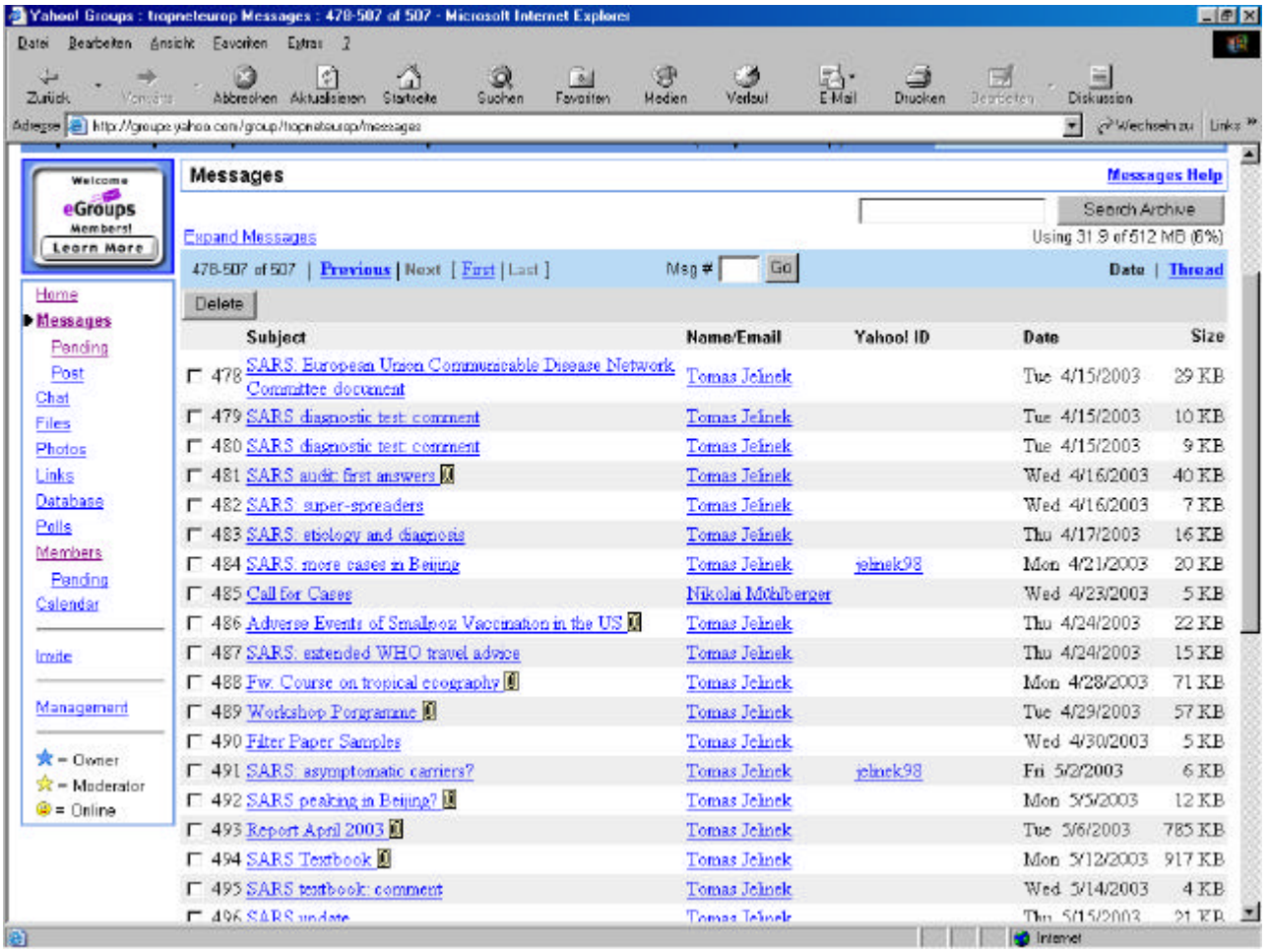
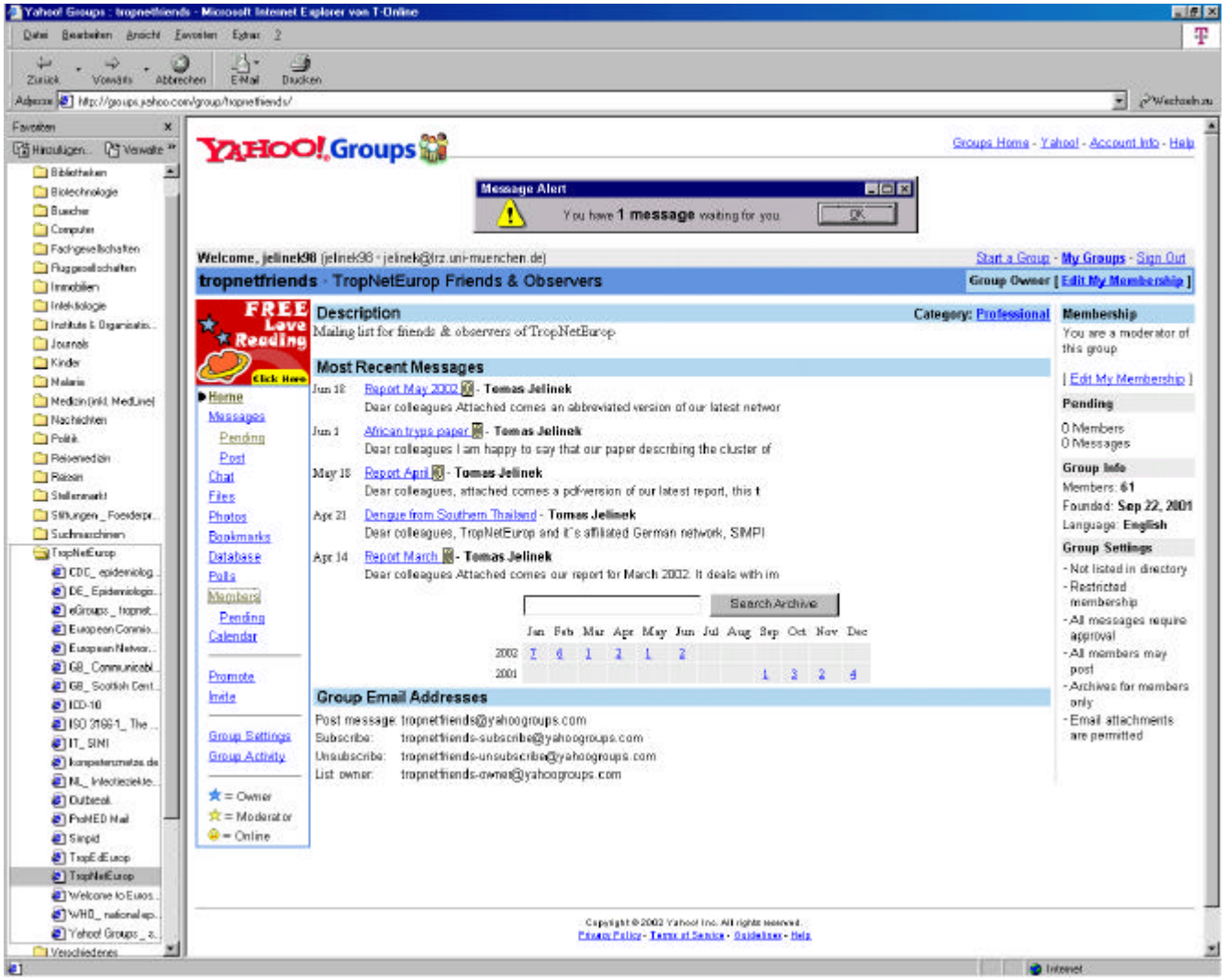
d) Special Reports and "Sentinel Events"

