Final Abstract Number: 47.021
Session: Tuberculosis & Other Mycobacterial Infections
Date: Friday, June 15, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

Does the time of isolation need to be re-evaluated in prisoners with tuberculosis?

L. López[1,*], Z. Rueda[2], L.A. Vélez[2], M.R. Giraldo[3], D.M. Marín[2], E. Zapata[4], G. Mejía[4], J. Robledo[4], M.P. Arbeláez[2]

[1] *Universidad de Antioquia, Medellín, Colombia*
[2] *Universidad de Antioquia, Medellin, Colombia*
[3] *Gobernación de Antioquia, Medellin, Colombia*
[4] *Corporación para Investigaciones Biológicas, Medellín, Colombia*

Background: According to WHO, CDC, IDSA and ATS guidelines, patients with pulmonary tuberculosis (Tb) can be considered as non infectious when: 1) they are receiving multiple drugs for 2 to 3 weeks; 2) there is an improvement in clinical condition; 3) the likelihood of MDR-Tb is very small. Objective: To determine the time for sputum reversion since the start of anti-Tb treatment in prisoners from four jails in Medellin and Bucaramanga, Colombia between May 2010 to April 2011.

Methods: Prospective cohort study. All prisoners diagnosed with Tb by sputum smear or culture were followed for two years: monthly for the first six months after the start of treatment, bimonthly the next six months, and quarterly the second year. During follow-up, we took two spontaneous and one induced sputum samples for auramine-rodhamine stain, and cultures in thin layer agar, Löwestein-Jensen and MGIT for the both first samples. We did time to event analysis.

Results: We could follow 45 of 47 positive patients (one was transferred to another jail and one Tb-related death). The median for sputum smear reversion was 33 days (IQR: 31-60), and for culture was 55 days (IQR: 32-68). 90% of the patients had sputum smear and culture negative at 102 days. The time for sputum to become negative by culture had a positive correlation with the sputum grade at the moment of diagnosis: negative smear with positive culture= median 31.5 days, smear with 1+ = 58.5 days, smear 2+ = 62 days, and smear 3+ = 65 days (p value = 0.007).

Conclusion: After starting treatment the reversion of cultures took two or more months in ≥50% cases. That is forcing us to rethink the recommendations about the isolation of patients with pulmonary Tb in prisons, and suggests the need to use mycobacterial cultures on sputum to follow-up those patients.

http://dx.doi.org/10.1016/j.ijid.2012.05.956

Final Abstract Number: 47.023
Session: Tuberculosis & Other Mycobacterial Infections
Date: Friday, June 15, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

Evaluating the cost-effectiveness of TB diagnostic strategies in HIV-positive patients in Lusaka, Zambia

L. Mishra[1,*], G. Henostroza[2], J. Harris[2], M. Siyambango[2], A. Krunner[2], K. Kaunda[2], I. Zikazwe[3], C. Moyo[3], S. Reid[2], T. Brewer[1]

[1] *McGill University, Montreal, QC, Canada*
[2] *Centre for Infectious Diseases Research Zambia, Lusaka, Zambia*
[3] *Government of the Republic of Zambia, Lusaka, Zambia*

Background: Zambia is a high burden country for both human immunodeficiency virus (HIV) and tuberculosis (TB) infection and HIV clinic enrollees are a high-risk group for active TB. The advent of low-cost rapid-diagnostic technologies for TB, such as the Gene Xpert MTB/RIF assay and microscopic-observation drug-susceptibility (MODS) culture, suggest an affordable and promising diagnostic method to quickly identify and treat cases, but the cost-effectiveness of these tests are not well-established in high burden areas with a high prevalence of HIV.

Methods: The objective of this study was to determine the cost-effectiveness of different TB diagnostic strategies in a cohort of HIV-infected patients in Lusaka. A cost-effectiveness analysis (CEA) was carried out using decision analysis modeling. Using the cohort proportions of HIV clinic enrollees at the Centre for Infectious Disease Research in Zambia (CIDRZ), the analysis compared the following strategies: standard of care TB diagnosis (a combination of symptom screening, sputum smear microscopy, and chest x-ray in a diagnostic algorithm), enhanced TB screening (symptom screening, sputum smear microscopy, chest x-ray and TB culture), Gene Xpert MTB/RIF Assay, MODS, and empiric treatment. Outcomes analyzed were number of cases of active pulmonary TB diagnosed and incremental cost-effectiveness ratios (ICERS).

Results: Preliminary results from the base case analysis found that the standard of care was US$75.74 per case of TB detected, US$327.80 per case detected using enhanced screening, US$108.90 per case detected using Xpert, and US$41.74 per case detected using MODS. The ICERS ranged from US$34.00 per case averted using MODS or Xpert to US$252.00 per case averted using enhanced screening, where the standard of care was the comparison group.

Conclusion: The decision analysis model suggests that using rapid diagnostics, particularly MODS, is very cost-effective for diagnosing TB in HIV clinic enrollees in Lusaka, Zambia.

http://dx.doi.org/10.1016/j.ijid.2012.05.957