



TUBERCULOSIS 2009, PART II

No. 50, 2010

Table 1. Treatment outcomes including new WHO definitions of MDR-TB

Cured (only culture-positive pulm. TB)	Culture-negative in the last treatment month and at least one previous culture.
MDR cured	Concluded treatment in patient with ≥ 5 consecutive neg. cult. or one positive culture followed by 3 neg. cult. From specimens collected at ≥ 30 -day intervals and with no clinical deterioration within the past 12 treatment months.
Performed (cult. neg. pulm TB and all other types)	Treatment performed which was not in accordance with the cure or treatment failure criteria.
MDR performed	Treatment performed which did not fulfill the cure criteria due to lacking bacteriology.
Failure	Pos. Microscopy/culture ≥ 5 months after treatment initiation.
Death	Death during treatment regardless of its cause.
Discontinuation	Treatment discontinued for ≥ 2 consecutive months.
Transfer	Left the country (DK).

TB among Greenlanders in DK

An increase has been observed in the occurrence of TB among Greenlanders in DK. The number of cases detected in 2009 was 40. In the 2006-2009 period, the number of Greenlanders in DK increased slightly. Taking into account such increase, the incidence up to and including 2008 was 200/100,000 after which it rose to nearly 300/100,000 in 2009. The share of notified cases who were infected in Denmark has not increased in the same period, indicating a general increase in the TB occurrence among Greenlanders in Denmark. The increase continues into 2010 and has currently reached nearly 400/100,000.

Microbiological diagnosis

In 2009 TB diagnosis was confirmed by culture and subsequent identification of species in 242 of 329 (74%) notified cases, including 88 of 114 (77%) Danish cases and 154 of 215 (72%) immigrant cases. On the basis of the EU disease definition, EPI-NEWS 51/09, a total of 242 (74%) were confirmed cases, 14 (4%) probable cases and 73 (22%) were possible cases. Among a total of 260 notified cases of pulmonary TB (\pm other localisation), 200 (77%) cases were verified by culture, including 81 of 100 (81%) Danish cases and 119 of 160 (74%) immigrant cases. Among 81 Danes with culture-verified pulmonary TB (\pm other localisation) and a minimum of one sputum or tracheal secretion test, 51 (63%) had positive microscopy and were regarded as infectious. This proportion was 59% in immigrants (70 of 119). Three immigrants had culture-verified *M. africanum* detected, the rest (239) had classical *M. tuberculosis*.

Resistance

Drug resistance results were available for all 242 culture-verified cases. Among 209 patients (77 Danes and 132 immigrants) notified with confirmed TB for the first time, 12 patients, five Danes and eight immigrants, had isoniazid mono-drug-resistance, and multi-drug-resistance was detected in one patient from Latvia (isoniazid and streptomycin). Among 41 patients notified with previously treated TB, a total of three cases of isoniazid mono-drug-resistance were detected in one Danish and two immigrant patients.

MDR TB

In 2009, two cases of multi-drug-resistant TB (MDR-TB) were detected, i.e. as a minimum resistance to rifampicin and isoniazid and possibly to other antibiotics. Furthermore, resistance to pyrazinamid and streptomycin was detected. A new case of non-infectious pulmonary TB was detected in a young Somalian male. DNA typing showed the same profile as that detected in an infectious Somalian with pulmonary TB in 2004, but no epidemiological link was established. The second MDR case was detected in a previously treated Vietnamese male. He had disseminated disease including meningitis, and resistance to pyrazinamid, streptomycin and ethionamid was also established. Presently, no cases of Extremely Drug Resistant TB (XDR-TB) was detected in DK. The new WHO treatment outcome definitions on MDR-TB and non-MDR-TB are presented in [Table 1](#).

New typing method

A new quick typing method has been introduced. It is known as "Mycobacterial Interspersed Repetitive-Unit — Variable Number of Tandem Repeats" (MIRU-VNTR), and is based on 24 loci in the mycobacterial DNA. The MIRU-VNTR method has the same capacity of discrimination as the previously used, but time-consuming "Restriction Fragment Length Polymorphism" (RFLP) method. Results may be expected within 1-2 weeks after the specimen has turned culture-positive.