The extremely high level of awareness for "sentinel events" of all network members has ensured several impressive successes of TropNetEurop. The latest example is the description of a cluster of dengue fever in Thailand. TropNetEurop is contacted by several national public health agencies for information on disease activity and has formed a permanent collaboration with the German Robert Koch Institute.



e) Friends & Observers

Following increasing demand, a second TropNetEurop mailing list had to be created. This list is targeting all interested medical staff, that are not able or willing to participate actively at TropNetEurop. It also aims to include public health staff in Europe, at WHO and in countries that are visited by European travellers. This list is managed by the network coordinator and is not open for discussion. Currently it has 61 members. Feedback has been overwhelmingly positive and close contacts to several recipients have developed. This has led repeatedly to the notification of "sentinel events" through members of this mailing list to TropNetEurop.



THE REPORTING SYSTEM

Electronic reporting shall become the standard of TropNetEurop! Please refer to the web site www.tropnet.net for all necessary material. However, the faxable form will be kept for emergencies and as introduction for new sites.

Please see next page for the current questionnaire!

Surveillance Questionnaire for Imported Infectious Diseases (TropNetEurop)

(Fax to 0049-30-30116-888, att. Dr. T. Jelinek)

Clinic ID	Patient ID	Date Initial Visit (DD/MM/YY)	ÿ Inpatient ÿ Outpatient	Inpatient days	Sex	Date of birth (DD/MM/YY)
		/ /			M F	/ /

Country of birth	Country of residence	Citizenship	If born outside Europe, give date of first arrival	(DD/MM/YY)
				/ /

HISTORY OF RECENT TRAVEL
List, in order, journeys to all countries relevant for this visit, and indicate most likely country of infection by checking

Trip Duration (number of days)	Trip Ended (DD/MM/YY)
	/ /

1.	ÿ	**4.**	ÿ
2.	ÿ	**5.**	ÿ
3.	ÿ	**6.**	ÿ

Detailed information on likely place of infection (town, area):

Pre-Travel counselling by health care provider? ÿ Yes ÿ No ÿ Don't know

Malaria Chemoprophylaxis: ÿ None ÿ Chloroquine ÿ Proguanil ÿ Mefloquine ÿ Doxycycline ÿ Atovaquone/Proguanil ÿ Other:

Compliant ÿ Yes ÿ….No

Patient Classification

- ÿ Immigrant / Refugee
- ÿ Foreign visitor
- ÿ European, lives/works in Europe
- ÿ European, lives/works outside Europe (urban)
- ÿ European, lives/works outside Europe (rural)

Reason for most recent travel

- ÿ Tourism
- ÿ Visiting Relatives/Friends (VRFs)
- ÿ Business
- ÿ Immigration
- ÿ Research / Education
- ÿ Missionary/Volunteer/ Humanitarian
- ÿ Military
- ÿ Other

Chief complaint (CHECK ALL THAT APPLY)

- ÿ Asymptomatic Screening

Or:

- ÿ Fever
- ÿ Fatigue
- ÿ Skin
- ÿ Respiratory
- ÿ Headache
- ÿ Lymphadenopathy
- ÿ Musculoskeletal
- ÿ Diarrhoea
- ÿ Vomiting
- ÿ ENT
- ÿ Genitourinary
- ÿ Neurologic
- ÿ Psychologic
- ÿ Other:

Date of symptoms onset: (DD/MM/YY) / /

DIAGNOSIS AND TREATMENT	1. Notification Dx	2. Notification Dx	3. Notification Dx
Working Dx			
Final Dx			
How was Dx achieved? [1]	P D A SP M G C O	P D A SP M G C O	P D A SP M G C O
Treatment (1. drug)			
Treatment (2. drug)			
Treatment (3. drug)			
Treatment (4. drug)			

[1] ***Diagnostic Procedures:*** *P=Pathogen detection D=DNA detection A=Antigen detection SP=Antibody increase in serum pair (IgM or IgG) M=IgM detection G= IgG detection C=Clinical reasoning O=Other*

Accompanying Diagnoses: **1.** _____ **2.** _____ **3.** _____

COMPLICATIONS? ÿ Yes ÿ No If Yes, which? _____

DEATH? ÿ Yes ÿ No If Yes, why? _____

TROPNETEUROP STUDIES & REPORTS

TropNetEurop screening for codon 268 mutations of the cytochrome b gene associated with malarone resistance

Nikolai Mühlberger, Gaby Peyerl-Hoffmann, Tomas Jelinek

Rationale.
Codon 268 AAT- and TCT-mutations of *P. falciparum's* cytochrome b gene (wildtype = TAT) were recently reported in cases of malarone treatment failure. PCR-methods are available to test for present mutations. Genotypic resistance testing could be used to guide treatment decisions and thereby reduce the risk of treatment failure. However, until now little is known about the prevalence of codon 268 mutations, and their quantitative association with treatment failure. Likewise, information about the diagnostic performance of available tests has not been published in detail.

