European Respiratory Society
Annual Congress 2013

Abstract Number: 5042
Publication Number: P4677

Abstract Group: 10.2. Tuberculosis
Keyword 1: Epidemiology Keyword 2: Tuberculosis - diagnosis Keyword 3: Public health

Title: Tuberculosis lineage in a low prevalence area; epidemiology and clinical characteristics

Dr. Tom 28865 Hartley thomas.hartley@chsft.nhs.uk MD 1, Dr. Stephen 28864 Murphy stephen.murphy@chsft.nhs.uk MD 1, RN. Sharon 28866 Stothard sharon.stothard@chsft.nhs.uk 1, Mr. Craig 28867 Blundred Craig.C blundred@hpa.org.uk 2 and Dr. Tricia 29311 Cresswell tricia.cresswell@hpa.org.uk MD 2. 1 Respiratory Medicine, Sunderland Royal Hospital, Sunderland, United Kingdom, SR4 7TP and 2 Health Protection Agency North East, Health Protection Agency North East, Newcastle upon tyne, United Kingdom, NE1 4WH.

Body: Background. The UK health protection agency (HPA) recently introduced strain typing of M. tuberculosis isolates using mycobacterial interspersed repetitive unit analysis (MIRU) for routine TB surveillance. Aim of this study was to investigate molecular epidemiology of TB & clinical/epidemiological correlates in Sunderland UK an area of high social deprivation, homogeneous population (93% White British) and low TB prevalence. Methods TB cases (2011-2012) identified. Clinical, bacteriological & epidemiological data obtained. Strain typing of M. tuberculosis isolates by 24 loci MIRU analysis (HPA TB reference laboratory). MIRU24 profiles analyzed using online tools: MIRU-VNTRplus and TBinsight (NIH). Results 47 cases. Race: White-British 61.7%, South Asian 23%, African 8.5%, SE Asian 6.3%. Male 63.8 %, median age (range) 40 (2-86) y, all HIV negative. Extra-Pulmonary (EP) disease > in Asians: 90.5% v 54% (OR 8.1 1.56-42.3). M. tuberculosis isolated in 81% all fully sensitive to first line drugs. MIRU24 profiles available in 32 cases. Lineages: Euro-American (EUA) 56.3% (White British 95%), Indo-Oceanic (IO)18.6 %, East African-Indian (EAI) 15.6%, Africanum 6.3% and East-Asian (EA) 6.3%. Disease phenotype related to lineage: EP disease IO 50%, EAI 30%, EUA 20% (P=0.014). EUA associated with pulmonary or invasive EP disease OR (adjusted for race 95% CI) 7.5 (1.7-33.3). Two epidemiological clusters were confirmed and further unsuspected cluster identified by MIRU24 analysis. Conclusion Distribution of M. tuberculosis lineage in Sunderland is associated with race/ethnicity. Disease type is related to M. tuberculosis lineage. Strain clustering by MIRU24 analysis confirmed epidemiological clusters.