



LEGIONELLA PNEUMONIA 2004

No. 18, 2005

Notified cases

2004 saw 98 notified cases of legionella pneumonia, 69 males and 29 females. The median age was 60, range 24-92. In 82 cases, the diagnosis was verified. The definition of verified legionella pneumonia is presented in EPI-NEWS 43/03. A predisposing factor was stated for 32 patients. Seventeen patients died, [table 1](#).

Table 1. Notified cases of legionella pneumonia, 2004

Category	To- tal	Veri- fied	Disp. fact.	Deaths
Travel assoc.	34	31	6	0
Nosocomial	10	9	9	6
Others, DK	54	42	17	11
Total	98	82	32	17

In 48 (49%) cases, a reminder was sent to request written notification. The distribution by county of verified cases acquired in Denmark is presented in [table 2](#).

Table 2. No. and incidence per 10⁶ of notified verified cases of legionella pneumonia acquired in Denmark, 2004 (2003)

County	2004	(2003)	Incidence per 10 ⁶
Cph. Municip.	5	(5)	10.0
Frh. Municip.	1	(1)	10.9
Copenhagen	8	(7)	12.9
Frederiksborg	3	(6)	8.0
Roskilde	3	(2)	12.7
West Zealand	3	(2)	9.9
Storstrøm	3	(1)	11.5
Bornholm	1	(0)	22.9
Funen	4	(1)	8.4
South Jutland	3	(0)	11.9
Ribe	3	(1)	13.4
Vejle	1	(4)	3.0
Ringkøbing	2	(1)	7.3
Aarhus	8	(4)	12.2
Viborg	2	(0)	8.5
North Jutland	5	(7)	10.1
Total	55 *	(42)	9.0

* Including four travel associated cases acquired in Denmark

Travel associated/imported cases

A total of 34 cases of legionella pneumonia were travel associated, [table 3](#). Of these, 33 were notified to the European Working Group for Legionella Infections (EWGLI). The most commonly reported destinations were Turkey, Italy, Germany and Denmark, accounting for 58% of the cases. Of the travel associated cases acquired in Denmark, two were related to a hotel, one to a camping resort and one to a bathing complex.

Table 3. Travel associated cases of legionella pneumonia, by country of infection, 2004

Country of infection	No. of cases
Turkey	6
Italy	5
Germany	5
Denmark	4
France	2
Spain	2
Rest of Europe	6
Other countries	4
Total	34

Nosocomial cases

There were 10 notified cases of nosocomial legionella pneumonia distributed over eight hospitals. The diagnosis was verified in nine cases, including eight by culture: seven legionella pneumophila and one *L. micdadei*. Six of the notified nosocomial cases died. In one hospital ward, three cases were confirmed, and of these, one was not notified. In three hospitals, there was a correlation between the type of legionella isolated from patient and water samples.

Laboratory confirmed cases

SSI has knowledge of 94 laboratory diagnosed cases of legionella pneumonia in 2004 (verified cases and cases detected by legionella PCR). The cases were detected at SSI or in local clinical microbiology departments. In three cases, including two nosocomial, notification was not received. From 42 patients, legionella spp. were isolated. The isolates were distributed into 25 legionella pneumophila serogroups (sg) 1 (14 Pontiac and 11 non-Pontiac), one sg 2, eight sg 3, two sg 6, one sg 10, one sg 15, one unknown sg (the isolate was discarded before serogroup had been determined) one *L. longbeachae*, one *L. micdadei* and one *L. dumoffii*. On the basis of typing of patient isolates and isolates from water, in one case, the likely source of infection could be ascribed to the water supply in the patient's own home. A series of other attempts to elucidate source of infection did not lead to identification of the sources.

Comments

The total number of cases in 2004 is at the same level as in previous years, though with a slightly smaller proportion of nosocomial cases. The proportion of verified cases has risen relative to the preceding years.