Objectives.
1. To evaluate the performance of three different genotypic resistance tests
2. To assess the prevalence of codon 286 mutations on the cytochrome b gene
3. To estimate the influence of codon 286 mutations on malarone treatment success

Methods.
464 of 592 TropNetEurop samples were analysed for the Codon 268 AAT- and TCT-mutations. Three different genotypic tests were applied to each sample - PCR_CYTb3&5_NsiI and PCR_CYTb2&6_AlnWI testing for the AAT-mutations and PCR_CYTb2_7_SspI testing for the TCT-mutation.

Results.
388 respectively 291 of the 464 samples were successfully tested for the presence of AAT-and TCT-mutations. PCR_CYTb3&5_NsiI and PCR_CYTb2&6_AlnWI, which focus on the detection of AAT-mutation, showed success rates of 79.96% respectively 65.73%. Combining both PCRs yielded an overall success rate of 83.6%. PCR_CYTb2_7_SspI, which focuses on the detection of TCT-mutations, performed well only with 62.72% of the samples.

In total we detected one case of AAT-mutation, and no case of TCT-mutation. The prevalence of AAT-mutations in patients treated in Europe for falciparum malaria can therefore be calculated with 95% confidence to be in-between 0.01% – 1.43%. Concerning TCT-mutations, we can be 95% confident, that the prevalence does not exceed 1.03% in the European patient pool.

Analysing a subsample of 30 patients treated only with malarone revealed, that AAT-mutation is highly associated with treatment failure (RR 9.7 CI95% 3.3-28.2). The mutation was present in one of 4 patients with treatment failure, but in none of 26 successfully treated patients.

Conclusions.
1. AAT-mutation seems sufficient, but not necessary for malarone treatment failure. Its prevalence is unlikely to exceed 1.4% in the European patient pool. PCR_CYTb3&5_NsiI is superior to PCR_CYTb2&6_AlnWI in testing for AAT-mutations.
2. TCT-mutation prevalence is unlikely to exceed 1.03% in the European patient pool. PCR_CYTb2_7_SspI, which was used to test for TCT-mutation, performed rather poor. No new information was gained about the mutation's influence on malarone effectiveness.

TropNetEurop MALHIV Study

Ida Gjørup, Department of Infectious Diseases M 5132, University of Copenhagen, Denmark

Highly active antiviral therapy(HAART) has significantly reduced AIDS morbidity and mortality.
As a consequence of prolonged AIDS free time and improved living conditions the number of HIV-patients travelling to malarious areas can be expected to rise.Pre-travel counselling is especially important for travellers with compromised immune status,however,little is known about the interaction between HIV and malaria so far.
Hiv-infection causes increasing celluar immune suppression and could thus result in an impaired immune response to malaria,leading to failure to prevent infection or suppress parasitaemia and clinical disease.
Plasm. Falc. has been shown to stimulate HIV-replication through the production of cytokines by activated lymphocytes.Hiv proviral loads are sinificantly higher in patients with malaria than those without and remain so for several weeks after tratment.Thus malaria could cause faster progression of HIV disease.Former studies from Africa have shown conflicting results and for the moment there is no existing study on non-immune patients under HAART.

Illicit trade in humans and risks of disease spread: recurrent clusters of malaria in Chinese illegal immigrants to Europe through Africa.

Zeno Bisoffi, Alberto Matteelli, Donatella Aquilini, Giovanni Guaraldi, Giacomo Magnani, Giovanna Orlando, Giovanni Gaiera, Tomas Jelinek and Ron Behrens

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Institute of Tropical Medicine, Berlin, Germany (T Jelinek)
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Summary

Between November 2002 and March 2003, 17 cases of malaria (1 fatal) in Chinese immigrants were observed in Italy. A further cluster of 12 cases had occurred in August, 2002. Previously two other clusters have been described, during the summer of the year 2000, when a significant number presented with severe disease. All of the patients gave a history of a transit through an African country, the majority in Ivory Coast. Several travelled by air to Africa and all to Europe, making the risk of introducing SARS a possibility should this illicit trade in humans continue.

