



VOLUME 13
NUMBER 12
DECEMBER 2009
SUPPLEMENT 1

PAGES 51-5406
ISSN 1027 3719

The
International
Journal of Tuberculosis
and Lung Disease

The Official Journal of the International Union Against Tuberculosis and Lung Disease

ABSTRACT BOOK

**40th World Conference
on Lung Health of the
International Union Against
Tuberculosis and Lung Disease (The Union)**

CANCÚN • MEXICO
3-7 DECEMBER 2009

PS-95499-07 Comparison of molecular and culture-based stool testing for diagnosis of pulmonary tuberculosis

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Aim: Establishing a microbiologic diagnosis of pulmonary tuberculosis is difficult in patients unable to provide sputum samples. Most sputum is swallowed and we therefore evaluated molecular and culture-based tests for detecting *M. tuberculosis* from swallowed sputum in stool samples for the diagnosis of pulmonary tuberculosis.

Methods: We analyzed 860 stool samples from 431 adults with pulmonary tuberculosis. Diagnostic sensitivities were compared between an IS6110 nested polymerase chain reaction (PCR), the Microscopic-Observation Drug-Susceptibility (MODS) culture assay, culture on antibiotic-enriched selective 7H10 thin-layer agar, and culture on conventional Lowenstein-Jensen agar. Prior to culture, samples were decontaminated with the n-acetyl cysteine technique

traditionally used for sputum samples. Contamination rates and time to positivity were compared for the different culture techniques.

Results: Overall sensitivity was similar for PCR (13%) and culture (12%) ($P = 0.5$). Auramine stained microscopy was positive in 7.2% of samples. PCR and culture had similar sensitivity when stratified by microscopy results (positive microscopy: PCR 74% vs. culture 77%, $P = 0.7$; negative microscopy: PCR 9% vs. culture 7%, $P = 0.3$). MODS had the highest sensitivity, detecting 87% (89/102) of samples with any positive culture result. Contamination rates were low for MODS (2.1%) and thin-layer agar (2.7%) but significantly higher for Lowenstein-Jensen (11.9%) ($P < 0.01$). Time to culture positivity was shortest for MODS and longest for Lowenstein-Jensen (Figure).

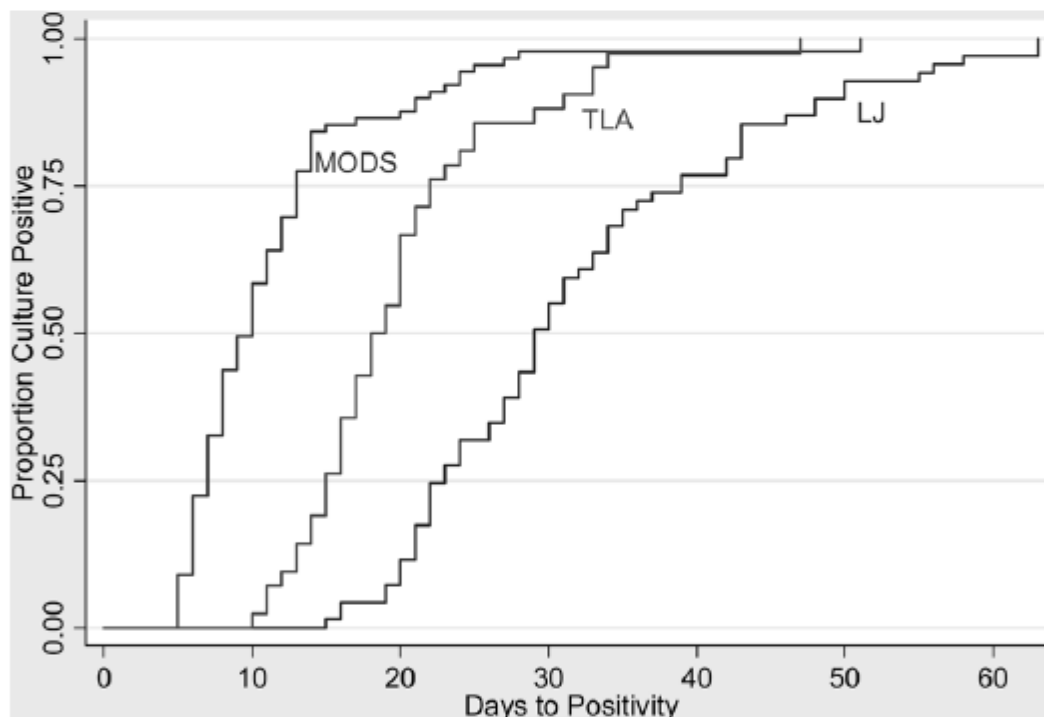


Figure Time to culture positivity. LJ = Löwenstein-Jensen agar; MODS = Microscopic-Observation Drug-Susceptibility assay; TLA = thin-layer agar.

Conclusions: PCR and culture of stool specimens have similar sensitivities for the diagnosis of pulmo-