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NATIONAL SURVEILLANCE OF COMMUNICABLE DISEASES

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TWO GASTROENTERITIS OUTBREAKS

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OUTBREAK AFTER TRIATHLON

After an ironman triathlon held on 15 August 2010, several participants had diarrhoea and abdominal pain. They had been swimming in Amager Strandpark the morning after an unusually heavy rainfall, which led to a bathing ban later that day. Possibly, the observed cases were caused by contaminated seawater.

In September, SSI performed a cohort study among the attendees to determine scope of the outbreak and identify possible infection sources.

An electronic questionnaire was sent to 1,582 persons, of whom 1,312 had completed the entire distance.

A total of 778 (59%) answered the questionnaire. Among these, 428 (55%) stated having had symptoms of gastroenteritis. Participants who had swallowed seawater had an increased risk of falling ill, RR 2.1 (95% confidence interval 1.6-2.6) which increased to an RR of 2.9 if only diarrhoea cases were included. No other risk factors for disease were identified, including food ingested during the competition.

Many participants fell ill already on the day of the competition, Figure 1. The median duration of diarrhoea was four days (range 1-30 days).

A total of 47 participants had a stool sample tested, 12 of which were positive: three Campylobacter spp., three enterotoxigenic E. coli (ETEC), three Giardia lamblia and two intimin-producing E. coli (A/EEC). Additionally, a case of bloody stools was found.

Commentary

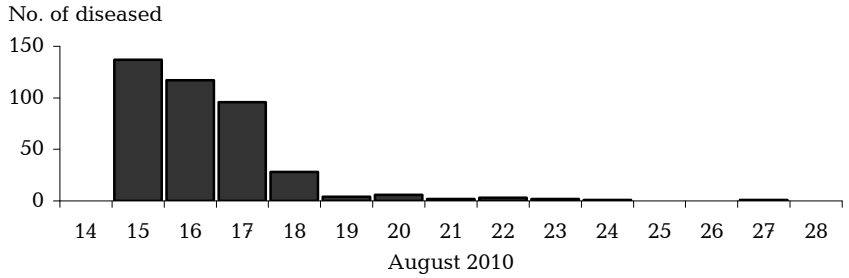
The study showed that a major gastroenteritis outbreak occurred after the competition. The various causative micro-organisms combined with questionnaire answers indicate that parts of the cases were probably caused by contaminated seawater, swallowed while participants were swimming.

A minimum of 12 participants were infected by bacteria or parasites, while others presumably fell ill due to vira or toxins. It is remarkable that so many experienced disease onset already during or shortly after the competition, as such a short incubation period is rare in waterborne diseases.

The considerable physical strain caused by the competition may in some cases have contributed to the symptoms .

(N.M. Harder, S. Ethelberg, K.G. Kuhn, K. Mølbak, Department of Epidemiology)

Figure 1. Disease onset for triathlon participants, August 2010



TEA SAUSAGE SALMONELLA SUB-OUTBREAK

Since March 2010, a nationwide salmonella outbreak caused by Salmonella Typhimurium U323 has affected Denmark. At present, 174 cases have been registered.

As S. Typhimurium U323 had been detected in the monitoring of household animals and food before the outbreak was identified, the Danish Food Authorities were able to initiate targeted follow-up efforts in the early outbreak phases. The outbreak type was detected in pork traced back to a single slaughterhouse. Several consignments of pork were withdrawn, and the slaughterhouse was closed twice for inspection, extra cleaning and disinfection.

Given the microbiological findings, patient age and residential location, several types of pork were probably the source of the infection.

Patients were interviewed about intake of fresh meat, cold cuts, vegetables, and dairy products.

Interviews performed in July showed that a surprisingly hig number of patients had eaten a tea sausage (Teepølse) produced by Højer Pølser. The sausage is a spreadable meat product made from a.o pork. Nineteen patients with confirmed S. Typhimurium U323 infection and the dates of reception (20 July - 30 August) were included in a case-control study with two matched controls per case. The median age was 43 years (range 0-87 years).

The majority resided in Southern Jutland (37%), Copenhagen (21%) or Funen (16%). All had presented with gastroenteritis, and four had been admitted to hospital.

All stated that symptom onset had occurred in the period from 1 July to 29 August, Figure 2.

Results showed that disease was associated with intake of Højers Teepølse, OR 16.5 (95% confidence interval 2.1-130). The patients who had ingested the sausage were significantly younger (median age 22 years) than the remaining patients (median age 62 years). Therefore, it can be concluded that "Teepølse" caused a sub-outbreak of S. Typhimurium U323 in a group of children and young adults.

The presumably infected sausages were sold in convenience stores across Denmark during July and August.

Højer Pølser had received the meat used for the sausages from the slaughterhouse mentioned above.

The sausages were withdrawn on 3 September and consumers who had purchased the sausage were encouraged to discard or return the product to the store.

DTU Food (the Danish Food Institute) and Højer Pølser tested a total of 88 sausages produced in the period from 24 August to 3 September - none tested positive for salmonella.

