1\textsuperscript{ST} CROATIAN CONGRESS ON TRAVEL, TROPICAL, MIGRATION MEDICINE & HIV
WITH INTERNATIONAL PARTICIPATION

CROATIAN SOCIETY FOR TRAVEL TROPICAL & MIGRATION MEDICINE
OF THE CROATIAN MEDICAL ASSOCIATION

BOOK OF ABSTRACTS

Dubrovnik, Croatia
October 1 - 4, 2015
Dear Colleagues and Friends,

On behalf of the Croatian Society of Travel, Tropical and Migration Medicine of the Croatian Medical Association and the Organizing Committee, it is my great pleasure and honor to welcome you to the 1st Croatian Congress on Travel, Tropical, Migration Medicine & HIV with international participation, to be held in Dubrovnik, Croatia, on October 1-4, 2015.

The Society of Travel, Tropical and Migration Medicine of the Croatian Medical Association is a young society, the first of this kind in the region. We are very enthusiastic to promote and improve education, awareness and knowledge on travel, tropical and migration medicine. The main goal of the congress is to bring together Southeastern European health care workers with various professional backgrounds and leading experts in the field to share knowledge and expertise on prevention, diagnosis and treatment of the most common diseases in travelers and migrants, major tropical diseases and HIV infection. We aim to achieve this goal through high quality workshops and lectures held by leading experts in the field and also hope that younger colleagues will have a great learning experience and the opportunity to present their original work.

The city of Dubrovnik is a perfect venue for this congress. Apart from being a wonderful city with unique historical and cultural heritage, Dubrovnik was a major trading and maritime center on the crossroads between East and West. It is a town with a medical heritage and great achievements of medieval medicine and the first city to have a documented organization of quarantine, introduced by the Great Council of Dubrovnik, in July 1377.

We are looking forward to welcoming you to Dubrovnik and hope our meeting will be the beginning of a scientific friendship and future collaboration.

Sincerely,

Prof. Davorka Lukas, MD, PhD, DTM&H
CroCTM&HIV 2015
Congress President
Congress Information

The Croatian society for Travel, Tropical and Migration Medicine greatly appreciates the contributions of time and expertise provided by the following people to the 1st CroCTM&HIV 2015.

Organizing Committee

Chair: Davorka Lukas, Congress President
Co-chair: Neven Papić
Members: Adriana Vince
Josip Begovac
Goran Tešović
Šime Zekan
Ljiljana Betica Radić
Vladimira Lesnikar

Scientific Committee

(in alphabetical order)
Adriana Vince
Alemka Markotić
Annelies Wilder Smith
Arjana Tambić-Andrašević
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Tomislav Maretić
Višnja Škerk

Congress Administrator
Jasmina Blaha

Congress Official Travel Agency
BIZZ putovanja d.o.o.
II. Ravnice 1A, 10 000 Zagreb, Hrvatska
Tel. +385 99 4987 333
Web: www.bizztravel.biz
About Society ...

Millions of people cross international borders every day, traveling in various parts of the world exposing them to a different health environment. Climate change, globalization and other outcomes of industrialization change the epidemiology of infectious diseases, but even more noticeable, the appearance of old and forgotten diseases in areas where they have not previously occurred, with new clinical features, resistance to antimicrobial therapy and risk for human health. Tourism, uncontrolled expansion of cities, exotic animals as pets, the uncontrolled import of food and population movements, opens the real possibility of the introduction of new pathogens. Epidemics of Ebola hemorrhagic fever, Middle East Respiratory Syndrome or 2009 Influenza A H1N1 once again reminded us how modern technological advances opened doors to spreading infectious agents, but also provided better prospects for monitoring, rapid diagnosis and treatment of these dangerous diseases.

With an estimated 500,000 immigrants arriving in EU countries just in 2015, there can be little doubt that migration is among the leading issues of the 21st century. The growing numbers of migrants and asylum seekers fleeing turmoil in Africa and the Middle East poses complex challenges not just for European policymakers, but also for public health organization. Human migration is not a new phenomenon, but it has changed significantly in number and nature with the growth of globalization, effects of climate change, political disturbance and threat of terrorism. As a result, migrant networks that facilitate mobility and circular migration, in particular, have expanded in unprecedented ways. Yet, attention to the health of migrants is still limited.

The field of travel and migratory medicine encompasses a wide variety of disciplines including epidemiology, infectious disease, public health, tropical medicine, high altitude physiology, travel related obstetrics, psychiatry, occupational medicine, military and migration medicine, and environmental health.

We have recognized the need and opportunity to address the issues of modern tropical, travel and migratory medicine in the region, so the Croatian Society for Travel, Tropical and Migration Medicine of the Croatian Medical Association was established on May 28, 2014 at the University Hospital for Infectious Diseases in Zagreb, Croatia.
Society Organization ...

Executive Committee:

President: Professor Davorka Lukas, MD, PhD
First vice president: Professor Josip Begovac, MD, PhD
Second vice president: Professor Goran Tešović, MD, PhD
Secretary: Neven Papić, MD, PhD
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Ivica Knezović, MD
Professor Alemka Markotić, MD, PhD
Neven Papić, MD, PhD
Maja Sabolić, MD
Klaudija Višković, MD, PhD

Office Administrator: Jasminka Blaha
University Hospital for Infectious Diseases,
Mirogojska 8, 10 000 Zagreb, Croatia
Mob: 091 4012 622;
Fax: 01 2826191
E-mail: jblaha@bfm.hr, info@hdptm.hr
## Congress Programme

### Thursday, 1 October 2015

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| 15:00 – 16:00 | Joint symposium  
* Croatian Society of Travel, Tropical & Migration Medicine  
and Croatian Society of Chemotherapy  
Chairman: B. Baršić | Marija Santini (Croatia)  
**MDR infections and possibilities of antimicrobial treatment**  
Vladimir Krajinović (Croatia)  
**ECMO in tourists who acquired ARDS on vacation**  
Milica Lukić (Slovenia)  
**Controversies of critical care treatment of patients with Ebola infection** |
| 16:00 – 17:00 | Integrated symposium  
(Astellas) | Optimizing treatment of systemic fungal infections: when, where and how?  
Bruno Baršić (Croatia)  
**Treatment of invasive candidiasis in ICU**  
Marija Santini (Croatia)  
**Case report: empiric treatment of patient in ICU**  
Milica Lukić (Slovenia)  
**Case report: de-escalation strategy**  
Joško Markić (Slovenia)  
**Case report: treatment of pediatric patient** |
| 20:00 – 22:00 | Opening ceremony  
Welcome reception  
**Venue: Sponza Palace in the Old City of Dubrovnik** | Davorka Lukas (Croatia) on behalf of Croatian Society for Travel, Tropical and Migration medicine  
Mario Poljak (Slovenia) on behalf of ESCMID  
Annelies Wilder Smith (Singapore) on behalf of ISTM  
Nicholas J White (UK) – key note lecture:  
“The changing face of international health and tropical medicine” |
## Friday, 2 October 2015

### 09:00 – 10:30 | **Oral session**

**Chairs:** Arjana Tambić-Andrašević, Goran Tešović

Goran Tešović (Croatia)

**Current measles epidemiology in Central and Eastern Europe – can we do better?**

Dreshaj Shemsedin (Kosovo)

**Crimean-Congo haemorrhagic fever in SE Europe**

Balen Topić Mirjana (Croatia)

**Human leptospirosis in Croatia – epidemiological and clinical characteristics**

Betica Radić (Croatia)

**Availability of antiparasitic drugs in SE Europe**

Tambić Andrašević Arjana (Croatia)

**Antimicrobial resistance in Europe**

### 10:30 – 11:00 | Coffee break / Poster viewing

### 11:00 – 12:00 | **Plenary session**

**Chairs:** Nicholas J White, Davorka Lukas

Nicholas J White (UK)

**The prevention and treatment of malaria**

Patricia Schlagenhauf (Switzerland)

"Travellers' Malaria - Update 2015"

### 12:00 – 13:00 | Integrated symposium

**AbbVie**

**The new face of HCV treatment**

Adriana Vince (Croatia)

**Virus vs. Host**

Miro Morović (Croatia)

**From Clinical Trials to Clinical Practice**

Josip Begovac (Croatia)

**2 Viruses- Additional Challenge?**

Boris Lukšić (Croatia)

**EASL Guidelines in Everyday Practice**

### 13:00 – 14:00 | Lunch break / Poster viewing

### 14:00 – 16:00 | **Oral session**

**Chairs:** Mario Poljak, Snjezana Židovec Lepej

Mihajlo Strelec (Croatia)

**Women's health and travel**

Lana Đonlagić (Croatia)

**Expedition medicine**

Davorka Lukas (Croatia)

**HIV postexposure-prophylaxis in travelers**

Mario Poljak (Slovenia)

**Molecular diagnostic microbiology: first 20 years**

Oktavija Đaković Rode (Croatia)

**The challenge of point-of-care testing for fast and accurate results**

Snjezana Židovec Lepej (Croatia)

**Molecular diversity of HIV-1 in Croatia**

### 16:00 – 16:30 | Coffee break / Poster viewing
16:30 – 17:30  Integrated symposium  Pfizer  

Tick-borne encephalitis  
Goran Tešović (Croatia)  
Vaccination against Tick borne encephalitis  
Marta Grigič Vitek (Slovenia)  
Epidemiology and control of tick borne encephalitis in Slovenia

Saturday, 3 October 2015

09:00 – 10:30  Oral session  
Chairs: Josip Begovac, Adriana Vince  
Mike Youle (UK)  
Aging with HIV  
Josip Begovac (Croatia)  
Ending HIV/AIDS in Southeast Europe: what are the challenges?  
Arjan Harxhi (Albania)  
HIV treatment and care in Albania  
Adriana Vince (Croatia)  
Elimination of hepatitis C, dream or reality?

