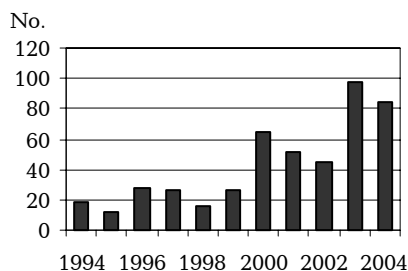


NEUROBORRELIOSIS 1994-2004

No. 33, 2005

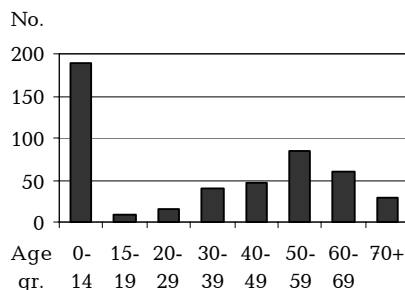
Neuroborreliosis (NB) became individually notifiable in 1994, EPI-NEWS 1/94, on clinical diagnosis and detection of serological markers. In the period 1994 to 2004, there were in all 471 notified cases of NB, varying from 12 to 97 cases a year, [figure 1](#).

Figure 1. Notified cases of neuroborreliosis, 1994-2004



There were 190 (40%) notified cases of NB in children aged 1-14 years, and the second greatest number occurred in the age group 50-59 years, with 84 (18%) cases, [figure 2](#).

Figure 2. Notified cases of neuroborreliosis by age, 1994-2004



Information about symptoms was available for 413 (88%) patients: 196 (47%) had facial nerve palsy; four had palsy of the abducent or oculomotor nerve; one encephalitis and one myocarditis. Five patients had aseptic meningitis, 37 had paraesthesia and 37 had other neurological symptoms. Two patients had arthritis, 49 had pains in the musculoskeletal system and 68 had fever, headache or malaise.

Symptoms

Lyme borreliosis (Lyme disease) is the most common vector-borne disease in Denmark. The infection is caused by the spirochaete *Borrelia burgdorferi* and is transmitted by the tick *Ixodes ricinus*. The clinical manifestations are divided into three stages. The first stage, erythema migrans, usually arises 1-2 weeks (3-30 days) after being bitten by a tick.

The diagnosis is clinical. The second stage occurs 1-16 weeks after the first stage, and includes multiple erythema migrans, lymphadenitis benigna cutis and NB. Here, the diagnosis should be verified by laboratory analysis. If the third, late stage becomes manifest, this occurs months to a few years after exposure. The clinical manifestations are chronic atrophic acrodermatitis or chronic NB. Only 1-2% of patients with NB develop chronic NB.

Prophylaxis

To prevent infection with *Borrelia*, it is important to search the body and remove ticks. When walking in densely infested areas, it is also a good idea to reduce the risk of being bitten by wearing clothes and footwear that cover the body.

Comments

In Denmark, only neuroborreliosis is notifiable. The incidence of NB has previously been estimated at between 100 and 200 cases a year, EPI-NEWS 23/94. In 2000, a reminder procedure was introduced for notification of *Borrelia* investigations performed at SSI. This probably explains the increasing number of notifications since 2000, [figure 1](#).

There are several reasons to interpret the current data with great caution, and it is difficult to draw conclusions about the trend in the incidence of NB over time. Serological diagnostic facilities are decentralised, and there is no central registration of positive laboratory results. In addition, the individual positive serological test result has limited predictive value and should always be interpreted in relation to the clinical picture.

Disseminated and chronic Lyme borreliosis are notifiable in Norway, where 111-251 cases were reported annually in the period 2000-2004. In Sweden, neither Lyme borreliosis nor NB is notifiable.

(A. H. Christiansen, K. Mølbak, Department of Epidemiology)

FATAL CASE OF WHOOPING COUGH IN AN INFANT

In June 2005, a five-week-old child was admitted with expiratory bursts, recessions and desaturation, but without apnoea or cyanosis. Findings on investigation included pulmonary infiltrate, a marked increase in CRP, and leukocytosis. Despite antibiotics,

nasal CPAP and oxygen therapy, the child's condition deteriorated and it was transferred to a subnational intensive care unit. Here, the child rapidly developed circulatory failure because of severe pulmonary hypertension and died. Post-mortem, *Bordetella pertussis* was detected on PCR. Mother and brother had 1 week previously had coryza but no cough.

