

MOLECULAR EPIDEMIOLOGY OF MULTI-DRUG RESISTANT TUBERCULOSIS IN EUROPE

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Purpose of the study: To evaluate the rate and characteristics of international transmission of multi-drug resistant tuberculosis (MDR-TB) in Europe.

Methods: All 53 countries in the WHO European Region report anonymized case-based data on newly diagnosed MDR-TB cases to EuroTB. Corresponding genotyping data (*IS6110* RFLP) is submitted to the database at the RIVM. A European cluster is defined as two or more cases, reported in different countries since 2003, that have isolates with identical RFLP patterns.

Results: In the period 2003-2006, 2,220 MDR-TB cases were reported from 23 countries. 66% of these cases were from the Baltic States. Other significant contributions were from the UK (174 cases) and France (152 cases). Treatment outcome differed significantly by country. XDR-TB amounted 6% of the total number of European MDR-TB cases and 8% of the cases from the Baltic States.

In 519/2,220 cases (25%) RFLP patterns were available and 272/519 cases (48%) were in European clusters. One cluster comprised 174 cases, of which 149 originated in Estonia and the remaining 25 in 8 Western European countries and Israel. In total, 85% of the 272 clustered cases, including the three largest clusters, were caused by Beijing genotype strains. The patients in the 3 largest clusters originated for a large part from former Soviet Union countries.

Conclusions: Transmission of MDR-TB plays a significant role in TB control in Europe, and is for a large part associated with patients of Eastern-European origin. Although the prevalence of TB cases caused by Beijing genotype strains in Europe is low, transmission of MDR-TB is mainly (in 85% of the cases) driven by these strains. The coverage of DNA fingerprinting of MDR-TB cases should be enlarged in the coming period. The upcoming switch to VNTR typing may be a stimulating factor in this respect.