10:30 – 11:00  Coffee break / Poster viewing

11:00 – 12:00  Integrated symposium  Medicopharmacia  
Management of HCV today  
Wolf Peter Hoffmann (Germany)  
New HCV options and EASL guidelines  
George Papatheodoridis (Greece)  
HCV therapy in resources limited settings

12:00 – 12:30  Integrated symposium  MSD  
“The end of AIDS and the beginning of HIV as a chronic disease”.  
Josip Begovac (Croatia)

13:00 – 14:00  Lunch break / Poster viewing

14:00 – 15:30  Plenary session  
Chairs: Davorka Lukas, Rogelio López-Vélez  
MIGRATION MEDICINE  
Paula Farias (Spain)  
Migratory crisis in the Mediterranean: implications for health  
Davorka Lukas (Croatia)  
Global infectious diseases in migrants  
Rogelio López-Vélez (Spain)  
Screening migrants: a practical approach for parasitic and tropical diseases

15:30 – 16:00  Coffee break / Poster viewing

16:30 – 17:30  Integrated symposium  GSK  
“Synflorix- clinical trials data, effectiveness and impact. Label update”  
Els Holanders (ViiV Healthcare)  
“Clinical Update on Dolutegravir”
Saturday, 3 October 2015 – CONGRESS DINNER

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<td>Georgina H Frew (UK)</td>
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<td>Hepatitis B: a survey of knowledge, attitudes and practices amongst backpackers in Thailand J. Petrović (BiH)</td>
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<td>Some baseline characteristics of acute viral hepatitis in the Clinic for Infectious Diseases in Tuzla Đana Pahor (Croatia)</td>
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<td>The risk of measles outbreaks on cruisers and the problem of the vaccination status of the crewmembers and passengers Anita Rakić (Croatia)</td>
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<td>The presence of Legionella spp. in water supply system of different accommodation sites Seray TOZ (Turkey)</td>
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<td>Evaluation of conjunctival swab sampling in the diagnosis of canine leishmaniasis: a two-year follow-up study in Çukurova Plain, Turkey</td>
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CroCTM&HIV 2015
Authors and Faculty
Meet our invited plenary speakers...

Nicholas J White
Professor of Tropical Medicine, University of Oxford and Mahidol University, Bangkok
Consultant Physician, John Radcliffe Hospital, Oxford
Chairman of Wellcome Trust South East Asian Research Units,
Co-Chairman of World Health Organisation Antimalarial Treatment Guidelines Committee

Professor White is one of the world’s leading malaria experts that pioneered the development of artemisinin-based malaria therapies. He is author of more than 970 scientific papers and more than 50 book chapters. Professor White’s particular interests at present include the pathophysiology and treatment of severe malaria, the prevention of antimalarial drug resistance using artemisinin-based combinations.

In alphabetical order

Stipe Božić
Croatian mountaineer, documentary filmmaker, photographer and writer
He completed the Seven Summits and climb the highest peak in the world, Mount Everest, twice. He has directed more than 60 documentary films, mostly related to mountains and climbing.

Paula Farias
Head of Mission, Sea Rescue Operation, Médecins Sans Frontières, Operational Centre Barcelona - Athens

Mario Poljak
Professor of Clinical Microbiology
ESCMID President-elect & Secretary General
Head of Laboratory for Molecular Microbiology and Slovenian HIV/AIDS Reference Centre, Institute of microbiology and immunology
Faculty of Medicine, University of Ljubljana Slovenia
Patricia Schlagenhauf
WHO Collaborating Centre for Travellers’ Health, Epidemiology, Biostatistics and Prevention Institute
Division of Communicable Diseases, University of Zürich, Zurich, Switzerland
Editor-in-Chief, Journal of Travel Medicine and Infectious Disease

Rogelio López-Vélez
Associated Professor of Medicine, Alcala University, Madrid.
Head of the National Referral Centre for Tropical Diseases. Infectious Diseases Department. Ramón y Cajal University Hospital, IRICYS, Madrid, Spain.

Annelies Wilder Smith
Professor of Infectious Diseases, Lee Kong Chian School of Medicine, Singapore.
President, International Society of Travel Medicine

Mike Youle
Director of HIV Clinical Research at Royal Free Centre for HIV Medicine, London, United Kingdom
Committee member of the British HIV Association (responsible for the British HIV therapeutic guidelines), International Association of Physicians in AIDS Care and the MANON Therapeutic Vaccine Programme.
List of Authors...

Abidin Atasoy
Ahmetagić Sead
Ajduković Mija
Alambašić Kemal
Aynur Atilla
Balen-Topić Mirjana
Balenović Mirta
Bani Roland
Banu Ramazonoglu
Barić Ljubo
Baršić Bruno
Begovac Josip
Belak Kovačević Sanja
Beleva Todorka
Benković Ivana
Berzati Marija
Biasizzo Helena
Božić Stipe
Canan Eryıldız
Capo Rovena
Caroline Durrant
Celevska Tanja
Daković Rode Oktavija
Dede Monika
Delalić Lejla
Desnica Boško
DeVildt Gilles
Donlagić Lana
Dragoratovici Anja
Dreshaj Shemshedin
Družetić Božić K
Dulović Olga
Duvadić Kristina
Dželalija Borij
Erhan Aktürk
Esmeray Mutilu Yilmaz
Falconi Eduardo
Farias Paula
Frew H Georgina
Gjataj Arsilda
Gjenero Morgan Ira
Glavič Robert
Goldring Matthew
Grant Sabrina
Grigić Vitek Marta
Gülcen Kuyucuklu
Hamdi Murat Tuğrul
Harxhi Arjan
Hatice Ertabaklar
Hoffmann Peter Wolf
Holanders Els
Horozic Muhamed
Hüseyin Ahmet Tezel
Ivica Knezović
Jurčev Savičević Anamarija
Kalaba Andrea
Karabegović Ena
Karabuva Svjetlana
Kirami Öğen
Kraja Đhimiter
Krajnović Vladimir
Kučinar Jasmina
Lavadinović Lidiija
Lazarić Stefanović Lorena
Lazić Putnik Lj
Lazić Putnik Ljiljana
Lisičar Iva
Lópež-Vélez Rogelio
Lukas Davoroka
Lučić Milica
Lučić Boris
Markić Joško
McGeorge Elizabeth
Mediha Cerrah
Mehmet Karakuş
Meta Esmeralda
Milja Kopois
Milošević Branko
Milošević Ivana
Mirna Baličević
Mitrović Nikola
Morović Miro
Muco Ermina
Nermin Sakru
Nermin Šakru
Obradović Amina
Obradović Zarema
Oyrra Elda
Ozgür Gunal
Özgür R. Güner
Pahor Đana
Pandak Nenad
Papatheodoridis George
Pelemis Mijomir
Pem Novosel Iva
Petrović Jasmina
Pipero Pellumb
Poljak Mario
Poluga Jasmina
Popović Nataša
Primož Karner
Puşelja Željko
Radić Betica Ljiljana
Radošević S.
Rakić Anita
Romih Vanja
Sabolić Maja
Salihha Akgün Baltaci
Salihya Aydin
Salihya Baltaci Akgün
Santini Marija
Savić Vladimir
Schlagenhauf Patricia
Selahattin Ünlü
Selma Korkmaz
Sep Şeverdija Branka
Serdar Paşă
Šestan Mario
Shehu Eriona
Simić Saša
Sirovec Alenka
Sirri Kılıç
Štambuk Gijlanović Nives
Stevanović Goran
Stevanović Vladimir
Stojić Vildana
Strelec Mihajlo
Suha K. Arserim
Sušanji Mario
Svoboda Petra
Tambić-Andrašević Arjana
Tešović Goran
Tomažić Janez
Toz Seray
Turk Monika
Urošević Aleksandar
Valič Jasna
Vargović Martina
Vickovski Ninoslava
Vilibić-Cavlek Tatjana
Vince Adriana
Vodopija Radovan
White J Nicholas
Wilders Smith Annelies
Youle Mike
Yusuf Özbay
Zekan Şimé
Zeynep Banu Ramazonoğlu
Židovec Lepej Snježana
Ziya Alkan
Book of Abstracts

ORAL PRESENTATIONS
KEY-NOTE LECTURE

The changing face of international health and tropical medicine
Author: Nicholas J White
Affiliation: Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand
Centre for Tropical medicine and Global health, University of Oxford, UK.

