High ethionamide resistance in *Mycobacterium tuberculosis* strains isolated in Kenya

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**Background:** Increasing development of tuberculosis (TB) resistance to the currently available drugs including second-line anti-TB drugs that are being used for treatment of Multi-Drug Resistant TB (MDR-TB) patients has frustrated efforts to control TB worldwide. Ethionamide (Eth) is one of the drugs used in the regimen for treatment of these patients.

**Methods:** A total of 216 MTB strains with pre-determined first-line drug susceptibility testing (DST) results were used including 78 first-line resistant to individual and combined drugs, and 138 susceptible to streptomycin, rifampicin, isoniazid and ethambutol. The strains were subjected to DST to ethionamide among other second-line.

**Results:** Thirty two [32/216 (14.8%)] strains showed resistance to second-line drugs. Resistance to Eth was the highest [18/32 (56.3%)] including co-resistance with isoniazid [8/18 (44.4%)]. Nine [9/18 (50%)] strains were fully resistant and 9 [9/18 (50%)] were intermediate resistant to Eth.

**Conclusion:** Unexplainable high levels of Eth resistance is a cause for concern. This will impact negatively on the outcome of management of MDR-TB especially in Kenya where the use of this drug is almost mandatory. Close monitoring of Eth before initiating individual patient management may be necessary.

doi:10.1016/j.ijid.2010.02.2172