



## TUBERCULOSIS 2004, PART II

No. 50, 2005

### Outbreaks

In 2004, there was an outbreak of tuberculosis at a boarding school. The source of infection was a student from Greenland, who had suffered from persistent coughing. The diagnosis was not made until after the end of the school year, when the student had returned to Greenland. On contact tracing, one student with active TB was found. In a large proportion (66%) of the investigated students signs of infection were detected by a positive Mantoux test, and 60% of these were offered prophylactic treatment in their respective home counties. In 2005, one further contact was found to have active TB. Isolates from the three patients had the same DNA pattern. TB was detected in a total of four patients during stay in prison. Three patients, two immigrants and one Dane, were inmates. Isolates from these patients had the same DNA profile. TB was also detected in a fourth person, who had had contact with an infectious patient while working in the prison. There was no growth of mycobacteria, so the DNA pattern could not be determined. Four Somali males were thought to have been infected in a Somali club in Copenhagen. The three were culture-positive and the isolates had identical DNA patterns.

The previously discussed outbreak in Storstrøm County, EPI-NEWS 48/04, continued in 2004 with a further five cases of TB being detected, including three adults and one child, all culture-positive and with identical DNA patterns. TB was detected in another child, but culture was negative, so the DNA pattern could not be determined.

(C. Kjelsø, Dept. of Epidemiology, Z. Kamper-Jørgensen, Mycobacteriology Laboratory, H. Kirkeby, MOH, South Jutland)

### Microbiological diagnostics

The diagnosis of TB was verified by culture in 289 out of 386 (75%) notified cases, including 115 out of 147 (78%) among Danes and 174 out of 239 (73%) among immigrants, representing the same level as in 2001-2003 (75-77%), but a reduction relative to 1996-2000 (average 82%). In a total of 289 notified cases of pulmonary TB ( $\pm$  other localisation), 217 (75%) cases were verified on culture, including 103 out of 131 among Danes and 114 out of 158 among immigrants. In 103 Danes with culture-verified pulmonary TB ( $\pm$  other localisation),

78 (76%) had positive microscopy on at least one respiratory specimen and were thus considered to be infectious. The proportion of Danes with culture-verified infectious pulmonary TB increased from 61% in 2002. For immigrants, this proportion was 60% (69 out of 115) in 2004 and at the same level as for 2003. Mycobacterium bovis was detected in two cases: once in an elderly Danish woman and once in a younger non-resident female.

### Resistance patterns

Resistance patterns were available for all 287 patients (100%) for whom M. tuberculosis was detected on culture, 114 Danes and 173 immigrants. Determination of resistance is routinely carried out for rifampicin (R), isoniazid (H), ethambutol (E) and pyrazinamide (Z), and also for streptomycin (S) when resistance is detected.

A total of 20 patients (7%), seven Danes and 13 immigrants, were found to have TB resistant to at least one of the above-mentioned substances. The following resistance pattern was found: three HS, 15 H and two E. Multiresistance, i.e. resistance to R+H, was not detected in 2004. (Z. Kamper-Jørgensen, V. Ø. Thomsen, Mycobacteriology Laboratory)

### Comments to parts I and II

In the period 2000-2003, there was a decline in the incidence of TB. This trend has not continued in 2004, EPI-NEWS 49/05. Barely 2/3 of all cases of TB are still seen among immigrants. The proportion of patients with resistant TB is comparable with 2003.

A total of 42% (10/24) of immigrant children and all Danish children (10) were said to have been infected in Denmark. The extent to which BCG vaccination is used for children in environments with a high risk of TB is unknown. Among the 10 immigrant children, information was provided about BCG vaccination in only one child, and this had been performed in the home country. No Danish child was BCG-vaccinated.

The continued increase in the proportion of Danes with infectious pulmonary TB suggests that the diagnosis is made late. Thus, it is still important that patients with pulmonary symptoms consistent with TB (e.g. persistent cough or altered coughing pattern in people with existing pulmonary disease, weight loss and night sweat) are referred for further investigation in the event that conventional

treatment is ineffective. For the individual patient, late diagnosis involves an increased risk of developing resistance and of the disease recurring later in life. Late diagnosis also involves a prolonged period of infection. A specific blood test analysis, the interferon- $\gamma$ -test, was recently introduced as an alternative to the existing Mantoux test. In contrast to the Mantoux test, the blood analysis does not cross-react with vaccination, and cross-reacts with only a few, rare non-tuberculous mycobacteria. However, the analysis is only a supplement to traditional diagnostics, since culture is still the only way to make a definitive diagnosis of TB and a prerequisite for both determination of resistance and tracing chains of infection.

(P. H. Andersen, Department of Epidemiology, V. Ø. Thomsen, Mycobacteriology Laboratory)

### TB TREATMENT 2003

For 393 (100%) notified cases of TB in 2003, outcome of treatment is now available, [table 1](#).

The possible outcomes are: 1) Cured, 2) Treatment completed, 3) Died, 4) Treatment failure, 5) Defaulter, 6) Transfer out (patients who leave Denmark during treatment) and 7) Other/unknown. The sum of 1) and 2) constitutes the outcome "Treatment success", EPI-NEWS 49/04.