Rapid population growth, increasing life expectancy and urbanization in developing countries have been associated in recent years with marked changes in the epidemiology of disease. Improved public health, sanitation, housing and nutrition have contributed substantially to these improvements. Vaccines have had a dramatic impact on the incidence of diphtheria, tetanus and measles. Increasing deployment of hepatitis B, Haemophilus influenzae B, meningococcal and pneumococcal vaccines have reduced the incidence and prevalence of these infections. Parasitic diseases caused by malaria, filarial infections, trematode infections and soil-transmitted helminths have all declined. The global pandemic of HIV has slowed and increasing numbers of HIV infected individuals worldwide now receive effective treatment. Increasing life expectancy and alarming increases in the prevalence of obesity have revealed an epidemic of diabetes mellitus and cardiovascular disease in low and middle-income countries. However infectious diseases continue to account for the majority of preventable deaths in childhood, and epidemics of SARS, avian influenza, MERS, and Ebola are reminders of pandemic potential. The most serious infectious diseases threat is the increasing loss of antibacterials to resistance resulting from widespread uncontrolled use of antibiotics in human medicine and animal and fish farming. Discovery of new antimicrobials has not kept pace with resistance, and common pathogens are becoming increasingly difficult to treat.

ORAL SESSION

MDR gram-negative infections and possibilities of antimicrobial treatment
Author: Marija Santini
Affiliation: University Hospital for Infectious Diseases Zagreb, Croatia

Travelers’ hospitalizations in countries with high MDR gram-negative prevalence are associated with high colonization and infection risks and transport of these patients to the parent state poses a risk for MDR spread. Therefore, adequate transport and epidemiological measures should be taken and therapeutic options should be well studied. These options frequently are limited to colistin and its combinations and to tigecycline and fosfomycin which do not have favorable pharmacokinetics (PK). Colistin based combinations are recommended because of in vitro proven synergism, colistin resistance prevention and higher possibility for initial adequate therapy. But, they have several drawbacks, like excessive costs, new resistance induction, high frequency of Clostridium difficile and fungal infections and frequent adverse events. There are numerous studies demonstrating improved treatment outcomes for colistin combined with carbapenems, sulbactam, rifampicin and even vancomycin. Nevertheless, these studies have limitations,
like observational, retrospective design, small size, combination heterogeneity and numerous confounders. The most favorable combination for particular pathogen has not been determined so far. Probably the most serious limitation is colistin dosing because it is highly variable and fundamentally changed during the recent years (now comprising high loading dose with maintenance doses with longer intervals). Besides the options mentioned, it seems that there are some new drugs (in phase III clinical trials) on the horizon, such as ceftolozane/tazobactam, plazomycin, eravacycline, ceftaroline/avibactam and ceftazidime/avibactam. In conclusion we can say that in the hospitalized passengers returning from the countries with high MDR gram-negative prevalence we should count on this type of pathogens and administer colistin based combination because these infections are difficult to treat and associated with poorer clinical outcomes.

Controversies of critical care treatment of patients with Ebola infection
Author: Milica Lukić
Co-author: Primož Karner
Affiliation: Department of Infectious Diseases, University Clinical Centre Ljubljana

Objectives: Intensive care units (ICU's) may be the most practical place to provide care for Ebola patients. However, reports of disease transmission to appropriately equipped healthcare staff, high mortality rate and lack of post-exposure prophylaxis, raised some important questions about safety of advanced critical care procedures in this setting.

Methods: In Slovenia, critically ill Ebola patients would be admitted to the intensive care unit at the Department of Infectious Diseases, University Clinical Centre Ljubljana. In order to provide adequate and safe care, we needed to define medical and logistic approach to these patients. Based on literature review and available guidelines, we developed a protocol for clinical care in critically ill Ebola patients and a protocol for ICU staff protection.

Results: Diagnostic and therapeutic critical care procedures were defined in clinical care protocol. Special consideration was given to high risk procedures (endotracheal intubation, mechanical ventilation, invasive blood pressure monitoring, blood transfusion, etc.). Invasive blood pressure monitoring, noninvasive mechanical ventilation, extracorporeal membrane oxygenation and cardiopulmonary resuscitation in the final stage of the disease were classified as high risk procedures for infection transmission and were not to be performed.

Conclusion: Seriously ill Ebola patients may benefit most when advanced critical care procedures are applied. However, invasive procedures pose high risk of infection transmission and their benefits and potential risks should always be carefully assessed. Until post-exposure prophylaxis is available, invasive procedures in Ebola patients should be limited to the minimum and planned in advance.

ECMO in travelers who acquired ARDS on vacation
Author: Vladimir Krajinovic
Affiliation: University Hospital for Infectious Diseases Zagreb, Croatia

Travel is important in the acquisition and dissemination of infection. It is estimated that >600 million people travel annually and that 15%–50% of travelers experience a health problem related to overseas travel. Respiratory tract infections (such as influenza and pneumonia) are the second most common cause of illness in travelers in returned travelers. Increasing age and male sex are associated with a greater risk of lower respiratory tract
infection, particularly pneumonia and bronchitis. Sometimes, these infections can be complicated with acute respiratory distress syndrome (ARDS), condition with high mortality. More than 60 possible causes of ARDS have been identified and other potential causes continue to emerge. However, only a few common causes account for most cases of ARDS. Main reasons for developing ARDS are sepsis, aspiration, pneumonia and trauma. In addition, in travelers severe malaria may also be complicated by the ARDS. Severe ARDS usually needs use of invasive mechanical ventilation but this treatment option is not sufficient in all patients. Veno-venous extracorporeal oxygenation (VV-ECMO) for respiratory support has emerged as a rescue alternative for patients with severe forms of ARDS. ECMO support allows adequate oxygenation and correction of hypercarbia under lung protective ventilation, therefore reducing ventilator-induced injury. ECMO referral should be considered early in infections in travelers complicated by severe ARDS refractory to conventional treatment.

Friday, 2 October 2015

KEY-NOTE LECTURES

The prevention and treatment of malaria
Author: Nicholas J White
Affiliation: Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand
Centre for Tropical medicine and Global health, University of Oxford, UK.

Antimalarial treatment has changed markedly in recent years. The artemisinin derivatives in combination with more slowly eliminated antimalarials (artemisinin combination treatments: ACT) are now first line treatment for falciparum malaria everywhere, and they are used increasingly for the treatment of P. vivax and other malarials. For the treatment of severe malaria artesunate has replaced quinine. As countries increasingly push for elimination, with increasing deployment of insecticide treated bed-nets and ACTs global malaria mortality has fallen by approximately one third. In the context of elimination low dose primaquine is added to the treatment of falciparum malaria to prevent transmission. In vivax malaria radical treatment with primaquine has been widely recommended but under used, however increasing availability of rapid tests for G6PD deficiency should facilitate increased use. Recent gains in malaria control are threatened by the emergence of artemisinin resistance in P. falciparum in South East Asia. This has spread in the region and ACT partner drugs are now beginning to fail. The containment response has been unsuccessful. Prevention of malaria relies upon personal protection and chemoprophylaxis. In endemic areas of Africa women in the second and third trimesters of pregnancy are given intermittent preventive treatment with monthly sulfadoxine-pyrimethamine. Across the sub-Sahel of West Africa where malaria transmission is intense during 3-4 months of the year, children under 5 are given monthly amodiaquine-sulphadoxine-pyrimethamine during the rainy season. Travellers rely upon atovaquone-proguanil, doxycycline, mefloquine or primaquine chemoprophylaxis. A malaria vaccine (RTS,S) which provides approximately 30-50% protection for one year has been approved by regulatory authorities for use in African children, and is now under consideration by WHO.
Travellers’ Malaria – Update 2015
Author: Patricia Schlagenhauf
Affiliation: University of Zürich Centre for Travel Medicine, WHO Collaborating Centre for Travellers’ Health, Institute for Epidemiology, Biostatistics and Prevention, UZH, Switzerland.

The extent of travel to areas with endemic malaria is increasing. Sub-Saharan Africa, with many high-risk malaria areas, receives in excess of 36 million travellers annually. SE Asia, Central and South America also receive several million travellers but here the risk of malaria is lower. The risk gradient ranges from low risk exposure in Central America to high risk in Central and West African countries. Recent studies on the epidemiology of imported infection show that malaria remains a top diagnosis in ill returning travellers. Plasmodium knowlesi, otherwise known as “monkey malaria” is a newly emerging threat to travellers visiting forested areas of SE Asia.

In the year 2015, travellers’ malaria can be prevented. We have the tools. The prevention strategy can be chosen based on the risk of malaria at the destination, the species, availability of anti-malarials and traveller characteristics. Personal protection against mosquito bites, chemoprophylaxis and the carriage of stand-by emergency self treatment (SBET) are key components. Priority drugs for chemoprophylaxis are atovaquone/proguanil and doxycycline. Mefloquine use, in 2015, is limited to some extent by the FDA black box warning and recent EMA restrictions but it remains a useful drug for many travellers. Tolerability is a key issue as the pre-travel recommendations are for healthy travellers. Primum non nocere. Recent studies have identified the profile of adverse events associated with anti-malarials. Another key issue in chemoprophylaxis is adherence and pharmacokinetic studies have highlighted the importance of compliance. The pre-travel consultation works and is associated with lower malaria proportionate morbidity in travellers. Personal protection measures are effective and a combination should be recommended but poor adherence can be expected. For travellers to low risk areas, the SBET strategy can be recommended and well tolerated artemisinin-based combinations are available. This approach has been used with success by several European countries (Switzerland, Germany, Austria and Italy). New, non-invasive technologies to diagnose travellers’ malaria (usually with low parasitemia initially) are being developed and include mobile phone technology and transdermal detection of parasites. To date, there is no vaccine for travellers malaria but two vaccine candidates RTS, S and a sporozoite based Pf SPZ vaccine hold promise for this indication.

