



IMPORTED HAEMOPARASITES 1994-2004

No. 44, 2005

Disease caused by infection with haemoparasites (protozoa and helminths in the blood), such as malaria, leishmaniasis, trypanosomiasis, filariasis and schistosomiasis, constitutes a significant health problem in tropical and subtropical areas where the parasites occur endemically. At the same time, the parasites are to varying degrees the cause of disease among returning travellers, as well as immigrants and refugees from these areas.

Apart from malaria, which is notifiable for the detecting laboratory, there have not been regular reviews of haemoparasites detected in Denmark. The result of investigations of specimens submitted to the Parasitology Laboratory at Statens Serum Institut in the period 1994-2004 is shown in [table 1](#).

Besides the results of microscopic investigation for malaria, data do not cover the whole country but are presumed to constitute an essential part of the overall diagnostics of haemoparasites in the period.

Parasitological investigation of submitted specimen material included microscopy (in combination with culture, where appropriate) and/or antibody testing, dependent on the parasite in question and the clinical problem. The investigations are described in SSI's Diagnostic handbook, www.ssi.dk. In the review, no differentiation is made between species-specific diagnoses within the individual species of parasite. In association with serological investigation in particular, it is not unusual that a patient is tested several times in the course of the same investigation; in this review,

such patients are only counted once. Correspondingly, only the final result of a microscopic investigation is included if several blood tests are analysed in the same clinical episode.

Malaria

The number of patients who tested positive on microscopy has been declining for several years, EPI-NEWS 19/05. In accordance, a small decline in the proportion of people with positive antibody tests is seen. The number of persons investigated for malaria antibodies has been approx. 400-500 tests annually, of which an average of 47% in the period 1999-2004 were submitted by blood banks for screening of potential donors after stays in malaria areas. The rest of the tests were conducted on a clinical basis, e.g. because of persistent suspicion of malaria despite negative findings on microscopy.

Schistosomiasis

Serological investigation for schistosomiasis is often used initially on clinical suspicion after relevant exposure. If serological evidence is found for acute infection, one may, for example on suspicion of *Schistosoma haematobium*, proceed with microscopic investigation of urine. The prevalence of positive serological findings was virtually stable in the period. The number of patients found positive on microscopy was low, between none and seven patients annually.

Leishmaniasis

Culture and microscopy is especially relevant on investigation for the cutaneous form of leishmaniasis (caused

by *Leishmania major*), which can be detected, for example, in chronic sores on the face and on extremities after stays in places such as the Middle East. In the period, one out of 39 patients tested positive on microscopy. The proportion of patients with positive antibody tests has been declining since 1999.

Filariasis and trypanosomiasis

These infections are only quite rarely seen in Danish travellers, but more often among immigrants and refugees. Both parasitic diseases are generally associated with prolonged stays in areas with local endemic occurrence. Serological investigation is the most commonly used method of investigation, although microscopy and culture are also used. The proportion of positive patients has varied from year to year, with a slight declining trend since 1999 as regards filariasis. The African and the South American forms of trypanosomiasis constitute approximately the same proportions.

Comments

This review for the period 1994-2004 shows a low but relatively constant incidence of a series of imported, serious parasitic diseases among Danish travellers and immigrants. However, the incidence of malaria and leishmaniasis has been declining. A review of the overall incidence of these haemoparasites in Denmark requires the involvement of further data from the country's other parasitology laboratories.

(L.S. Vestergaard, Dept. of Bacteriology, Mycology and Parasitology)

2 November 2005

Table 1. Notified malaria cases and positive findings in relation to number of persons tested for haemoparasites at SSI, 1994-2004. Prevalence positive in (%)

Year	Malaria microscopy*	Malaria antibodies	Schistosomiasis microscopy	Schistosomiasis antibodies	Leishmaniasis antibodies	Filariasis antibodies	Trypanosomiasis antibodies
1994	136	21/268 (7.8%)	5/49 (10.2%)	9/80 (11.3%)	2/55 (3.6%)	9/80 (11.3%)	4/17 (23.5%)
1995	172	41/429 (9.6%)	5/55 (9.1%)	10/103 (9.7%)	13/106 (12.3%)	10/103 (9.7%)	4/40 (10.0%)
1996	191	21/372 (5.6%)	7/57 (12.3%)	15/113 (13.3%)	7/66 (10.6%)	15/113 (13.3%)	2/34 (5.9%)
1997	213	30/419 (7.2%)	0/57 (0)	11/111 (9.9%)	7/62 (11.3%)	11/111 (9.9%)	1/34 (2.9%)
1998	174	44/388 (11.3%)	2/69 (2.9%)	11/87 (12.6%)	10/57 (17.5%)	11/87 (12.6%)	4/27 (14.8%)
1999	207	32/444 (7.2%)	3/55 (5.5%)	7/77 (9.1%)	3/87 (3.4%)	7/77 (9.1%)	4/34 (11.8%)
2000	205	41/484 (8.4%)	3/47 (6.4%)	9/91 (9.9%)	5/59 (8.5%)	9/91 (9.9%)	4/33 (12.1%)
2001	154	27/479 (5.6%)	1/50 (2.0%)	5/62 (8.1%)	3/63 (4.8%)	5/62 (8.1%)	8/45 (17.8%)
2002	135	22/521 (4.2%)	4/54 (7.4%)	6/69 (8.7%)	1/59 (1.7%)	5/69 (7.2%)	2/49 (4.1%)
2003	103	16/468 (3.4%)	1/53 (1.9%)	4/68 (5.9%)	0/47 (0)	4/68 (5.9%)	1/24 (4.2%)
2004	106	17/436 (3.9%)	2/41 (4.9%)	6/76 (7.9%)	1/58 (1.7%)	6/76 (7.9%)	6/51 (11.8%)
Total	1796	312/4708 (6.6%)	33/587 (5.6%)	93/937 (9.9%)	52/719 (7.2%)	92/865 (10.6%)	40/388 (10.3%)