Comments to parts I and II

The overall trends in TB of the past

decade have been favourable (Figure 1, EPI-NEWS 49/09). TB occurrence among immigrants from countries with a high TB occurrence has decreased by approx. 50%, mirroring the decrease observed in immigration. The occurrence among Danes has followed a slightly decreasing trend over the past 20 years to reach a historically low level in 2009. However, the decrease among Danes remains slower than that which may be expected in countries with a good national TB control programme, where an annual decrease in the order of 5-7% is habitually seen. The WHO's objective to eliminate TB (< 1 case per 1,000,000) by 2050 seems unrealistic despite the current trend. The slow decrease is primarily caused by the infection chain MIRU 1112-15 (RFLP cluster 2), seen among middle-aged Danish males who are socially exposed or suffer from alcohol dependence. Traditional infection tracing remains necessary, particularly among the above-mentioned groups - and systematic monitoring of treatment outcomes is also essential. Furthermore, the efforts made to detect TB among Greenlanders in Denmark should be intensified. 2009 saw an unusually high number of occupationally infected and in none of these cases the source of infection could be identified. It is important that TB notification is accompanied by specific information on the source of infection so that infection patterns may be mapped by comparing the DNA types of isolates.

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15 December 2010

Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2010 figures are preliminary)

Table 1	Week 49 2010	Cum. 2010 ¹⁾	Cum. 2009 ¹⁾
AIDS	1	55	40
Anthrax	0	0	0
Botulism	0	1	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	12	10
Diphtheria	0	0	0
Food-borne diseases of these, infected abroad	4 2	385 87	505 92
Gonorrhoea	4	475	545
Haemorrhagic fever	0	0	0
Hepatitis A of these, infected abroad	1 0	56 31	33 25
Hepatitis B (acute)	0	27	24
Hepatitis B (chronic)	0	173	156
Hepatitis C (acute)	0	3	6
Hepatitis C (chronic)	0	364	281
HIV	3	252	251
Legionella pneumonia of these, infected abroad	1 0	128 33	122 29
Leprosy	0	0	0
Leptospirosis	0	7	0
Measles	0	4	9
Meningococcal disease of these, group B of these, group C of these, unspec. + other	0 0 0 0	68 33 19 16	70 40 24 6
Mumps	1	32	16
Neuroborreliosis	2	54	59
Ornithosis	1	16	12
Pertussis (children < 2 years)	1	82	105
Plague	0	0	0
Polio	0	0	0
Purulent meningitis Haemophilus influenzae Listeria monocytogenes Streptococcus pneumoniae Other aethiology Unknown aethiology Under registration	 1 0 0 0 0 0	 4 7 67 16 19 1	 6 8 79 11 21 0
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis of these, infected abroad	1 1	91 73	105 84
Syphilis	6	385	246
Tetanus	0	0	0
Tuberculosis	9	382	336
Typhoid/paratyphoid fever of these, infected abroad	0 0	34 32	27 21
Typhus exanthematicus	0	0	0
VTEC/HUS of these, infected abroad	1 0	141 37	147 26

¹⁾ Cumulative number 2010 and in corresponding period 2009

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 49 2010	Cum. 2010 ³⁾	Cum. 2009 ³⁾
Bordetella pertussis (all ages)	4	209	188
Gonococci of these, females of these, males	4 1 3	388 102 286	420 111 309
Listeria monocytogenes	2	59	89
Mycoplasma pneumoniae Resp. specimens ³⁾ Serum specimens ⁴⁾	89 26	764 325	90 132
Streptococci ⁵⁾ Group A streptococci Group B streptococci Group C streptococci Group G streptococci S. pneumoniae	0 3 0 3 17	150 101 53 146 936	139 123 33 167 995
Table 3	Week 47 2010	Cum. 2010 ²⁾	Cum. 2009 ²⁾
MRSA	33	945	692
Pathogenic int. bacteria ⁶⁾ Campylobacter S. Enteritidis S. Typhimurium Other zoon. salmonella Yersinia enterocolitica Verocytotoxin- producing E. coli Enteropathogenic E. coli Enterotoxigenic E. coli	52 12 4 9 1 2 5 6	3599 366 504 617 173 168 187 395	3176 586 749 697 213 159 191 309

²⁾ Cumulative number 2010 and in corresponding period 2009

³⁾ Resp. specimens with positive PCR

⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk

Surveillance of the influenza activity

The sentinel graph and on-call surveillance of the influenza activity in Denmark is now presented in the weekly newsletter "Influenza-Nyt" at www.ssi.dk (Danish language)