Molecular diagnostic microbiology: first 20 years
Author: Mario Poljak
Affiliation: Institute of Microbiology and Immunology, Faculty of Medicine, University of Ljubljana, Slovenia

Molecular methods are based on the detection and partial or complete characterisation of microbial DNA or RNA in the clinical sample. In microbiology they can be used for diagnostic, epidemiological or research purposes. Molecular methods dramatically changed clinical microbiology. They allowed discovery of several clinically important and previously unrecognized or uncultivable pathogens and reduced the dependency of laboratory on
culture-based methods. In fact, in many cases molecular methods replaced culture as gold diagnostic standard (Chlamydia trachomatis, HSV encephalitis, enteroviral meningitis, human papillomaviruses). In last two decades, molecular methods have become more standardized, accurate, reliable, automated, rapid, cost-effective, and their clinical value for the diagnosis and management of a several infectious diseases has been proven. When applied wisely and selectively, molecular testing represents indispensable part of the routine laboratory practice of clinical microbiologist today.

ORAL SESSION

Current measles epidemiology in Central and Eastern Europe – can we do better?

Author: Goran Tešović

Affiliation: Pediatric Infectious Diseases Department – University Hospital for Infectious Diseases, University of Zagreb, School of Medicine

Measles is a serious and highly contagious infectious disease that can easily spread through airborne respiratory droplets or by direct contact with nasal and throat secretions of infected individuals. Although the majority of patients recover without complications, approximately 30% of cases are complicated by diarrhoea, pneumonia, otitis media, encephalitis and even death. Preschool age children and adults older than 20 years of age are more prone to complications. Measles vaccines are available as live, attenuated, monovalent vaccines or in combination with mumps and rubella (MMR) and/or varicella (MMRV) vaccines. In 2011, about 84% of the world’s children received one dose of the vaccine by their first birthday through routine health services – up from 72% in 2000. Two doses of the vaccine are recommended to ensure immunity and prevent outbreaks, as about 15% of vaccinated children fail to develop immunity from the first dose. Despite the widespread availability of safe and effective vaccines, measles remains a global public concern, especially in countries where infection is still endemic. During 2000–2011, annual measles incidence decreased by 65% worldwide, from 146 to 52 cases per 1 million population and the estimated number of measles deaths decreased by 71%, from 548,000 to 158,000. However, widespread transmission of MV began in late 2009, with large outbreaks being reported in various countries. Outbreaks in Europe contributed to a rise in the global number of reported cases from 7,499 in 2009 to 30,625 in 2010, mostly occurring in Western European countries. Between March 2012 and February 2013, a total of 8,127 cases of measles were reported across 30 European countries (29 European Union/European Economic Area [EU/EEA] countries, plus Croatia), mostly in the unvaccinated population. Furthermore, Romania and four developed countries (France, Italy, Spain and the United Kingdom) accounted for 94% of cases.

Immunisation against measles is recommended for all susceptible children and adults for whom measles vaccination is not contraindicated. The attenuated, live measles vaccines that are internationally available are safe and effective, and provide long-lasting protection. Reaching all children with two doses of measles vaccines should be the standard for all national immunisation programmes. To limit the impact of measles outbreaks, the WHO encourages surveillance for early detection, through assessment of the risk of spread and of severe disease outcomes, and rapid responses, including expanded use of the measles vaccine. It is recommended that vaccination is administered within 2 days of exposure to protect high-risk patients during an outbreak as this may modify the clinical course of the disease and may even prevent symptoms.
Routine measles vaccination programmes have been in place for more than four decades across all Central/Eastern European countries. Slovenia was the first country to introduce a two-dose MMR vaccine schedule in 1976, but currently, all countries in the region have adopted a two-dose MMR vaccine schedule. Currently, measles vaccination for children is mandatory in most countries. Data regarding measles vaccine coverage are not consistent across the region. According to the most recent data collected in 2011, only the Czech Republic, Croatia, Hungary and Slovakia achieved and sustained the ≥95% two-dose MMR vaccine coverage recommended by the WHO in order to eliminate measles by 2015. In Lithuania, vaccine coverage dropped from 97.9% to 93.7% in 2002–2011. In Turkey, a measles elimination programme has existed since 2002 and in 2003–2005, 18.5 million doses were distributed among children aged <15 years.

In Bulgaria, although the measles vaccine has been part of the immunisation programme since 2002, two-dose MMR vaccine coverage (local and national) has remained below the 95% coverage rate targeted by the WHO, which can explain, at least in part, the large number of cases reported during the 2009–2010 outbreak. Vaccination coverage is especially low among the Roma population who represent an important ethnic minority in many Central and Eastern European countries and are at increased risk for measles infection.

Although measles vaccines are strongly recommended for high-risk groups (i.e. those in contact with immunocompromised or measles infected patients, those who plan to travel to high-risk countries, and those who work in healthcare facilities), no official recommendations exist for high-risk groups in Croatia, Estonia, Latvia and Slovakia and for specific age groups in Latvia and the Czech Republic. Control measures for measles outbreaks are implemented in most CEVAG countries. In Bulgaria, vaccine initiatives such as social welfare, financial support, and social mediators are provided to address measles outbreaks. There is also a national programme for eradication of measles and congenital rubella in Bulgaria, which unfortunately has not been very successful. Croatia conducts contact tracing and vaccination of susceptible contacts, including healthcare workers without evidence of immunity, and recommends voluntary quarantine of susceptible contacts that cannot be vaccinated due to contraindications. In the Czech Republic, outbreak control measures include reporting of all cases, laboratory confirmation, case isolation, active sourcing and contact investigation, mass vaccination, including unprotected individuals within 3 days of contact and the unprotected population 3 days after contact, immunoglobulin administration to unvaccinated children up to 15 months of age, and medical supervision of unvaccinated individuals for 21 days. In Poland, control of measles outbreaks involves local immunisation campaigns among the Roma population. In Romania, control measures for outbreaks include vaccination campaigns in affected areas, free vaccination and regular meetings with local public health representatives to increase awareness in the general population. In Slovenia, measures include tracking of contacts, strict isolation of patients, vaccination of all susceptible contacts (i.e. contacts who have not completed the two-dose vaccination schedule or have no evidence of previous natural infection). In Turkey, MMR is given within 3 days after exposure to contacts aged >6 months, while intravenous immunoglobulin is given to those <6 months. One dose of MMR vaccine is given to unvaccinated children aged 1–4 years and to vaccinated healthcare workers, or two doses within 1 month interval, if they were previously unvaccinated.

The recent epidemiology of measles in Central/Eastern European countries highlights the importance of continued vaccination as disease rates decline, and the need to reduce the threats posed by unsubstantiated claims about the vaccine that undermine the success of vaccination programmes.
In conclusion, despite the remarkable impact that measles immunisation has on disease transmission, there are still obstacles that need to be overcome to eradicate measles in the Central/Eastern European region. Maintaining high immunisation coverage and strengthening surveillance are essential in order to meet and to maintain the 2015 WHO measles elimination target of <1 case per million population.

Crimean-Congo haemorrhagic fever in South-East Europe, burden and neglected problem.
Author: Dreshaj Shemsedin
Affiliation: Infectious Diseases Clinic, Prishtina, UCC of Kosova, Medical Faculty of Prishtina.

Crimean-Congo hemorrhagic fever (CCHF) is an acute, highly-contagious and life-threatening disease caused by a Nairovirus of the Bunyaviridae family. In recent times, the disease was first recognized during an outbreak in Crimea in 1944, however, later it became evident that the causative agent was identical to a virus isolated from a patient in Congo in 1956, and the name CCHF was adopted. CCHF virus (CCHFV) circulates in nature in a tick-vertebrate-tick cycle, mainly among cattle, sheep, goats, and hares. The infection is transmitted to humans primarily by ticks of the genus Hyalomma, but also through direct contact with blood or tissues of viremic patients or animals. Typical CCHF progresses rapidly with high fever, malaise, severe headache, and gastrointestinal symptoms. Prominent hemorrhages may occur at a late stage of disease, with case fatality rates ranging from 5% to 50%. CCHF is a disease of immediate notification to public health authorities because of the potential of nosocomial outbreaks and use in bioterrorism. CCHFV has the widest geographic range among all tickborne viruses, being endemic in more than 30 countries in Eurasia and Africa. CCHF activity has increased over the past decade and new foci have emerged in several Balkan countries, as well as in neighboring areas. In a serosurvey conducted in Northeastern Greece after the first human case occurred in June 2008, seroprevalence rates up to 5% were found in well-confined areas compared with 0% found in the same areas 20 years ago, suggesting recent introduction of the virus. After almost three decades, CCHF re-emerged in southwest Russia in 1999, with hundreds of cases being reported since then. Enzootic circulation of the CCHFV was documented in Turkey for several decades, however the first human cases occurred in 2002; since then, Turkey has experienced the largest ever recorded CCHF outbreak with more than 4,400 confirmed cases, mainly from rural areas in Northeast Anatolia. In SEE and Balkans’ countries the data reported to WHO are limited. Data for incidence are collected from individual publications, published in Pubmed and Scopus by individual authors. In Kosovo in 1954 was evidenced the family epidemy with 8 cases of CCHF. For almost 34 years was no patient suspect for CCHF. From 1989 when we evidenced 7 patients with hemorrhagic diathesis, confirmed later with CCHF, we evidenced each year isolated patient’s with tendency for epidemy. During 25 years we confirmed 309 cases with 64 deaths, general mortality 29.72%. From 1989 till 2002, patients are treated with supportive treatment 151 patients with mortality rate 21.85%. From 2002, till now, we are using Ribavirin in treatment according to WHO recommendation, we treat 158 patients with mortality rate 17.72%. This article present the problem of CCHF in SEE and our experiences in the use of ribavirin for treatment.
Human leptospirosis in Croatia – epidemiological and clinical characteristics