DETECTION OF LEGIONELLA ANTIGEN IN URINE

For at least 56 patients, legionella antigen was detected in one or more urine samples, and for 21 patients, this was the only positive analysis. Detection of legionella antigen is thus one of the most important methods to diagnose legionella pneumonia. Various kits are currently available on the market. In general, these can only poorly, if at all, detect serogroups other than sg 1, and furthermore, not all kits can detect all sg 1 subgroups equally well. As the overview of the culture-confirmed cases shows, about 40% of the legionella cases were caused by serogroups other than 1. Legionella urine testing is thus best at detecting travel associated legionella pneumonia (almost all cases are caused by sg 1 subgroup Pontiac) and poorest at detecting nosocomial legionella pneumonia (all cases are caused by non-sg 1 or sg 1 non-Pontiac). In a few cases, a false positive reaction can be seen on detection of legionella antigen in urine. This false positive reaction can be eliminated by heat-deactivating (boiling) the specimen before it is tested. A case of legionella pneumonia that has been diagnosed solely on the basis of detection of antigen in the urine is thus only considered to be diagnostic/confirmed if the specimen is positive after heat deactivation.

TRAVEL ASSOCIATED LEGIONELLA PNEUMONIA

Most cases of travel associated legionnaire's disease are detected from July to September, but a few cases will be related to travel to the Mediterranean from as early as May/June. It is important that travel associated cases be notified quickly on form 1515 to the Department of Epidemiology, stating country of travel, city, name of place of overnight residence, room number where applicable and period of travel. The cases are reported on to EWGLI. If two or more cases are related to the same place of accommodation, the health authorities in EU countries are obliged to undertake a risk assessment of the place of overnight residence, including investigation of water samples. (S. Uldum, Department of Bacteriology, Mycology and Parasitology, T. Krause, K. Mølbak, Department of Epidemiology)

Individually notifiable diseases

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

Table 1	Week 17 2005	Cum. 2005 ¹⁾	Cum. 2004 ¹⁾
AIDS	4	25	10
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	2	4
Diphtheria	0	0	0
Food-borne diseases	4	94	152
of these, infected abroad	0	17	19
Gonorrhoea	11	191	97
Haemorrhagic fever	0	0	0
Hepatitis A	1	35	44
of these, infected abroad	0	8	9
Hepatitis B (acute)	1	17	12
Hepatitis B (chronic)	0	47	54
Hepatitis C (acute)	0	1	1
Hepatitis C (chronic)	7	97	124
HIV	8	116	95
Legionella pneumonia	1	19	25
of these, infected abroad	0	2	3
Leprosy	0	0	0
Leptospirosis	0	8	1
Measles	0	0	0
Meningococcal disease	0	28	38
of these, group B	0	19	24
of these, group C	0	2	5
of these, unspec. + other	0	7	9
Mumps	1	3	0
Neuroborreliosis	1	16	50
Ornithosis	0	7	2
Pertussis (children < 2 years)	3	71	65
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	0	1
Listeria monocytogenes	0	1	1
Streptococcus pneumoniae	0	40	48
Other aethiology	0	2	3
Unknown aethiology	0	4	8
Under registration	8	30	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	2	33	25
of these, infected abroad	1	30	20
Syphilis	1	34	58
Tetanus	0	2	0
Tuberculosis	14	143	128
Typhoid/paratyphoid fever	0	11	7
of these, infected abroad	0	10	5
VTEC/HUS	4	49	46
of these, infected abroad	1	21	8

¹⁾ Cumulative number 2005 and in corresponding period 2004

Selected laboratory diagnosed infections

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

Table 2	Week 17 2005	Cum. 2005 ²⁾	Cum. 2004 ²⁾
Bordetella pertussis (all ages)	9	228	231
Gonococci	14	148	97
of these, females	4	23	12
of these, males	10	125	85
Listeria monocytogenes	0	10	11
Mycoplasma pneumoniae			
Resp. specimens ³⁾	7	557	56
Serum specimens ⁴⁾	14	435	156
Streptococci ⁵⁾			
Group A streptococci	5	55	54
Group B streptococci	3	20	22
Group C streptococci	3	8	7
Group G streptococci	5	46	35
S. pneumoniae	21	513	599
Table 3	Week 15 2005	Cum. 2005 ²⁾	Cum. 2004 ²⁾
Pathogenic int. bacteria ⁶⁾			
Campylobacter	45	534	620
S. Enteritidis	3	97	86
S. Typhimurium	8	88	90
Other zoon. salmonella	6	137	120
Yersinia enterocolitica	3	61	43

²⁾ Cumulative number 2005 and in corresponding period 2004

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

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2003/2004/2005