Between November 2002 and March 2003, 17 cases of malaria among illegal Chinese immigrants were observed in seven hospitals of Central and Northern Italy (15 cases of *Plasmodium falciparum*, one case of *P. malariae* and a mixed infection *P. falciparum - P. malariae*). One patients died (a brief case report is outlined hereafter). Imported malaria in this Chinese national had not been detected in malaria surveillance within Europe.[1] Although malaria is still endemic in parts of China, the major species is the benign form from *P. vivax*. *P. falciparum* transmission is confined to provinces bordering Laos and Viet Nam. On investigating the cluster we had difficulties with the language barriers and reticence because of their illegal entry to Europe. With assistance of Chinese translators we obtained information on most cases. The findings are outlined in Table.

Some had already fallen ill whilst in Africa. Other had reportedly died from "fever" before reaching Europe.

Case report (patient 7). She was admitted on 13th January, 2003 to a general hospital of Northern Italy with high fever, severe haemolytic anemia (Hb 4.4 g/dL) and metabolic acidosis. 48 hours later, due to hypotension, seizures and subsequent coma, she was transferred to the ICU of a referral hospital for Infectious Diseases in Modena. The presence of haemoglobinuria, hypoglicemia and thrombocytopenia prompted the specialist to look for malaria, though she reportedly came from a non endemic area. The blood film revealed P. falciparum with 70% parasitemia. The patient died of multiple organ failure despite appropriate quinine treatment, plasmapheresis and aggressive intensive care.

Prior to 2000, *P. falciparum* malaria had not been reported in Chinese immigrants to Italy, despite many thousands living in Northern and Central Italy. In the summer of 2000 an initial cluster of 22 cases was described in the Lombardy Region.[2] Another cluster of six cases was detected in Tuscany: [3] however these were probably part of the same 2000 group of immigrants. In these outbreaks the authors noted higher rates of severe disease. All patients reported transit periods of several months (3 to 9) to reach Europe through a number of African countries.

Malaria in Chinese immigrants bought to light a new route being used by traders of "human cargos", bypassing the traditional route, through Central Asia and Eastern Europe. This was probably consequent to the conflict in Kosovo resulting in increasing border controls and travel restrictions. [3]

Between 2000 and 2002, sporadic cases were reported (10) to the Italian MOH in 2001.[4] The 2003 cluster prompted us to examine hospital records, where we identified (August 2002) a further cluster of 12 in four of our hospitals (data not included in the table). The MOH has 26 confirmed *P. falciparum* cases during 2002,[4] suggesting ongoing (and possibly increasing) traffic of human, despite recent Italian legislation on immigration.

There are some significant differences to 2000 cluster which raise important issues. The proportion of severe cases was lower than the previous reports with a fatal case first admitted to a general hospital where diagnosis was not considered; in the others the awareness raised by the previous cluster led to a prompt diagnosis and treatment, with favourable outcome. Ivory Coast was the transit country for almost all patients. They report obtaining visas here to enter Europe, which probably represents a structured (criminal) process. The clustering of cases, despite variable time in transit, suggests that the immigrants arrive in Europe in groups when the entry conditions are more favourable. Although Italy was the final destination, at least some entered through France, which also has had reports of *P.falciparum* cases in Chinese immigrants. [5]

Of most concerns is the potential for the dispersion by these unscreened clandestine travellers of the SARS virus from China. Several patients reported travelling by air from China to Ivory Coast, and all to Europe. Any infected travellers would pose a threat to fellow travellers, to the country of transit and to the country of destination. This threat is ongoing and may lead to an in-recognised introduction of SARS to Africa (with potentially devastating consequences), if not to Europe.

Both clusters of malaria were detected early through SIRL, a network on imported diseases of the Lombardy Region, in conjunction with the European surveillance network TROPNETEUROP. Any physician in Europe who sees a Chinese patient with a recent travel and a high fever should exclude malaria, and consider the possible diagnosis of SARS.