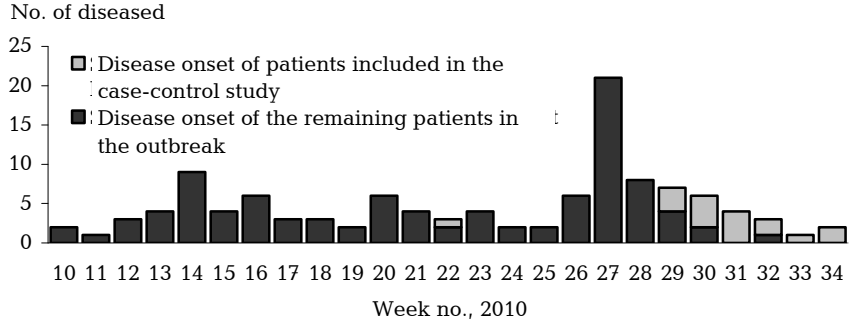
(The Central Outbreak Group, K.G. Kuhn, S. Gubbels, S. Ethelberg, Department of Epidemiology)

PILGRIMAGES TO MECCA

See next page.

27 October 2010

Figure 2. Disease onset for the 2010 S. Typhimurium U323 outbreak



Individually notifiable diseases

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

Table 1	Week 42 2010	Cum. 2010 [1)]	Cum. 2009 [1)]
AIDS	5	47	32
Botulism	0	1	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	14	7
Food-borne diseases	6	336	453
of these, infected abroad	1	74	82
Gonorrhoea	11	403	464
Hepatitis A	1	47	30
of these, infected abroad	1	26	23
Hepatitis B (acute)	0	23	22
Hepatitis B (chronic)	0	160	146
Hepatitis C (acute)	0	2	4
Hepatitis C (chronic)	8	330	260
HIV	7	224	216
Legionella pneumonia	5	99	104
of these, infected abroad	1	24	22
Leptospirosis	1	6	0
Measles	0	4	9
Meningococcal disease	0	56	67
of these, group B	0	26	40
of these, group C	0	18	21
of these, unspec. + other	0	12	6
Mumps	1	30	13
Neuroborreliosis	1	40	42
Ornithosis	0	12	11
Pertussis (children < 2 years)	2	74	96
Purulent meningitis			
Haemophilus influenzae	0	2	5
Listeria monocytogenes	0	5	5
Streptococcus pneumoniae	0	60	68
Other aethiology	0	15	11
Unknown aethiology	0	18	21
Under registration	0	5	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	1	72	91
of these, infected abroad	1	55	73
Syphilis	4	323	209
Tetanus	0	0	0
Tuberculosis	12	320	288
Typhoid/paratyphoid fever	0	30	22
of these, infected abroad	0	28	19
VTEC/HUS	2	124	128
of these, infected abroad	2	32	23

Selected laboratory diagnosed infections

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

Table 2	Week 40 2010	Cum. 2010 [2)]	Cum. 2009 [2)]
Bordetella pertussis			
(all ages)	2	172	176
Gonococci	5	345	351
of these, females	2	93	94
of these, males	3	252	257
Listeria monocytogenes	3	46	68
Mycoplasma pneumoniae			
Resp. specimens [3)]	46	329	60
Serum specimens [4)]	15	225	92
Streptococci [5)]			
Group A streptococci	0	134	124
Group B streptococci	1	92	103
Group C streptococci	0	50	30
Group G streptococci	0	134	140
S. pneumoniae	20	816	830

Table 1, notes
In 2010, none of the following cases have been reported: Anthrax, diphtheria, haemorrhagic fever, leprosy plague, polio, rabies, typhus exanthematicus
[1)] Cumulative no. 2010 and corresponding period 2009

Tabel 3	Week 40 2010	Cum. 2010 [2)]	Cum. 2009 [2)]
MRSA	24	799	599
Pathogenic int. bacteria [6)]			
Campylobacter	64	3042	2673
S. Enteritidis	17	307	500
S. Typhimurium	6	464	683
Other zoon. salmonella	11	525	592
Yersinia enterocolitica	2	155	190
Verocytotoxin-producing E. coli	3	151	129
Enteropathogenic E. coli	5	158	167
Enterotoxigenic E. coli	1	337	259

Tables 2 & 3, notes
2) Cumulative no. 2010 and corresponding period 2009
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

VACCINATION OF PILGRIMS TRAVELLLING TO SAUDI ARABIA

To obtain a visa for Saudi Arabia, anyone above the age of two years shall have received the tetra-valent vaccine against meningococcal disease covering serogroups A+C+W135+Y, EPI-NEWS 37/10.

All travellers over 2 years of age, including those who have been vaccinated against group A+C within the past three years, should be vaccinated once, no later than 10 days before entry. Influenza vaccination is not a requirement but is, however, recommended by the Saudi Ara-bian authorities, particularly in persons with chronic conditions, EPI-NEWS 39/10.

(Department of Epidemiology)