The 39th IUATLD World Conference on Lung Health

LATE-BREAKER SESSION ON TUBERCULOSIS

Monday, 20 October 2008, 08:45–11:15, Bordeaux Room
Paris, France

DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION
The 39th Union World Conference on Lung Health and the Centers for Disease Control and Prevention, Atlanta, Georgia, USA are pleased to co-sponsor the TB Late-Breaker Session. The session will feature 10 interesting presentations from around the world. Each presentation will be 10 minutes in length, followed by 5 minutes discussion time. Copies of the presentation abstracts will be available at the session. We look forward to seeing you there and to having a stimulating discussion around these issues.

With our regards,
Margarita Elsa Villarino, MD, MPH
Philip LoBue, MD, FACP, FCCP
Edward A. Nardell, MD

Centers for Disease Control and Prevention &
International Union Against Tuberculosis and Lung Disease

08:45-08:55 am  A simple colour test for diagnosing DRTB & NDRTRB under field conditions

09:00-09:10 am  Prevalence of tobacco use among TB DOTS-Patients in Cambodia: relevant findings for tobacco and Tb control

09:15-09:25 am  Early mortality in adults treated for pulmonary tuberculosis in Blantyre, Malawi
Banda P, Wait C, Hevederman RS, Coeberhout J, Pir Mohamed M, Squire SB (Malawi UK)

09:45-09:55 am  Drug resistant tuberculosis in Brazil: a national survey, 2006-2008
A simple colour test for diagnosing MDRTB & XDR_TB under field conditions

Beatriz Herrera1, Eric Ramos1, Robert H. Gilman2,3, Louis Grandjean2, Laura Martin2, Jessica Alvarado1,2, Willi Quino1, Gurinder Sandhu1,2, Jessica Alva1,2, Rosario Sosa1,2, Silvia Carrera1,2, David Coleman1, Denis Mitchison1, Carlton Alexander Evans2,3,4

1Universidad Peruana Cayetano Heredia, Lima, Peru; 2Asociación Benefica Prisma, Lima, Peru; 3Johns Hopkins Bloomberg School of Hygiene & Public Health, USA; 4St. George’s Hospital Medical School, London, UK; 5London School of Hygiene & Tropical Medicine, UK.

Background: The complexity and biohazard of conventional procedures largely restrict the use of TB culture and drug-susceptibility testing to reference laboratories. Thus sensitive TB, MDRTB and XDR_TB diagnostics are infrequently available to patients in resource-poor settings who have greatest need for them.

Objective: To optimize safe sputum processing and culture for TB diagnosis and drug susceptibility testing for basic field laboratories in resource-poor settings.

Methods: Patients with suspected pulmonary TB expectorated into sputum pots containing disinfectant transport medium that liquefied and decontaminated sputum during transit. The sputum samples took between 6 hours and 5 days at room temperature to reach the laboratory. On arrival in the laboratory, the contents of the sputum pot were applied directly without any processing to each quadrant of a culture plate. The culture plate contained a transparent thin-layer of 7H11 agar made selective with antimicrobials to prevent contamination and also incorporated a colour-change indicator to detect positive cultures. Direct drug susceptibility testing for isoniazid, rifampicin and ciprofloxacin was also carried out concurrently in the other quadrants of the same culture plate. Immediately after sputum application, the culture plates were closed, double-sealed and incubated. Positive cultures were identified by naked-eye examination for colour change and M. tuberculosis was further confirmed by examining the areas of colour change within the sealed plates under a microscope with a 4x objective. For comparison, the same patients expectorated another sputum sample into a normal dry pot that was processed by the gold-standard Centres for Disease Control reference laboratory technique utilizing N-acetyl L-cysteine NaOH decontamination with centrifugation, vortex re-suspension and culture on 7H11 agar.
Results. For 385 sputum samples cultured by both methods, 149 were culture-positive for *M. tuberculosis* by one or both methods, 49% of which were also smear microscopy positive. The sensitivity of the novel test was 91%, significantly more sensitive than the conventional centrifuge decontamination method (74% diagnostic sensitivity, p=0.0001) and yielded significantly more colonies (p<0.0001). The median estimated time to culture positivity with concurrent drug-susceptibility testing was 16 days, slightly faster than the centrifuge-decontamination method (p<0.01). Contamination resulted in the loss of 3.6% and 1.0% of test results, respectively (p=0.02). Processing 30 fresh sputas with the novel test took less than an hour, required less training and involved a similar sample processing bio-hazard to sputum smear microscopy, after which cultures were permanently scaled. In contrast, standard centrifuge decontamination took several hours, required specialized skills and risked biohazardous aerosol formation. The colour test materials cost ~$1 and utilized standard laboratory equipment (a normal incubator and a conventional microscope).

Conclusions: This simple colour-change technique allows safe, inexpensive and sensitive TB diagnosis with concurrent testing for MDRTB and screening for XDRTB in basic field-level laboratories. This has the potential to make modern TB diagnostics more widely accessible in resource-poor settings, increasing equity in TB diagnosis.

Prevalence of T
Relevant finding

'Saly Saint, 'Ta. Kennedy, 'Ikus Jimba

'National Cente Tobacco Free In International To Canada; 'Reseen Japan; 'Departin Japan

Background: C. tuberculosis (TB) and death rate is the highest smok for women in gc behavior survey Planning in 2004 has notified the tit Control (FCTC)

Objectives: To t and identify the experiences with

Methodology: A randomly selectc (Syy Rieo=46 235/100,000). P; older who n collected through CSPro 3.3 and S

Results: The pat (SD=15.1) and 2 smokers (men: 1;
current smokers t patients (33.5%) TB diagnosis (55 patients (420%) TB services. and