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3 Aquilini D, Liang LI, and Paladini A. New slaves and malaria: *J Travel Med* 2003; **10**: 46-7

4 Vellucci L (Direzione Generale della Prevenzione, Ministero della Salute, Italy: Personal communication)

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Table

Case	Sex, age	Date of presentation	Country of transit	Time spent in Country of transit	Mode of travel to Country of transit	M. of travel to Europe	*Plasmodium* species	Clinical outcome
1	M, 21	05.11.02	Ivory Coast	8 months	air	air	*P. falciparum*	recovered
2	M, 24	11.11.02	"Africa"	3 months	unknown	air	*P. falciparum*	recovered
3	F, 20	12.11.02	Ivory Coast	22days	road/sea	air	*P. falciparum*	recovered
4	M, 22	15.11.02	Ivory Coast	1 month	air	air	*P. falciparum*	recovered
5	M, 24	16.11.02	Ivory Coast	14 days	road/sea	air	*P. falciparum*	recovered
6	M, 28	09.01.03	Ivory Coast	2 months	unknown	air	*P. falciparum*	recovered
7	F, 20	13.01.03	"Africa"	few days	unknown	air	*P. falciparum*	died
8	M, 21	01.02.03	Ivory Coast	unknown	unknown	air	*P. falciparum*	recovered
9	F, 32	02.02.03	Congo	unknown	unknown	air	*P. falciparum*	recovered
10	M, 22	03.02.03	Ivory Coast	6 months	air	air	*P. falciparum*	recovered
11	M, 19	08.02.03	Ivory Coast	unknown	unknown	air	*P. falciparum*	recovered
12	M, 34	12.02.03	Congo	2 months	road/sea	air	*P. falciparum*-*P. malariae*	recovered
13	F, 24	13.02.03	Ivory Coast	50 days	air	air	*P. falciparum*	recovered
14	M, 40	22.02.03	Ivory Coast	unknown	road/sea	air	*P. falciparum*	recovered
15	M, 22	24.02.03	Ivory Coast	2 months	road/sea	air	*P. falciparum*	recovered
16	M, 28	10.03.03	"Africa"	unknown	unknown	air	*P. falciparum*	recovered
17	M, 23	15.03.03	Ivory Coast	50 days	road/sea	air	*P. malariae*	recovered

EMERGING & RE-EMERGING DISEASES

Dengue in travellers: disease, definitions & TropNetEurop data

Ole Wichmann, Institute of Tropical Medicine, Humboldt University, Berlin

In the past 30 years there has been a dramatic resurgence of epidemic dengue activity in the tropics worldwide. Dengue fever with its more severe form dengue hemorrhagic fever (DHF) is a leading cause of hospitalization and death especially among children in South East Asian countries where DHF-epidemics first occurred in the 1950s. Epidemic DHF spread out to the South Pacific islands in the 1970s, and reached the American region in the 1980s and 1990s involving all age-groups during outbreaks.

In recent years epidemiological patterns seem to chance in somehow. In South East Asia the median age of DHF-patients shifted constantly to older age-groups, and reports on DSS associated with primary infection as well as reports on unusual clinical manifestations (e.g. liver-involvement, encephalitis and severe GI-bleeding) are increasing. To give some examples of these tendencies, we present results of an investigation of a 2001-outbreak in Chonburi-Province, Thailand, with more than 4,600 individuals affected.

With increasing air travel people from non-endemic areas are more often exposed to and infected with dengue viruses. But DHF is rarely seen in travellers. However, in 2002 first fatal cases of dengue infections in travellers have been reported in Europe. Among 483 dengue cases reported between 1999 and 2002 to TropNetEurop 13 were assigned as DHF (2.7 %). In our population immigrants and foreign visitors were 4.3 times at higher risk to present with manifestations of dengue hemorrhagic fever when compared with European travellers.

