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European Travel and Tropical Medicine Network
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European Centre for Disease Prevention and Control
Collaborative Network for Travel and Tropical Medicine



EUROTRAVNET SCIENCE WATCH: NOVEMBER & DECEMBER 2010

Scientific advances – **Declining incidence of imported malaria in the Netherlands, 2000-2007.** van Rijckevorsel GG. et al., *Malaria Journal*, 2010;9:300

Scientific advances – **Controlled study on enteropathogens in travelers returning from the tropics with and without diarrhea.** Paschke C. et al., *Clin Microbiol Infect*, 2010, Nov 4 [Epub ahead of print]

Scientific advances – **Travel and migration associated infectious diseases morbidity in Europe, 2008.** Field V. et al., *BMC Infect Dis*, 2010, Nov 17; 10(1):330 [Epub ahead of print]

Scientific advances – **Artesunate versus quinine in the treatment of severe falciparum malaria malaria in African children (AQUAMAT): an open-label, randomized trial.** Dondrop AM. et al., *Lancet*, 2010;376(9753):1647-57.

Scientific advances – **Knowledge, attitudes and practices of business travelers regarding influenza and the use of antiviral medication.** Helfenberger S. et al., *J travel Med*, 2010;17(6):367-73.

Scientific advances – **Rickettsia typhi and rickettsia felis in Xenopsylla cheopis and Leptopsylla segnis parasitizing rats in Cyprus.** Christou C. et al., *Am J Trop Med Hyg*, 2010;83(6):1301-4.

These papers were selected by Dr. Helena H. Askling (helena.hervius-askling@karolinska.se) from Stockholm, Sweden

Scientific advances – Declining incidence of imported malaria in the Netherlands, 2000-2007.

van Rijckevorsel GG, Sonder GJ, Geskus RB, Wetsteyn JC, Ligthelm RJ, Visser LG, Keuter M, van Genderen PJ, van den Hoek A.

Malaria Journal, 2010;9:300

Link to the article: <http://www.malariajournal.com/content/pdf/1475-2875-9-300.pdf>

Description: This is a descriptive study based on national surveillance data of reported malaria cases, travelers statistics and data on malaria chemoprophylaxis prescriptions. By using this, the authors have estimated incidence and trends of imported malaria in the Netherlands. The results show a declining trend, in spite of an increase of number of travelers to malaria endemic countries. VFR-travellers imported less cases of malaria and contributed largely to the declining trend. Data on malaria chemoprophylaxis prescriptions could not explain the trend. The authors suggest the reason might be reduced transmission in affected areas. There is, however, a negative finding of an increasing number of travelers who are unprotected to malaria, which the authors find worrisome.

ECDC comment: This is a positive signal of declining incidence of malaria in returning travelers. Imported malaria is still always to be considered in febrile travelers from endemic areas.

Public Health Significance: From a European perspective a declining trend in importation of malaria reduces morbidity and mortality from this severe disease. Fewer cases might lead to difficulties in diagnosing malaria for clinicians in non-endemic countries. Reduced transmission in endemic areas has been verified and is also of importance for the health of the traveler.

Keywords: malaria, traveler, incidence, Netherlands

Scientific advances – Controlled study on enteropathogens in travelers returning from the tropics with and without diarrhea.

Paschke C, Apelt N, Fleischmann E, Perona P, Walentiny C, Löscher T, Herbinger KH.

Clin Microbiol Infect, 2010, Nov 4 [Epub ahead of print]

Link to the article: <http://onlinelibrary.wiley.com/doi/10.1111/j.1469-0691.2010.03414.x/abstract?systemMessage=Due+to+essential+maintenance%2C+access+to+Wiley+Online+Library+will+be+disrupted+on+Sunday%2C+19th+Dec+between+10%3A00-12%3A00+GMT>

Description: This is a study from Munich, Germany, where they have investigated enteropathogens in 114 stool samples from travellers returning from the tropics with diarrhea and as a control group 56 travellers without diarrhea. Most cases had traveled to Asia (54%) followed by Africa (35%). Microbiological examination and PCR for norovirus genogroup I and II, enteroaggregative *Escherichia coli* (EAEC) and enterotoxigenic *Escherichia coli* (ETEC) producing heat-labile (LT) and heat-stable (ST) enterotoxin were performed. EAEC, LT-ETEC and ST-ETEC were detected most frequently in travelers with diarrhea. Only for EAEC, ST-ETEC, *Blastocystis* and *Campylobacter* the prevalence was significantly higher among cases compared to controls. There was also a high rate of co-infections.

