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## OP-6

# Comparative drug susceptibility testing of *Mycobacterium tuberculosis* using conventional agar proportion method and MGIT

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*Mycobacterium tuberculosis* (MTB), the causative agent of tuberculosis (TB) has been responsible for millions of deaths worldwide including Sri Lanka. The major consequence associated is the emergence of Drug Resistant Tuberculosis (DRTB). Confirmative diagnosis of DRTB is time consuming and thus, different countries conduct research on methods with low turnaround time. Herein, we attempted to compare the efficacy of conventional agar proportion method and Mycobacterial Growth Indicator Tube (MGIT) in Drug Susceptibility Testing (DST) of tubercle bacilli isolated as per the standard protocol. In brief, Ziehl-Neelsen positive sputa were collected from 20 newly diagnosed TB patients reported to chest clinic, Kandy. The sputa were decontaminated using the modified Petroff's method, inoculated on Lowenstein-Jensen media and incubated at 37°C for 4-8 weeks. MTB isolates were tested for susceptibility to three first line drugs: Isoniazid (INH), Rifampicin (RIF) and Ethambutol (EMB) using 1) Agar proportion method; Middle-Brook 7H11 medium and 2) MGIT (BACTEC diagnostics, USA) as per manufacturer's guidelines. 95% (19/20) of the isolates produced correlative results in both methods, where all except 2 were susceptible to the drugs tested, which were INH resistant. However, one more isolate was identified as INH resistant by MGIT. The conventional method required 4-8 weeks while MGIT required only 12-15 days. Hence, the two methods are not 100% correlative and MGIT gives more accurate results within a shorter time. Since accurate DST results are crucial for TB management in the country, it is essential to conduct comparative studies to identify more accurate and fast options. Liquid media incorporated methods like MGIT need to be incorporated in diagnosis for optimum results in a shorter time frame.

**Keywords:** Drug susceptibility testing, Mycobacterial Growth Indicator Tube, Tuberculosis.

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