H. CAPSULATUM INFECTION IN SPANISH TRAVELLERS TO LATIN AMERICA. PRELIMINARY RESULTS

Authors: Gascón J., Torres JM*, Mejias T, Bermudez H, Jimenez M*, Triviño L*, Ribas E.*, Corachán M., Quintó Ll.
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In Spain, a great percentage of international travelers go to Latin America. Several cases of Acute Pulmonary Histoplasmosis, have been diagnosed at the Centre of Tropical Medicine of the Hospital Clinic in Barcelona (Gascón J, et al. Imported Histoplasmosis in Spain. J Trav Med, 2000; 7:89-91).
Only 10% of the immune competent people affected by H.capsulatum develop a clinical illness, but even someone who has not suffered acute clinical disease can develop future complications: Histoplasmoma or pulmonary / disseminated disease if their immune status changes (AIDS, transplants).
The main objective of this study is to learn the risk of infection by H.capsulatum in travelers to Latin America.
The study was performed at the Hospital Clinic in Barcelona between Jan/01 and April/03 in people who traveled (>3 weeks) to Latin America. Travelers were included in the study on a voluntary basis. A control group of travelers (N= 29) to West Africa (>3 weeks) and a control group (N=20) of people who had not traveled were also recruited.
Travelers filled in a form for clinical and epidemiological information. Only in the presence of symptoms was a physical examination conducted. A histoplasmosis skin test (HST) was performed in all cases and if positive (>5 mm ∅), a chest x-ray was done. In acute clinical cases, other chest pathologies were ruled out. Latex and Double diffusion (DD) serologies were performed in 179 and 192 travelers respectively.
We recruited 342 people who had traveled to Latin America (254 to Central America and 90 to South America), 29 to West Africa and 20 people were in the non-travelers group.
Results: 20% (69 cases) of travelers to Latin America and 3% (1 case) to West Africa were HST + (p=0.025). In the non-travelers group, all were HST -. Neither sex nor age differences were found. As for risk factors associated with infection from H.capsulatum, only sleeping on the ground had a positive correlation with positive HST (p=0.031).
Compared with the HST results, the sensibility and specificity of DD and latex tests were 26,83% (sen) and 98,68% (spe); and 18,92 (sen) and 100% (spe) respectively. During this study we diagnosed 10 cases of acute pulmonary histoplasmosis, all of them with fever (or mild fever), cough, HST + and compatible chest radiologic changes. We detected one case of Histoplasmoma.
Conclusions: Travelers who go to Latin America for 3 weeks or more have a significant risk of H.capsulatum infection. Histoplasmosis should be included in the differential diagnosis of the febrile syndrome in travelers coming from Latin America. The HST is a good method for screening histoplasmosis in Europe.

African tick bite fever in travellers

Mogens Jensenius, Department of Internal Medicine, Aker University Hospital, N-0514 Oslo, Norway. email: mogens.jensenius@ioks.uio.no

African tick bite fever is an emerging infectious disease in today's travel medicine. The disease is caused by *Rickettsia africae*, a recently identified spotted fever group rickettsia, and is transmitted by cattle ticks of the *Amblyomma* genus in large parts of rural sub-Saharan Africa. Recent epidemiologic studies indicate that up to 5.0% of short-term safari travellers may acquire African tick bite fever, and that major risk factors include game hunting as purpose of travel, prolonged travel in rural areas, travel to southern Africa, and travel during the summer when tick abundances peak in most endemic areas. African tick bite fever is clinically characterised by acute flu-like symptoms with neck muscle myalgia and frequently accompanied by one or several inoculation eschars, regional lymphadenitis, cutaneous rash and, more rarely, aphthous stomatitis. Complications are rare, but include prolonged fever and reactive arthritis. Treatment with doxycycline or fluoroquinolones is associated with rapid improvement and defervescence in most cases. Preventive measures comprise the wearing of protective clothings (preferably impregnated with acaricides) and the use of repellents on exposed skin whenever bush walking in endemic areas.

SARS

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With the increasing import of emerging infectious diseases into our societies, National Health Services face entirely new challenges. The recent epidemic of SARS, probably caused by a Virus with the proposed name Coronavirus pneumoniae (CVP), has shown how fast national boundaries break down in the face of high-speed international travel. Within few days, infected patients turned up at such different places as Hong Kong, Singapore, Toronto, and Frankfurt. The international community did react very fast, but only after the disease had reached Hanoi and Hong Kong. It is worthwhile noting that the current outbreak of SARS actually started much earlier, with the beginning of November 2002, in the Chinese province Guangdong. Reports about a strange cluster of atypical pneumonia cases were carried to international level, but Chinese authorities dissimulated the problem quite effectively. And frankly, nobody in the Western world was much interested in Chinese peasants with pneumonia. Only after an accidentally infected US citizen managed to leave the area and to carry the infection to a more visible level did international attention focus on SARS:

Concentration on notifications systems on national levels, the traditional mainstay of national health services, is certainly still important. It is, however, entirely inadequate when dealing with the capacity of modern society to spread disease globally. National Health Services need to link on international level. Here, “to link” does not mean to simply agree on regular contacts and on regular accumulation of national notification data as currently practised across the European Union. It means to form active surveillance networks with members that exchange information on a permanent basis. Such networks need to involve all professionals that may become involved in international outbreaks, staff of national health services being among them. Other include diagnostic laboratories and clinical units that carry the burden of caring for the patients. An international model for this may be the global influenza network that is very capable in detecting and identifying new influenza subtypes. However, coping with a known, well defined entity as influenza virus makes surveillance and international collaboration comparatively easy. Future international networks will have to prepare for yet unknown pathogens, as CVP was. This requires a very open-minded approach of all network partners, leaving nationalistic issues, regional financial issues (such as tourism) and personal interests behind. The WHO-led response against SARS gives an excellent example of a coordinated, international response. Quite simply in order to survive the new challenges that the future will certainly bring, National Health Services need to organise themselves on similar level.

