

European Respiratory Society Annual Congress 2013

Abstract Number: 1871

Publication Number: P4685

Abstract Group: 10.2. Tuberculosis

Keyword 1: Tuberculosis - mechanism **Keyword 2:** Tuberculosis - diagnosis **Keyword 3:** Tuberculosis - management

Title: Transmission of MDR-TB by a Haarlem genotype mycobacterium tuberculosis strain among native Greeks

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Body: Aim: To study possible transmission of MDR-TB among native Greeks by molecular genotyping of the Mycobacterium tuberculosis isolates. Patients-Methods: Five isolates were retrieved from 4 patients in Athens (3 males and one female; mean age 38y) who were hospitalized between 2009 and 2012. Resistance mutations were traced by using the Genotype MTBDRplus and MTBDRsl assays (Hain Lifescience, Germany). 24-loci VNTR typing was performed to investigate possible transmission in collaboration with the RIVM, The Netherlands, within the framework of an ECDC/RIVM MDR-TB project 2009-2012 and with the NMRL, UK. Results: All patients were HIV seronegative, without immunosuppression or respiratory diseases other than pulmonary TB. Cavitory lesions on X-ray were described in two cases. The M. tuberculosis isolates harbored the rpoB H526D and katG S315T2 mutations. Two strains also had the gyrA A90V mutation; whereas one had a mixed population of wild-type gyrA and gyrA A90V mutated bacilli. Conventional DST confirmed the molecular data. A gradual clinical, radiological and microbiological improvement was observed in all cases. VNTR profiles of the 4 isolates (one from each patient), were unique in the MIRU-VNTR plus and the UK National Database. However, the VNTR profiles were identical or differed in only one locus and thus revealed active transmission of MDR-TB. Two of the

patients were indeed close contacts. The isolates were identified as Haarlem lineage strains. Conclusion: This study re-emphasizes the transmissibility of MDR-TB and the need of early case finding and infection control. Molecular epidemiology is a very useful tool to reveal this important issue.