, India, a premier organization which works with individuals and communities disadvantaged by leprosy, irrespective of caste, creed and religion, by addressing their physical, mental, social and spiritual needs to uphold human dignity and eradicate leprosy. She has published more than 30 papers in reputed journals and has been serving as an Editorial Board Member of *BMC Infectious Diseases*.

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