ECDC comment: These findings are highlighting the high rate of colonization of enteropathogens in travelers without diarrhea.

Public Health Significance: Diarrhea is the most common cause of travel related health problem and at the same time the problem with antibiotic overconsumption and development of multi-drug antibiotic resistance enteropathogens is of major concern. The fact that also travelers without diarrhea are carriers of enteropathogens is of significance when discussing proper diagnosis of ill returned travelers as well as trying to reduce unnecessary antibiotic prescriptions.

Keywords: Diarrhea, EAEC, ETEC, travelers

Scientific advances – Travel and migration associated infectious diseases morbidity in Europe, 2008.

Field V, Gautret P, Schlagenhauf P, Burchard GD, Caumes E, Jensenius M, Castelli F, Gkrania-Klotsas E, Weld L, Lopez-Velez R, de Vries P, von Sonnenburg F, Loutan L, Parola P, Network TE.

BMC Infect Dis, 2010, Nov 17; 10(1):330 [Epub ahead of print]

Link to the article: <http://www.biomedcentral.com/content/pdf/1471-2334-10-330.pdf>

Description: This is an analysis of diagnoses of ill returned travelers that presented to the EuroTravNet centres during 2008. Totally 6957 patients had a presumed travel associated condition and out of these 33% had a gastrointestinal disease, followed by systemic febrile illness (20%) and dermatologic conditions (20%). Three deaths were recorded (pyelonephritis, dengue shock syndrome and plasmodium falciparum malaria). Malaria accounted for the majority of the cases in the group of systemic febrile illnesses (5.4%), followed by dengue. Travel within Europe was also associated with health risks and there were differences in type of diagnosis between Western Europe (e.g more respiratory infections) and Eastern Europe (e.g more gastrointestinal infections) visits.

ECDC comment: This study provides a solid reference to further changes in the epidemiological spectrum of imported infectious diseases in Europe. The morbidity related to within Europe travel is highly relevant from the European perspective.

Public Health Significance: Travel related illnesses constitute a public health concern and prophylactic interventions should be focused on risk groups, e.g VFR (visiting friends and relatives) travelers.

Keywords: European, travelers, diagnosis, morbidity

Scientific advances – Artesunate versus quinine in the treatment of severe falciparum malaria in African children (AQUAMAT): an open-label, randomized trial.

Arjen M Dondorp, Caterina I Fanello, Ilse C E Hendriksen, Ermelinda Gomes, Amir Seni, Kajaal D Chhaganlal, Kalifa Bojang, Rasaq Olaosebikan, Nkechinyere Anunobi, Kathryn Maitland, Esther Kivaya, Tsiri Agbenyega, Samuel Blay Nguah, Jennifer Evans, Samwel Gesase, Catherine Kahabuka, George Mtove, Behzad Nadjm, Jacqueline Deen, Juliet Mwanga-Amumpaire, Margaret Nansumba, Corine Karema, Noella Umulisa, Aline Uwimana, Olugbenga A Mokuolu, Olanrewaju T Adedoyin, Wahab B R Johnson, Antoinette K Tshefu, Marie A Onyamboko, Tharisara Sakulthaew, Wirichada Pan Ngum, Kamolrat Silamut, Kasia Stepniewska, Charles J Woodrow, Delia Bethell, Bridget Wills, Martina Oneko, Tim E Peto, Lorenz von Seidlein, Nicholas P J Day, Nicholas J White, for the AQUAMAT group*

Lancet, 2010;376(9753):1647-57.