Author: Balen Topić Mirjana
Affiliation: University Hospital for Infectious Diseases “Dr. Fran Mihaljević”, Department for Gastrointestinal Infections  School of Medicine, University of Zagreb

Objectives: Due to the observed changes in epidemiology and clinical presentation, human leptospirosis has been recently recognized as a “reemerging” infectious disease worldwide. Since the first description of a patient with Weil's disease in Croatia in 1935, and until the present, leptospirosis has been a constant object of research by infectious disease specialists, epidemiologists, immunologists, veterinarians and foresters in our country. The aim of our study was to assess the epidemiological and clinical characteristics of human leptospirosis in Croatia.

Patients and methods: Retrospective cohort study; we analyzed official data issued by the Croatian Institute for Public Health for the period from 1990 to 2014. The clinical and epidemiological burden of 166 patients was studied, which had serologically/PCR proven leptospirosis, and were hospitalized at the University Hospital for Infectious Diseases “Dr. Fran Mihaljević” in Zagreb in the period from 2003 to 2014; data were collected from patients’ charts.

Results: According to official data, the mean yearly incidence of human leptospirosis in Croatia from 1990 to 2014 was 1.57/100,000 inhabitants (ranging from 0.27-3.42/100,000 inhabitants per year in the period studied). Among the cases reported in the observed period, 25/1765 (1.4%) died. In addition to the majority of sporadic cases, three minor outbreaks in rural areas were likewise recorded. Among the observed hospitalized patients, the clinical presentations of the disease were within the expected framework, with an overall case fatality rate of 0.6%; the rate for patients with Weil’s syndrome was 10.2%. The most commonly established infective serovars were Australis, followed by Saxkoebing, Icterohaemorrhagiae and Grippotyphosa.

Conclusion: We consider Croatia to be one of the countries with the highest incidence of human leptospirosis in Europe, but we have not found any elements of reemergence of the disease. The clinical presentation of the disease was within the expected framework. According to the profile of causative serovars, inland Croatia represents a specific, archaic natural focus for leptospirosis.

Availability of antiparasitic drugs in SE Europe

Author: Ljiljana Betica Radić
Affiliation: General Hospital Dubrovnik, Infectology Department, Dubrovnik, Croatia

Objectives: Parasitic infections are typically associated with poor and often marginalized communities in low and middle income countries and are especially common in tropical areas of Africa, Asia and Latin America, where people live in unsanitary environments. However, these infections are also present in developed countries due to increasing international travel and immigration from countries where parasitic infections are endemic. It is paradoxical that, despite the high level of expenditure on health care in the Europe, we have less access to effective and inexpensive antiparasitic drugs.

Methods and results: World health organization (WHO) statistics: it is estimated that about 2 million people are dying each year from malaria, 150 000 from African trypanosomiasis and 80 000 from leishmaniasis; while 200 millions are infected with schistosomiasis and 120
Antiparasitic drugs: a retrospective analysis of new drugs introduced over the past decades clearly showed that from the 1393 new chemical entities (NCE) marketed worldwide between 1975-1999, only 13 were specially indicated for tropical diseases. The occurrence of resistance of the parasite is a constant threat.

Reimbursement list of Croatian Institute for Health Insurance (HZZO): anti-parasitic drugs (ATC-P01, P02, P03): chloroquine, quinine sulfate, pyrimethamine, artemether, praziquantel, mebendazole, albendazole (oral form), pyrethrin, krotamiton (lotion).

Conclusion: The pharmaceutical industry is abandoning tropical diseases because developing countries markets are not profitable. When the market does not spontaneously provide the needed treatments, it is a role of society (developing and Western countries governments, international institutions) to take appropriate steps. Without any specific social welfare mission, pharmaceutical industry will have no interest in finding treatments for tropical diseases.

Antimicrobial resistance in Europe

Author: Arjana Tambic Andrasevic
Affiliation: University Hospital for Infectious Diseases Zagreb, Croatia

Antimicrobial resistance (AMR) is recognized as one of the major medical problems throughout the world. The major driving force for resistance development is overuse of antibiotics and this first affects normal human microbiota. However, the problem remains largely unrecognized in the community and attracts medical and public attention only when causing multidrug or pandrug resistant bacterial infections in hospitals. The most popular multidrug resistant organism, the methicillin resistant Staphylococcus aureus (MRSA) has demonstrated interesting shifts in the spread of resistant clones. While hospital acquired MRSA is slightly decreasing in many parts of Europe, the newly emerged community acquired MRSA and livestock associated MRSA are increasing in some European countries although not at a pace recorded in the USA. While there are still available options for the treatment of multiply resistant gram-positive bacteria, options for treating gram-negative bacteria are becoming increasingly limited. Successful clones of carbapenem resistant pseudomonas are widely spread but are showing stable rates of resistance, while resistant acinetobacter emerged more recently and became a major problem in many south and eastern European countries. Of special concern is the raise of carbapenem resistant enterobacteriaceae as these bacteria are part of normal human microbiota and have a potential to cause both community and hospital acquired infections. Information concerning the true extent of the AMR problem is not available in many parts of the world. Reports from individual hospitals may not represent a true situation in the country or region and existing national and regional AMR surveillance networks do not use same methodology so are difficult to compare. Poor use of microbiology services, lack of communication between microbiologists and clinicians and low awareness of the AMR burden further promote the spread of resistance in individual settings and regions but also worldwide. With the increased human migration and transportation of goods resistant bacteria are very efficiently disseminated throughout the world.
Women's health and travel

Author: Mihajlo Strelec
Co-author: Alenka Sirovec
Affiliations: 1 University Gynecologic Clinic, Petrova 13, Zagreb, Croatia, 2 Clinical hospital «Sveti Duh», Zagreb Croatia

Menstrual cycle disturbances are often present in travelers. Different time zones, exhaustion, and emotional stress can trigger irregular bleeding. Women should be prepared by packing enough personal hygiene products. On the other hand, excessive exercise (long sight-seeing, swimming, etc.) and stress also can cause missed periods or irregular bleeding. This could throw off fertility patterns if women are relying on natural family planning. If a menstrual period is likely to occur during traveling dates, women may wish to postpone it by using one of hormonal methods. In order to do this effectively, therapy should be planned before the journey starts.

Birth control methods have to be planned ahead as it may be hard to purchase the used method in some areas, therefore extra packing should be brought along. It is advisable to always bring condoms when traveling abroad, even when another birth control method is used, as condoms are the only birth control method that protects against sexually transmitted diseases (STD-s). Condoms can also protect from urinary and vaginal infections that may be more likely to occur since a traveling environment is often less hygienic than normal living conditions. In addition, packing of oral emergency contraception in case of failure or misuse of regular birth control method or unprotected sex, should be considered too.

Long-distance travel has been linked to potentially fatal deep vein thromboses (DVT) or pulmonary embolism (PE). Combination hormonal contraception users have elevated risk for developing blood clots, so additional precautions should be added if plans include sitting still for a long time.

Most commercial airlines allow pregnant women to fly up to 36 weeks of gestation. In the absence of obstetric or medical complications, pregnant women can observe the same precautions for air travel as the general population and can fly safely. Pregnant women should be instructed to continuously use their seat belts while seated, as should all air travelers. Pregnant air travelers may take precautions to ease in-flight discomfort and, although no hard evidence exists, preventive measures can be used to minimize risks of venous thrombosis. For most air travelers, the risks to the fetus from exposure to cosmic radiation are negligible. Air travel is not recommended at any time during pregnancy for women who have medical or obstetric conditions that may be exacerbated by flight or that could require emergency care. In the absence of a reasonable expectation for obstetric or medical complications, occasional air travel is safe for pregnant women.

Expedition and wilderness medicine

Author: Lana Đonlagić
Affiliation: Croatian Mountain Rescue Service, Croatia

Expedition and wilderness medicine is a term that combines rescue medicine, sport medicine as well as more specific branches as polar or high altitude medicine. It is being intensively studied both at the research institutes and on expeditions as a fascinating synergy of technology and science. Ophthalomologists are concentrated on the research of HARH (High Altitude Retinal Hemorrhage), neurologists on HACE research (High Altitude Cerebral
Edema), psychologists are developing tests to describe cognitive functions and many physicians are being trained to work in extreme environment. The result of all this effort are numerous new findings in pathophysiology and therapy of altitude illness, hypothermia or the combination of the two, and all this in the end results with increased safety on expeditions and enables even further development of expeditionism.