Is there an infectious disease threat to Scandinavia from Russia and the Baltic states?

Andreas Skulberg, MD, MSc Public Health (LSHTM), Secretariat Task Force on Communicable Disease Control in the Baltic Sea, Region

The epidemiological situation on infectious diseases in Russia and three Baltic States give reasons for grave concerns. The HIV epidemic is spreading rapidly and the prevalence of multiple drug resistant tuberculosis is among the highest in the world. The incidence of sexually transmitted diseases is alarmingly high when it comes to syphilis and gonorrhoea. Data on antibiotic resistance are scarce. The vaccination programs work sub-optimally and coverage varies throughout the region.

Information on historical spread of these diseases to other countries is presented and future risk of international transmission discussed. Different political and social factors influencing the infectious disease epidemiology is discussed. The preparedness in the societies to meet new emerging diseases will be presented using SARS as an example.

Gnathostomiasis as an emerging infection

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Increasing international travel brings the more adventurous traveller into contact with helminthic parasites rarely seen outside the tropics. Infection with Gnathostoma spinigerum, leading to the clinical syndrome of gnathostomiasis is a typical example, and one with which few clinicians in non-endemic areas will be familiar. This case series of patients seen at the Hospital For Tropical Diseases (London, UK) is reported to draw attention to this underdiagnosed parasitic infection which may present to a range of different medical specialities.

Venomous animals

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To produce toxins is a common adaptation in nature, both as a defensive measure to avoid predation, and as weapons to tranquillize, kill and digest prey. About 60 000 people die every year because of snakebites. The victims are mainly agricultural workers, and in Southeast Asia, fishermen. Tourists from Europe or USA are most often bitten while handling snakes. Snakebites are not a major cause of death among tourists, but as travel clinicians, we often get questions about such risks. Of the 2.400 species of snakes in the world about 50 have clinical significance. Snake venoms are complex mixtures of different toxins. The effect of the toxins can to some extent be classified according to snake taxonomy:

- Viperidae: Vasculotoxic (systemic and local), intravascular coagulation
- Elapidae: Cytolytic, neurotoxic
- Hydrophidae: Myotoxic.

Representatives of the main phyli containing venomous animals (vertebrata, echinodermata, mollusca, cnidaria and athropoda) are presented in a slide show and, the venoms' mode of action, treatment and preventive measures are discussed.

MALARIA

European Observational Multicentre Study: Therapy of Uncomplicated Falciparum Malaria

Therapy of imported uncomplicated falciparum malaria is by no means conducted uniformly throughout Europe. In fact, treatment strategies vary widely, as demonstrated by data obtained from TropNetEurop centres over the last years, and there is currently no standard therapy contributing centres would agree upon.

Centre-specific, and national, standards of care are based on data predominantly derived from therapeutic studies which have been performed in malaria-endemic areas. For epidemiological and biological reasons, these results are not always easily applicable to imported infections (large ethnically homogenous study cohorts, differences in the immune status of the hosts and vast variations of parasite strains from different geographic areas etc.).

The European multicentre study as described here serves the need to observe and document current therapeutic strategies for uncomplicated falciparum malaria in order to make them comparable. Recently introduced regimens for which a broad database is lacking so far (atovaquone-proguanil, artemether/benflumetol) will be in the focus of interest.

During the talk, a brief update on the evolution of the study concept will be given. Information on the current state of protocol development and other relevant details will be provided, as well as an overview on the time-schedule in the remaining run-up for the start of this study which should begin soon following this meeting will be presented.

This initial malaria therapy study within the framework of TropNetEurop will yield information of use for the harmonization of therapy guidelines and the determination of a therapeutic standard, and provide the platform for further, more challenging studies involving pre-registration substances.

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