

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 3711

**Publication Number:** P2788

**Abstract Group:** 10.2. Tuberculosis

**Keyword 1:** MDR-TB **Keyword 2:** Tuberculosis - diagnosis **Keyword 3:** No keyword

**Title:** Genotype MTBDR (Hain) test in suspected MDR-TB patients

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**Body:** Introduction: Diagnosis of MDR-TB in Thailand was delayed because of insufficient investigation. Hain Test was a new easy and rapid technology. Aims: To evaluate accuracy of Hain test compared with conventional culture. To evaluate the judgment of chest physician for starting treatment. Method: Diagnostic and observational study, 100 previous TB treatment and suspected MDR-TB patients who attended Central Chest institute were inclusion between Sep- Dec 2012. They were assessed direct smear test, conventional culture and DST. Physician judgments of MDR-TB treatments were observed. Results: 53 patients of failure, 23 of relapse, 24 of default were inclusion. Periods of time from first diagnosis of TB until suspected MDR-TB were 4-240 months. 65%, 31 %, 4 % samples of Hain test were M. TB positive, negative, and MOTT positive. DST of Hain test showed 46 % were IR resistance, 10 % INH and 3% RF resistance alone. Sensitivity, specificity, PPV, NPV of MDR-TB Hain test were 85%, 79%, 46%, 96%. 7 had positive MOTT (M. abscessus) in conventional culture and only 1 patients has positive Hain test together. Sensitivity, specificity, PPV, NPV for MOTT diagnosis of Hain test were 14%, 96%, 25%, 92%. The 63 % chest physicians judged to treat following Hain test. There was correlation between judgments of starting MDR-TB treatment and IR resistance Hain test report ( $p=0.03$ ). No correlation between judgments and pattern of previous TB treatment ( $p=0.16$ ), and periods of time from first to suspected MDR-TB ( $p=0.18$ ) were demonstrated. Conclusion: We recommended using Hain test in diagnosis of MDR-TB in highly suspected case and waiting for conventional culture in MOTT. Most physicians decided to start MDR-TB regimens after receive IR resistance Hain test report.