Prevention of HIV infection in travelers
Author: Davorka Lukas
Co-author: Josip Begovac
Affiliation: University Hospital for Infectious Diseases „Dr Fran Mihaljević, Zagreb, Croatia

HIV can be transmitted from one person to another through: unprotected sexual contact (anal, oral, vaginal); shared needles or equipment for injection drug use; unsterilized needles for tattooing, body-piercing or acupuncture; blood transfusions or organ transplantation; artificial insemination; from an HIV-infected mother to her infant (during pregnancy, delivery and breast feeding); exposure to blood and other potentially infectious body fluids via percutaneous injury or splash exposures to mucous membranes or non-intact skin.

HIV infection occurs worldwide. Although the prevalence and incidence of HIV infection, differs between countries significantly, the risk for international travelers is generally determined less by geographic destination and more by behavior such as unprotected sex and drug use. Geographic destination plays an important role for those travelers who might undergo medical procedures, whether scheduled or in an emergency, in developing countries where the blood supply, organs and tissues used for transplantation might not be adequately screened which increase the risk of HIV transmission. Since, there is no vaccine available to prevent HIV infection, all travelers should be informed about the risk and routes of transmission of HIV infection. As a part of pre-travel advice, health care provider should inform travelers how to reduce their risk of acquiring HIV infection and advice to: avoid unprotected sex (anal, oral or vaginal) and to use condoms consistently, to avoid heavy partying, drinking or taking illegal drugs, which can change sexual inhibitions or alter ability to make decisions, to avoid sharing needles, syringes, toothbrushes or shavers; to avoid exposure to unsterilized needles for tattooing, body-piercing or acupuncture, avoid injections, blood transfusions and organ transplantations unless it is an emergency.

Regarding pre-travel advice, special attention should be given to HIV postexposure prophylaxis (HIV PEP) with antiretroviral drugs. Travelers who have been exposed to HIV in a nonoccupational setting (through sex or needle sharing) or occupational setting (those working in a medical setting), should seek immediate medical consultation to consider postexposure prophylaxis. HIV PEP consists of a combination of antiretroviral drugs that should be started as soon as possible after exposure (preferably within 4 hours) and up to 72 hours after exposure. HIV PEP is to be taken regularly, on a daily basis for 28 days. HIV preexposure prophylaxis (PrEP) is not in routine practice, but since 2014 is recommended in many guidelines (US CDC, IAS-USA, BHIVA, WHO) for sexually active MSM, heterosexually active men and women, injection drug users at substantial risk of HIV acquisition because of risky behavior. The Proud study (daily oral emtricitabine plus tenofovir (TDF/FTC) and Ipergay study (“on demand” oral PrEP with TDF/FTC) showed a reduction of HIV incidence of 86% (95% CI: 40-96) and 86% (95% CI 58-96) respectively. PrEP could be a future option for prevention of HIV infection in travelers who practice very risky behavior. Each traveler is to be advised to see a health care provider immediately after possible exposure to HIV infection in order to be tested, counselled and treated as appropriate.
The challenge of point-of-care testing for fast and accurate results

Author: Oktavija Đaković Rode
Affiliation: University Hospital for Infectious Diseases „Dr. Fran Mihaljević“, Zagreb

The need to deliver care close to the patient expands the point-of-care testing (POCT) performed outside of the standard laboratory in a rapid turnaround time of test results, with the main purpose to improve treatment and medical outcomes. POCT technology is developed simultaneously with new challenges. It is the fastest growing part of diagnostic industry. Technological advances enable the development of more complex POCT assays for rapid diagnostic. Small handled quantitative and qualitative strips belong to the first generation of POCT. The second generation with more complex POCT based on molecular nucleic acid amplification and detection (PCR) assays in bench-top devices with built-in fluids, often variants of those used in laboratory, is available now. Furthermore, the third generation with ability to simultaneously measure multiple parameters known as multiplexing is under development. The main POCT prerequisite is that all equipment needs to be simple, robust and safe in storage and use, and results concordant with standard laboratory methods. The managing of POCT outside of routine laboratory is challenging for non-laboratory operators as well as for laboratory staff need to provide reliable and accurate results. The place where POCT is performed has to be organized as laboratory, and necessarily supervised by the laboratory personnel for monitoring the POCT implementation and quality control. Some problems of POCT such as poor regulatory control, quality monitoring absence, lack of guidelines and/or industry standardizations, potential errors due to poor analytical performance, problems of insufficient operator trainings, lack of cost-effectiveness evaluation need to be emphasized. POCT needs to be an integral part of health care management in coordination with standard laboratory. Only after cost-benefit analysis, continuing expansive quality assurance and training protocols implementations, maximal benefit to patient care might be ensured. Incorrect use of POCT presents a risk to patient and additional cost of health care.

Molecular diversity of HIV-1 in Croatia

Author: Snjezana Zidovec Lepej
Affiliation: University Hospital for Infectious Diseases, Zagreb

HIV-1 comprises four distinct lineages or groups: major (M), outlier (O), non-major, non-outlier (N) and P that originated via independent cross-species transmission events. Group M represents the pandemic form of HIV-1 and is classified into 9 subtypes with numerous circulating recombinant forms (CRF). Molecular diversity of HIV-1 in Croatia has been analyzed in 120 newly-diagnosed patients entering clinical care at the Reference center for HIV/AIDS in the period 2006-2008. Subtype B was detected in 106/120 (88%) patients whereas non-B subtypes included subtype A (n = 6, 5%), subtype C (n = 4, 3.3%), CRFo2_AG (n = 2 patients, 1.7%), CRFo1_AE (n = 1, 0.8%), and subtype D (n = 1, 0.8%). The majority of patients infected with subtype B were males (n=103, 97.2%), mainly men who have sex with men (MSM, n=78, 75.6%) whereas 10/14 patients with non-B subtypes were heterosexual. More recent studies on patients entering clinical care during 2013 also showed the predominance of subtype B (25 of 30 patients), mainly in MSM. In conclusion, the majority of HIV-1 infections in Croatia correspond to subtype B but non-B subtypes continue to be introduced, mainly via heterosexual transmission.
Saturday, 3 October 2015

KEY-NOTE LECTURES

Migratory crisis in the Mediterranean: implications for health
Author: Paula Farias
Affiliation: Head of Mission, Sea Rescue Operation, Médecins Sans Frontières, Operational Centre Barcelona - Athens

In the view of the current Mediterranean humanitarian crisis, the biggest refuge crisis since the World War two, we will give a general view of it, analysing the trends, the origins, the pushing factors and the evolution of the crisis at the same time that we will analyse the different impacts on health depending on the origins of the migrants and the chosen routes.

Global Infectious Disease in Migrants: HIV, TB, Viral Hepatitis & STD
Author: Davorka Lukas
Affiliation: University Hospital for Infectious Diseases „Dr Fran Mihaljević“, Zagreb, Croatia

UNHCR's new annual Global Trends report shows that worldwide displacement from wars, conflict, and persecution is at the highest levels that has ever been recorded, accelerating fast with 59.5 million people forcibly displaced at the end of 2014 compared to 51.2 million a year earlier. 51% of the refugee population in 2014 were children below 18 years. The main acceleration has been since early 2011 when war erupted in Syria, and became world's single largest driver of displacement, followed by Afghanistan and Somalia. In 2014, an average of 42,500 people became refugees, asylum seekers, or internally displaced every day, representing a four-fold increase in just four years. Worldwide, one in every 122 humans is now either a refugee, internally displaced, or seeking asylum, coming from different countries and regions of the world with various social, cultural, ethnic, demographic, or economic characteristics, different epidemiological backgrounds, health and health care histories. From the perspective of health and health care, migration is a dynamic, multi-stage process that encompasses several stages: 1. pre-migration health status and care experience; 2. exposure to disease and health care in transit; 3. exposure to disease and care in countries of destination; 4. health and health care on periodic return to places of origin; 5. circular migration, periodic infection and poor tracking. Despite the significant changes in the prevention and management of infectious diseases, in developing countries and in countries in transition, where the investment in public health has been limited, vaccination programme often inappropriate and where poverty has remained widespread, infectious diseases have continued to spread. Many of these countries, from which people are now moving to come to the EU are countries with high prevalence of HIV, TB, viral hepatitis, STD. On the other side, a further burden of infectious diseases can be imposed if the countries they move through have a high prevalence of the disease. In recent years the routes taken by some migrants have become long, and the socio-health conditions in which they live during the process are poor. Their exposure to infectious diseases such are HIV, TB, viral hepatitis, STD, are proportional to the time they stay, and the extent to which they interact with local communities. Refugees and displaced
populations are at particularly high risk of developing TB. The crowded living conditions of these populations can facilitate the transmission of TB infection. Coexistent illness, particularly HIV and poor nutritional status, can also weaken their immune system and make them more vulnerable to developing active TB. TB is an increasingly important cause of morbidity and mortality among refugee and displaced populations, and multidrug and extensively drug-resistant TB is of special concern. Early recognition and management of these diseases is important, not only for an individual’s health but also for public health. In the host country adequate housing, health care, nutrition, water, sanitation, social services, and education should be provided along with preventive services.

