Union/CDC Late-breaker Session on Tuberculosis

DECEMBER 7, 2009

Cancun, México
Room Gran Cancun 4

The 40th 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, Philip LoBue, and Edward Nardell
Centers for Disease Control and Prevention
International Union Against Tuberculosis and Lung Disease

Presentations

08:45-08:55 Impact of periodic case-finding for symptomatic smear-positive disease on community control of prevalent infectious tuberculosis: a community randomized trial of two delivery strategies in Harare, Zimbabwe (DETECTB: ISRCTN84352452)
EL Corbett, T Bandason, T Duong, E Dauya, B Makamure, GJ Churchyard, BG Williams, SS Munyati, AE Butterworth, PR Mason, S Mungofa, RJ Hayes

09:00-09:10 Household TB clustering associated with TB reactivation and poverty
K Zevallos, J Alvarado, W Quino, P Fuentes, P Sheen, B Herrera, T Valencia, E Ramos, J Alva, M Rivero, R Montoya, RH Gilman, CA Evans

09:15-09:25 Increasing second-line drug resistance among extensively drug-resistant tuberculosis patients in rural South Africa
S Shah, J Richardson, P Moodley, S Moodley, P Babaria, M Ramtahal, S Heysell, A Moll, G Friedland, W Sturm, N Gandhi

09:30-09:40 High mortality rates among adults and children with suspected tuberculosis at healthcare facilities in Moshi, Tanzania
B Njau, EA Reddy, SC Morpeth, AC Tribble, JE Stout, L Msuya, JA Crump, JF Shao, AB Morrissey, CD Hamilton

09:45-09:55 An update on drug-resistant tuberculosis in Africa
W Nkhoma, D Falzon, M Zignol, W van Gemert, A Wright, E Jaramillo

10:00-10:10 Association of helminthes infection and risk of active tuberculosis disease
R Fatima, N Baloch, E Qadeer

10:15-10:25 Highly effective upper room ultraviolet germicidal air disinfection (UVGI) on an MDR-TB ward in Sub-Saharan Africa
M Mphahlele, A Dharmadhikari, K Vetner, C Ladva, M First, M Pagano, P Jensen, M Van der Walt, E Nardell

10:30-10:40 Real time PCR usefulness in the diagnosis of drug-resistant tuberculosis in Veracruz, México
R Zenteno, B Cuevas, JC Zenteno, A Cuellar, A Parissi

10:40-11:15 Discussion

Household TB clustering associated with TB reactivation and poverty

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B Herrera[1], T Valencia[1], E Ramos[1], J Alva[1], M Rivero[1],
R Montoya[1], RH Gilman[1,2,4], CA Evans[1,2,3,4]

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Background: TB often clusters in people living together and this is usually assumed to be caused by recent household transmission of the same TB strain. However, in resource-poor settings most adults have latent TB infection, TB susceptibility is increased by poverty and socio-economic challenge to a household could cause concurrent reactivation of different TB strains in household members. We used molecular epidemiology to study the relative importance of these two potential explanations for TB household clustering in a poor community with high TB incidence.

Methods: We prospectively studied the determinants of TB transmission and susceptibility for 7 years in a 600,000 person Peruvian shantytown with TB incidence of 162 cases per 100,000 population/year and HIV sero-prevalence of 0.5%. This identified 69 households in which TB was diagnosed in an index-case followed by a household contact from both of whom the TB strains were available. These TB strains were compared with the Microscopic-Observation Drug-Susceptibility (MODS) and thin-layer agar assays for antibiotic-susceptibility testing and by spoligo-typing to test for TB transmission.

Results: The household contact had a different TB strain from the index-case in 27% of cases, and these different strains had different isoniazid and rifampicin susceptibility in 76% of cases. These episodes of household TB caused by different TB strains were more likely if the contact case occurred *sooner* after the index case (P=0.02); after a median of 82 days (inter-quartile range 33-212 days). Household clustering caused by different TB strains was significantly associated with household debt (P=0.05).

Prevalence of culture-positive TB declined from 6.5 to 3.7 per 1000 (RR 0.56, adjRR 0.590; 95%CI:0.40-0.89), with greater impact on HIV-negative (adjRR 0.42; 95%CI:0.22-0.67) than HIV-positive disease (adjRR 0.75; 95%CI:0.44-1.26, effect modification p = 0.17). Smear-positive trends were similar (overall reduction 43%; 59% for HIV-negative TB; 22% for HIV-positive TB).

Conclusions: Mobile vans outperformed door-to-door visits in detecting smear-positive TB, especially in high HIV-prevalence neighbourhoods. Periodic case-finding substantially improved control of prevalent infectious TB, especially HIV-negative disease. This holds promise of rapid impact on TB transmission and thence incidence among both HIV subgroups if widely implemented, more so if combined with interventions providing additional prevention of HIV-related TB.