Link to the article: <http://www.ncbi.nlm.nih.gov/pubmed/21062666>

Description: This is an open-label randomized trial between artesunate and quinine as treatment for severe falciparum malaria in 11 African countries. The end-point was in-house mortality. Two hundred-thirty (8.5%) patients assigned to artesunate treatment died compared with 297 (10.9%) assigned to quinine treatment (odds ratio [OR] stratified for study site 0.75, 95% CI 0.63–0.90; relative reduction 22.5%, 95% CI 8.1–36.9; $p=0.0022$). These results, together with results from meta-analysis, support artesunate treatment instead of quinine in cases with severe falciparum malaria.

ECDC comment: This large study should encourage also treatment with artesunate in severe falciparum malaria cases treated in Europe, which is not always the case despite increasing evidence of the benefit.

Public Health Significance: The potential of reducing the mortality of malaria is of great importance.

Keywords: malaria, children, artesunate, quinine, mortality

Scientific advances – Knowledge, attitudes and practices of business travelers regarding influenza and the use of antiviral medication.

Salome Helfenberger, Alois Tschopp, Luc Robyn, Christoph Hatz, and Patricia Schlagenhauf

J travel Med, 2010;17(6):367-73.

Link to the article: <http://www.ncbi.nlm.nih.gov/pubmed/21050315>

Description: This is a descriptive study with the aim to evaluate knowledge, attitudes and practices of Swiss business travelers with regard to influenza and the use of anti-viral medication. Questionnaires were distributed manually through companies, organizations and travel medicine specialists to business travelers who were travelling between January 2005 and April 2009. 661 questionnaires were evaluated and the results show that business travelers have a good knowledge of transmission and symptoms of influenza, even though it is clear that consistent guidelines for influenza vaccination and anti-viral medication is lacking in this group of travelers.

ECDC comment: This paper provides good background information on the synergism between travel and the spread of influenza. It underlines the underestimated importance of influenza as a "travellers" illness. Business travellers are well informed regarding the mode of influenza transmission and the symptoms of the illness. There was diversity, however, in approaches to prevention and treatment.

Public Health Significance: There are currently no uniform recommendations for travel related influenza prevention and treatment. International guidelines should address the indications for influenza vaccination in travellers and also provide information on the carriage and use of antiviral medication.

Keywords: influenza, business travelers, travel

Scientific advances – Rickettsia typhi and rickettsia felis in Xenopsylla cheopis and Leptopsylla segnis parasitizing rats in Cyprus.

Christos Christou , Anna Psaroulaki , Maria Antoniou , Pavlos Toumazos , Ioannis Ioannou , Apostolos Mazeris , Dimosthenis Chochlakis , and Yannis Tselentis

Am J Trop Med Hyg, 2010;83(6):1301-4.

Link to the article: <http://www.ncbi.nlm.nih.gov/pubmed/21118938>

Description: This study is part of a survey involving capturing rats and their fleas and using them as indicators of the presence of zoonotic agents in Cyprus. During a three-year survey (2001–2003), fleas were collected from 622 wild rats captured at 51 localities in all five prefectures of Cyprus. *Rickettsia typhi*, the causative agent of murine typhus, was detected in *Xenopsylla cheopis* (4%) and in *Leptopsylla segnis* (6.6%). *Rickettsia felis* was detected in *X. cheopis* (1%). This is the first report of *R. typhi* in *X. cheopis* and *L. segnis* from rats, in Cyprus, and the first report of *R. felis* in *X. cheopis* in Europe. The role of fleas (mainly *X. cheopis*) was confirmed in the epidemiologic cycle of murine typhus in Cyprus by interrelation of current results with those of previous studies.

ECDC comment: The geographic distribution of fleas coincided with the geographic distribution of the pathogen they can harbor, which emphasizes the potential risk of flea-transmitted infections in Cyprus.

Public Health Significance: The first *R. Typhi* infections were described in an outbreak in Cyprus in 1996, followed by an outbreak in the same area 1997. An unpublished serological survey in 1997 found a prevalence of 47.3% IgG against *R. Typhi* and 14.4% for IgM. Recently, 21 pediatric cases of murine typhus were described in Cyprus. The true incidence is unknown and this study adds evidence of the occurrence of *R. Typhi* and murine typhus infections in Cyprus, also of importance when seeing ill returned travelers from this frequented island.

Keywords: flea, *R. Typhi*, murine typhus, Cyprus