Screening migrants: a practical approach for parasitic tropical diseases

Author: Rogelio López-Vélez. MD, PhD, DTM&H,
Affiliation: Asoc. Prof. National Referral Unit for Tropical Diseases. Infectious Diseases Department. Ramón y Cajal University Hospital, Madrid, Spain.

Parasitic diseases are a heterogeneous group of infections which may be caused by protozoa, helminths or ectoparasites. A recent estimation of the global burden of the most important neglected tropical diseases caused by helminths and protozoa reported over 5400 million persons may be at risk and over 1200 million may be infected. Some parasitic infections, such as toxoplasmosis and giardiasis, have a worldwide distribution, whereas others such as trypanosomiasis and filariasis remain geographically restricted to certain areas. Importation of parasites by mobile populations into new geographical areas leads to changes in the epidemiology of these infections and they may have consequences both for the individual concerned and for public health. The main protozoan infections reported among immigrants include malaria, intestinal protozoa and Chagas disease. Some imported protozoan infections, such as malaria, may be life-threatening and others such as American trypanosomiasis can lead to chronic disease and/or disabilities. Control of transmission is also a relevant issue, as in the case of Chagas disease which can be transmitted by nonvectorial routes such as from mother to child and through blood transfusions or organ transplantation from an infected donor. Diagnosis and management of protozoan infections outside endemic areas may also pose a challenge for physicians who may be faced with unusual and complex presentations of infections. In certain cases, coinfection with several parasites may occur, especially in immigrants. The main helminth infections reported among immigrants include malaria, intestinal protozoa and Chagas disease. The most frequent helminth infections associated with VFR travel include filariases and intestinal parasites. Some imported infections, such as acute schistosomiasis, may cause severe disease whereas others such as onchocerciasis can lead to chronic disease and/or disabilities. Some chronic infections have been associated with an increased risk of development of neoplasia, as in the case of chronic urinary schistosomiasis and squamous cell carcinoma of the bladder. Immunocompromised patients, such as those with HIV infection or those receiving immunosuppressive therapy, may be particularly at risk for developing symptomatic infections or even reactivation of imported diseases. Strongyloidiasis may be a concern for immunocompromised patients as reactivation may occur even many years after the initial exposure. Diagnosis and management of parasitic infections outside endemic areas may also pose a challenge as unusual and/or complex presentations may occur especially if coinfection with several parasites exists. Although person-to-person transmission of helminths does not generally occur, risk may be associated with uncontrolled importation of infected animals or contaminated food products.
Aging with HIV
Author: Mike Youle
Affiliation: Director of HIV Clinical Research at Royal Free Centre for HIV Medicine, London, United Kingdom

The profile of patients in Europe infected with HIV is changing and this will have major implications for clinical care. By 2030, almost three-quarters of patients on ART will be aged 50 years or older. This ageing HIV-infected population will put new demands on the healthcare systems, and care management for these individuals will need to be provided by a wide range of medical disciplines, including geriatric medicine, cardiology, and oncology. They will increasingly develop age-related non-communicable diseases (NCDs). The increasing burden of NCDs will be driven by a steep increase in prevalence of cardiovascular disease, diabetes, and malignancies. In 2010, 19% of HIV-infected patients had been diagnosed with at least one cardiovascular disease, 4% with diabetes, and 2% with a non-AIDS disease, 4% had diabetes, and 2% had a non-AIDS malignancy in the Athena, Dutch cohort. Their model predicts that in 2030, 78% of patients will have been diagnosed with cardiovascular disease, 17% with diabetes, and 17% with malignancies.

Another of the many consequences of an ageing population and increasing burden of NCDs will be an increase in polypharmacy driven mainly by cardiovascular drugs. This will increase the complexity of care and specifically drive an increase in potential drug-drug interactions. This lecture will examine some of the challenges ahead and look at ways to prepare for this greying of the HIV epidemic.

Ending HIV/AIDS in Southeast Europe: what are the challenges?
Author: Josip Begovac
Affiliation: University Hospital for Infectious Diseases, University of Zagreb School of Medicine.

There is a strong global consensus that the tools now exist to end the AIDS epidemic. This confidence is based on a combination of major scientific breakthroughs and accumulated lessons learned over more than a decade of scaling up the AIDS response worldwide. HIV treatment can dramatically extend the lifespan of people living with HIV and effectively prevent HIV transmission. There are also many proven opportunities for HIV prevention beyond medicines, including condoms, behavior change and programmes with key populations. Key step to “The End of AIDS” is epidemic control which means reduction of disease incidence, prevalence, morbidity or mortality to a locally acceptable level as a result of deliberate intervention measures. This is a point where HIV no longer represents a public health threat and no longer among the leading causes of country's disease burden. Southeastern European countries have a low-level HIV-epidemic. However, there is still an increasing number of newly diagnosed HIV infections in recent years. Patterns of HIV transmission in southeastern Europe indicate that men who have sex with men (MSM) bear the highest burden of HIV. It is difficult to apply the concept of „the end of AIDS“ to settings with a low-level epidemic. In such settings the definition of „epidemiologic control“ should include the absence of an increasing trend over time. The major challenges are how to
increase early HIV diagnosis, how to have effective targeted testing for key populations and fighting stigma. There is also still an issue of sustainable treatment (without stockouts) and availability of antiretrovirals.

Elimination of hepatitis C, dream or reality?
Author: Adriana Vince  
Affiliation: University Hospital for Infectious Diseases, University of Zagreb School of Medicine.

Hepatitis C virus (HCV) infection is one of the main causes of chronic liver disease worldwide. The number of chronically infected persons worldwide is estimated to be about 150 million. About 5-15% of all people living with HIV are coinfected with HCV. The long-term HCV infection can lead to extensive fibrosis and cirrhosis and hepatocellular carcinoma (HCC). It is estimated that about 500,000 deaths per year are attributed to HCV globally. However, it is estimated that the majority of persons living with HCV are unaware of their infection. The long awaited all-oral therapy for hepatitis C virus infection has arrived by the registration of the hepatitis C nucleotide inhibitor sofosbuvir in a combination of the NS5A inhibitor ledipasvir or NS5B inhibitor daclatasvir; the protease inhibitor simeprevir, and the 3D regimen based on the ritonavir boosted protease inhibitor paritaprevir; the NS5A inhibitor ombitasvir, and the non-nucleoside polymerase inhibitor dasabuvir. Novel regimens for hepatitis C virus (HCV) have shorter treatment durations and increased rates of sustained viral response, less side-effects compared to standard therapies with pegylated interferon-alfa and ribavirin. By achieving the cure rates of over 90% for people with chronic HCV infections, the new therapies have the potential to change the course of the HCV pandemic. If these treatments can be widely used, in combination with effective HCV prevention interventions, the elimination of HCV as a public health concern can be a realistic goal. Therefore the World Health Organization is developing the first global strategy for addressing the viral hepatitis pandemics. The global targets regarding HCV infections include 70% reduction in HCV incidence by 2030 compared to 2010 and 60% reduction in HCV-related deaths by 2030 compared with 2010, 90% people diagnosed and 90% of eligible people treated and cured by 2030. The WHO strategy is calling all countries to develop and implement their national strategies for preventing, diagnosing and treating viral hepatitis based on local epidemiological context, in order to eliminate hepatitis C by year 2030.
KEY-NOTE LECTURE

Dengue: an emerging problem in travellers
Author: Annelies Wilder-Smith
Affiliation: Lee Kong Chian School of Medicine, Singapore

Dengue fever has evolved into one of the most important resurgent tropical diseases in the past 20 years, with expanding geographical distribution of both the viruses and the mosquito vectors, increased frequency of epidemics, the development of hyperendemicity (co-circulation of multiple virus serotypes) and the emergence of dengue haemorrhagic fever in new areas. Dengue virus infection of all four virus serotypes causes a spectrum of illness ranging from asymptomatic or mild febrile illness to severe and fatal haemorrhagic disease. Severe disease is characterized by vascular leakage leading to shock. Vaccine development has now come a long way, with the first vaccine candidate (Sanofi Pasteur) having completed Phase 3 trials, and two other candidates entering Phase 3 trials this year.

International travellers have the potential both to acquire and to spread dengue virus infection. Risk factors for acquiring dengue depend on duration of travel, season and destination. The incidence of dengue in travellers to Asia is now higher than that of malaria, and higher than that of other travel related diseases such as hepatitis A or typhoid fever. It is important that health care providers have an understanding of the epidemiology and risk, clinical spectrum, diagnosis, management and prevention of dengue virus infections in travellers. Viremic returning travellers to Europe have triggered small contained clusters of dengue cases in Southern France and Croatia. The first large outbreak involving more than 2000 persons occurred in Madeira, Portugal, in 2012. Predictive models for the risk of introduction of dengue into Europe will be presented.
Book of Abstracts
POSTER PRESENTATIONS
000

**Comprehensive STD Clinic - luxury or necessity**

**Author:** Šime Zekan, MD  
**Affiliation:** University Hospital for Infectious Diseases Zagreb, Croatia

The current system of care for sexually transmitted diseases (STDs) in Croatia is limited, fragmented and requires referral from a general practitioner. There is no point-of-care testing at STD services and the etiologic diagnosis is usually established only after patients are referred to a separate microbiological diagnostic service. This takes time, is stigmatizing and results in low national rates of diagnosed and treated STDs. Nowadays due to increased mobility and internet contacts, STDs are easily introduced and reintroduced by international and regional travel. Many of our patients got infected abroad or at home having sex with foreigners.