**Table 1. Treatment outcome for Danes and immigrants, 2003**

Treatment outcome	Danes	%	Immigrants	%
Cured	65	41	65	27
Treatment completed	60	38	150	64
Treatment success	125	79	215	91
Died	23	15	6	3
Treatment failure	0	0	0	0
Defaulter	4	3	7	3
Transfer out	3	2	5	2
Other/unknown	3	2	2	1
<b>Total</b>	<b>158</b>	<b>100</b>	<b>235</b>	<b>100</b>

The larger proportion with the outcome "Died" among Danes can be explained by the fact that these were elderly people. Disregarding the outcome "Died", 94% of the patients were treated with success, regardless of ethnicity.

(P. H. Andersen, Department of Epidemiology)

## Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2005 figures are preliminary)

Table 1	Week 49 2005	Cum. 2005 <sup>1)</sup>	Cum. 2004 <sup>1)</sup>
AIDS	1	54	43
Cholera	0	0	1
Creutzfeldt-Jakob	0	2	8
Food-borne diseases	8	548	599
of these, infected abroad	0	126	110
Gonorrhoea	6	464	329
Hepatitis A	0	62	224
of these, infected abroad	0	22	61
Hepatitis B (acute)	0	31	41
Hepatitis B (chronic)	1	134	138
Hepatitis C (acute)	0	1	5
Hepatitis C (chronic)	5	294	292
HIV	5	255	292
Legionella pneumonia	2	111	102
of these, infected abroad	0	44	32
Leptospirosis	0	9	12
Measles	0	2	0
Meningococcal disease	0	82	90
of these, group B	0	38	51
of these, group C	0	22	12
of these, unspec. + other	0	21	27
Mumps	0	7	5
Neuroborreliosis	0	88	119
Ornithosis	1	20	6
Pertussis (children < 2 years)	1	140	219
Purulent meningitis			
Haemophilus influenzae	0	2	4
Listeria monocytogenes	0	2	3
Streptococcus pneumoniae	0	97	97
Other aethiology	0	16	10
Unknown aethiology	0	16	15
Under registration	3	20	-
Shigellosis	1	104	94
of these, infected abroad	0	81	80
Syphilis	1	119	117
Tetanus	0	2	0
Tuberculosis	11	416	383
Typhoid/paratyphoid fever	1	33	22
of these, infected abroad	0	30	20
Typhus exanthematicus	0	1	0
VTEC/HUS	3	141	147
of these, infected abroad	0	48	34

## Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received at Statens Serum Institut

Table 2	Week 49 2005	Cum. 2005 <sup>2)</sup>	Cum. 2004 <sup>2)</sup>
Bordetella pertussis (all ages)	8	477	997
14	14	432	403
Gonococci			
of these, females	0	45	49
of these, males	14	387	354
Listeria monocytogenes	1	40	37
Mycoplasma pneumoniae	34	1032	570
Resp. specimens 3)	16	768	515
Serum specimens 4)			
Streptococci 5)	0	94	110
Group A streptococci	0	75	86
Group C streptococci	0	25	22
Group G streptococci	0	108	98
S. pneumoniae	36	1029	1147
Table 3	Week 47 2005	Cum. 2005 <sup>2)</sup>	Cum. 2004 <sup>2)</sup>
Pathogenic int. bacteria 6)			
Campylobacter	64	3511	3511
S. Enteritidis	11	619	500
S. Typhimurium	6	523	425
Other zoon. salmonella	9	529	471
Yersinia enterocolitica	4	223	211

Table 1, notes

In 2005, none of the following cases have been reported: Anthrax, botulism, diphtheria, haemorrhagic fever, leprosy, plague, polio, rabies, rubella.

1) Cumulative no. 2005 and corresponding period 2004

Tables 2 & 3, notes

2) Cumulative no. 2005 and corresponding period 2004

3) Respiratory 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](http://www.germ.dk)

## Patients with laboratory diagnosed RSV and rotavirus infection

3rd quarter 2005 compared with 3rd quarter 2004

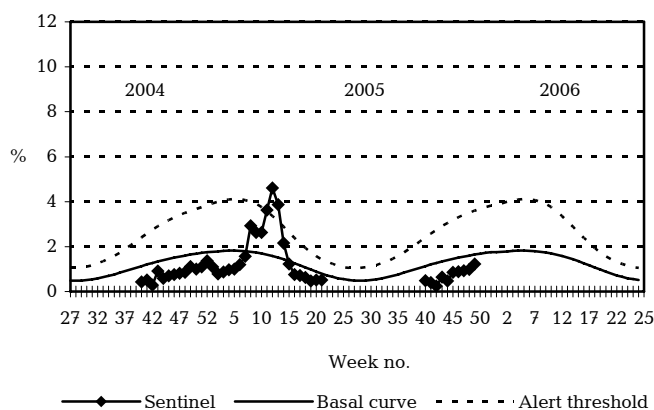
	RSV		Rotavirus	
	2005	2004	2005	2004
July	0	5	3	20
August	2	1	13	12
September	3	3	3	7
Total	5	9	19	39

Reported from Departments of Clinical Microbiology at:

Heming Hospital, Hvidovre Hospital, Slagelse Hospital, Viborg Hospital, Aalborg Hospital, Aarhus Hospital, and the Department of Virology, SSI

## Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2004/2005/2006



Sentinel: Influenza consultations (as percentage of total consultations)

Basal curve: Expected frequency of consultations under non-epidemic conditions

Alert threshold: Possible incipient epidemic