* Patients found positive by microscopy, whole country

Individually notifiable diseases

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

Table 1	Week 43 2005	Cum. 2005 ¹⁾	Cum. 2004 ¹⁾
AIDS	1	49	37
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	1
Creutzfeldt-Jakob	0	2	7
Diphtheria	0	0	0
Food-borne diseases	13	462	530
of these, infected abroad	5	114	86
Gonorrhoea	3	415	284
Haemorrhagic fever	0	0	0
Hepatitis A	1	55	199
of these, infected abroad	1	18	57
Hepatitis B (acute)	1	31	35
Hepatitis B (chronic)	2	115	115
Hepatitis C (acute)	0	1	3
Hepatitis C (chronic)	4	261	258
HIV	3	221	250
Legionella pneumonia	2	103	90
of these, infected abroad	0	39	28
Leprosy	0	0	0
Leptospirosis	0	9	7
Measles	0	2	0
Meningococcal disease	0	77	81
of these, group B	0	38	45
of these, group C	0	20	11
of these, unspec. + other	0	19	25
Mumps	0	7	1
Neuroborreliosis	4	72	108
Ornithosis	0	18	5
Pertussis (children < 2 years)	2	132	191
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	1	4
Listeria monocytogenes	0	2	2
Streptococcus pneumoniae	1	91	83
Other aethiology	1	14	7
Unknown aethiology	0	12	12
Under registration	1	22	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	2	90	73
of these, infected abroad	2	72	62
Syphilis	1	108	109
Tetanus	0	2	0
Tuberculosis	3	372	351
Typhoid/paratyphoid fever	1	31	21
of these, infected abroad	0	28	19
Typhus exanthematicus	0	0	0
VTEC/HUS	0	131	129
of these, infected abroad	0	46	27

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 43 2005	Cum. 2005 ²⁾	Cum. 2004 ²⁾
Bordetella pertussis (all ages)	1	426	806
Gonococci	7	375	336
of these, females	0	39	43
of these, males	7	336	293
Listeria monocytogenes	1	32	29
Mycoplasma pneumoniae			
Resp. specimens ³⁾	20	805	235
Serum specimens ⁴⁾	17	647	323
Streptococci ⁵⁾			
Group A streptococci	1	89	103
Group B streptococci	4	67	70
Group C streptococci	2	21	19
Group G streptococci	5	99	91
S. pneumoniae	21	914	995
Table 3	Week 41 2005	Cum. 2005 ²⁾	Cum. 2004 ²⁾
Pathogenic int. bacteria ⁶⁾			
Campylobacter	103	3,048	3,128
S. Enteritidis	7	536	428
S. Typhimurium	15	445	394
Other zoon. salmonella	5	471	421
Yersinia enterocolitica	3	194	185

²⁾ Cumulative number 2005 and in corresponding period 2004

³⁾ Resp. specimens with positive PCR

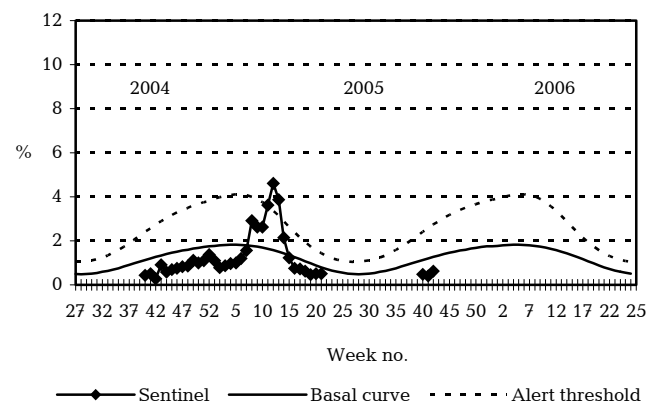
⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 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