Comments

Since 1994, when whooping cough became notifiable in children under 2 years, there have been in all five notified cases with fatal outcome, all children under two months. Awareness of the diagnosis of whooping cough and opportunities for prophylaxis are still important, EPI-NEWS 45/02; especially in unvaccinated infants < 3 months, in whom whooping is seldom observed but apnoea and cyanosis occur.

(T. Pedersen, Kolding Hospital, N. Fisker, Odense University Hospital, P. H. Andersen, Department of Epidemiology)

NEW INTERNATIONAL HEALTH REGULATIONS

On 23 May 2005, the 192 WHO member states adopted a new set of International Health Regulations (IHR).

The purpose of the International Health Regulations is to ensure the maximum protection of people against the international spread of diseases, while minimizing interference with world travel and trade. Where previous regulations were primarily directed towards the spread of infectious diseases, the revised IHR has been extended to include chemical or nuclear events.

The regulations govern the roles of countries and WHO in identifying and responding to public health emergencies and sharing information about them.

Under the revised regulations, countries have much broader obligations to build national capacity for routine preventive measures as well as to detect and respond to public health emergencies of international concern.

The new health regulations will formally come into force in June 2007 and may be found on www.who.int. (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 32 2005	Cum. 2005 ¹⁾	Cum. 2004 ¹⁾
AIDS	0	37	30
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	2	7
Diphtheria	0	0	0
Food-borne diseases	16	284	352
of these, infected abroad	6	64	52
Gonorrhoea	3	309	213
Haemorrhagic fever	0	0	0
Hepatitis A	0	41	120
of these, infected abroad	0	10	25
Hepatitis B (acute)	0	23	25
Hepatitis B (chronic)	3	89	90
Hepatitis C (acute)	0	1	2
Hepatitis C (chronic)	5	203	208
HIV	1	189	187
Legionella pneumonia	1	61	51
of these, infected abroad	0	17	14
Leprosy	0	0	0
Leptospirosis	0	9	1
Measles	0	2	0
Meningococcal disease	0	61	67
of these, group B	0	33	39
of these, group C	0	13	9
of these, unspec. + other	0	15	19
Mumps	0	5	1
Neuroborreliosis	2	34	63
Ornithosis	0	12	4
Pertussis (children < 2 years)	0	100	112
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	1	3
Listeria monocytogenes	0	1	1
Streptococcus pneumoniae	0	74	73
Other aethiology	0	11	6
Unknown aethiology	0	11	12
Under registration	3	18	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	3	65	44
of these, infected abroad	0	55	36
Syphilis	0	75	94
Tetanus	0	2	0
Tuberculosis	10	269	270
Typhoid/paratyphoid fever	3	19	11
of these, infected abroad	0	14	9
Typhus exanthematicus	0	0	0
VTEC/HUS	2	93	90
of these, infected abroad	1	35	15

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 32 2005	Cum. 2005 ²⁾	Cum. 2004 ²⁾
Bordetella pertussis (all ages)	5	332	508
Gonococci	11	284	229
of these, females	0	30	29
of these, males	11	254	200
Listeria monocytogenes	0	18	23
Mycoplasma pneumoniae			
Resp. specimens ³⁾	8	635	96
Serum specimens ⁴⁾	7	531	227
Streptococci ⁵⁾			
Group A streptococci	3	79	87
Group B streptococci	14	46	49
Group C streptococci	5	15	13
Group G streptococci	7	76	68
S. pneumoniae	3	766	862
Table 3	Week 30 2005	Cum. 2005 ²⁾	Cum. 2004 ²⁾
Pathogenic int. bacteria ⁶⁾			
Campylobacter	120	1828	1812
S. Enteritidis	28	298	242
S. Typhimurium	12	269	228
Other zoon. salmonella	13	293	252
Yersinia enterocolitica	5	136	115

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