We established an accessible “one stop shop” STD service for men in Zagreb, Croatia, to test and treat (STDs). We aimed at MSM (men having sex with men) because their sexual behavior put them at higher risk but we also tested heterosexual men who report symptoms or high risk behavior.

Unusually high rates of certain STDs compared to the Croatian National Registry for STDs have been found. Furthermore, during our routine practices we noticed that diagnostics and treatment patterns considerably vary among different settings and different physicians. We believe that comprehensive STD Clinic that could test and treat in „real time“ all potential patients, men or women, provide immediate treatment for patients and their partners would improve outcomes and surveillance of STDs in our settings.

Our plan is to expand our service (increase working hours, include women, improve testing capacities) and disseminate this model throughout Croatia by practical education of health care workers involved in STDs.

001

**Hepatitis B: a survey of knowledge, attitudes and practices amongst backpackers in Thailand**

**Author:** Georgina H Frew  
**Co-authors:** Sabrina Grant, Gilles DeWildt  
**Affiliation:** University of Birmingham, Birmingham, United Kingdom

**Objectives:** Hepatitis B can cause acute illness and long-term complications. In 2013, 200 million tourists visited countries that are endemic for hepatitis B virus (HBV). Backpackers are potentially at greater risk of hepatitis B than other travellers, yet exposure to HBV remains under researched in this population. Thailand is a popular backpacker destination with endemic HBV. This study aimed to determine the proportion of backpackers in Thailand who are at high risk of HBV exposure and identify the factors associated with exposure and immunisation.

**Methods:** A cross-sectional survey of backpackers visiting two islands in Thailand was performed during February and March 2015. Participation in activities with high HBV exposure risk was recorded, alongside rates of vaccination and an evaluation of knowledge
and attitudes towards the risk of HBV. Results: 1680 questionnaires were completed and analysed; the median participant age was 24 (range: 18-68) and 47.9% were male. 80% of participants reported seeking pre-travel health advice. 332 (20.8%) took part in activities with a high risk of HBV exposure; exposure was associated with younger age, male gender and longer trip duration. Over two-thirds of the sample reported no protection against HBV. 370 (24%) were able to correctly identify HBV transmission methods and 740 (44.1%) were unaware of the risk of HBV in Thailand or considered it to be low. Conclusion: The proportion of backpackers in Thailand participating in high-risk activities was double the level found in previous studies that have examined the HBV exposure risk amongst travellers to endemic countries. Voluntary risk activities were the largest source of potential exposure to HBV and rates of vaccination are low. Backpackers should be considered for vaccination against HBV and the pre-travel health consultation should include education on risk behaviours, particularly sexual health and body modification.

Some baseline characteristics of acute viral hepatitis in the Clinic for Infectious Diseases in Tuzla

Author: Jasmina Petrović
Co-authors: V. Stojić, S. Ahmetagić, L. Delalić, M. Horozić, E. Karabegović
Affiliation: University Clinical Center Tuzla, BiH

Acute viral hepatitis A, B and C is one of the rare disease that occurs throughout the year with occasional higher incidence of infection. Despite the higher interest of the medical community for chronic viral hepatitis acute viral hepatitis is still present and, often, the way of transmission can not be detected. In developing countries, hepatitis A is responsible for 20-25% of cases of acute hepatitis. Hepatitis B virus infects 5% of the world's population or about 350 million people, and liver damage occurs due to the host's immune response to viruses. In industrial countries 20% of acute hepatitis refers to infection with hepatitis C. In the period from 2011 to 2014, at the Clinic for Infectious Diseases in Tuzla it were hospitalized 184 patients, 94 men and 90 women; with acute viral hepatitis A its were 156 patients and with non hepatitis A 28 patients (27 with hepatitis B and 1 patient with hepatitis C). Retrospective analysis of medical histories noted that they were all successfully treated except one patient with acute hepatitis C and severe comorbidity with consequently lethality. The average age of patients hospitalized with hepatitis A was 11,55 (± 3,16) years, and with hepatitis B 41,96 (± 20,19) years. The average length of hospitalization of patients with hepatitis A was 11,56 (± 3,16) days, and the hepatitis B 23,4 days (± 9,85). The majority of patients (74 or 40%) were living in the municipality of Živinice. Risk factor for the occurrence of infections with hepatitis A in 51% were poor living conditions, and in 31% of cases of contact with the environment; in the case of hepatitis B in 21% of the risk factor remains unknown. The majority of patients (86 or 55,13%) with "A" and 11 patients (39,29%) with hepatitis B had moderately elevated transaminase (12-21 x ULN), and 1 patient with hepatitis A and B had increased transaminases by more than 50 folds; 65 patients with hepatitis A (41.03%) had bilirubin 3- 5 x ULN, and 12 patients (42.86%) with hepatitis B elevated bilirubin 6-11 folds. There was no statistically significant difference in transaminases in hepatitis A and hepatitis B (p = 0.09) in contrast to which bilirubin was observed a statistically significant difference (p = 0.0001). The most common symptoms were the occurrence of dark urine, loss of appetite and vomiting, and fatigue. Applied treatment consisted of supportive care, whereas 62 patients and antibiotic therapy (in 5 cases due to
comorbidities). Patients with acute hepatitis B and threatening cholestasis with encephalopathy, as well as one case of fulminant hepatitis B threatened with lamivudine. When discharged 34 patients (18.48%) had normal or mildly elevated ALT (<1.5 x), and 2 patients (1.32%), which, along with personal request, had left the Clinic from 13.5 to 15 x increased ALT. Despite the serious disorders of biochemical findings and severe symptoms of disease present in certain cases, we recorded the successful treatment of patients with acute hepatitis A and B.

003

The Risk of Measels Outbreaks on Cruisers and the Problem of Vaccination Status of Crew Members and Passengers

Author: Dana Pahor
Co-authors: Mario Sušanj¹, Radovan Vodopija², Tanja Celevska³
Affiliation: Teaching Institute of public health of Primorsko-goranska county, Rijeka;
²Andrija Stampar Teaching Institute of Public Health, Zagreb ;
³Medical Centre for Occupational Health, Rijeka

Objectives. Measles are one of the most contagious diseases in the world. Experience shows that cruisers are among the most risky places for potential measles outbreaks due to great number of international passengers of all ages and crew members being in close contact. In the past ten years, there were several measles outbreaks recorded and connected with cruisers. According to the Centre for Disease Prevention and Control (CDC) recommendations for travellers and crew members on cruisers, all crew members should have a documented proof of immunity to vaccine preventable diseases (VPDs); while passengers, especially older (age more than 65) and immunocompromised people should be up-to-date with routine vaccinations before travel, as well as any required or recommended vaccinations specific for their destinations; women of childbearing age should be immune to rubella and measles before cruise ship travel. The Croatian crew members who are going on cruisers are very well vaccinated against measles, because such vaccination is mandatory and included in the National vaccination calendar of the Republic of Croatia. The problem occurs when the certification of vaccination is lost and it is not possible to present the proof of the previous vaccination. Methods. In this paper, the data are presented in form of tables and graphs about vaccination of seamen at Teaching Institute of Public Health Primorsko-goranska County in period from 2000 to 2014, with special aspect on the measles vaccination.

Results. Out of 8804 vaccinations and 8307 vaccinated persons, 49 of them were vaccinated against measles which present 0.5% of the total number. Until 2007, there had been no records of vaccinations against measles but since than, considerable number of vaccinations has been recorded every year.

Conclusion. It is evident an increase of vaccination in the last 8 years. The reason is that many shipping companies and recruiting agencies require that future crew members on the cruisers have to be properly vaccinated as a condition for their employment, in order to avoid potential financial compensations and payments to the passengers. At Teaching Institute of Public Health of Primorsko-goranska County exists an Advisory centre for travellers and seamen where epidemiologists do the counselling prior to departure, vaccinations and issue international certificates of vaccinations (WHO), and serology testing when necessary.
The presence of Legionella spp. in water supply system of different accommodation sites

Author: Anita Rakić
Co-author: Anamarija Jurčev Savičević, Nives Štambuk-Giljanović
Affiliation: Teaching Public Health Institute of Split-Dalmatia County

Objective: Implementation of preventive measures in different accommodation sites is the key to control of Travel associated Legionnaires' disease which occurs after exposure to contaminated water aerosols. Therefore, it is important to monitor these facilities and educate their staff to implement preventive measures. In hotels with year-round operation, the water system is continuously rinsed thus reducing the concentration of Legionella bacteria in the system. In hotels with seasonal work, water is stagnating while the property is closed and, if preventive measures before the opening of the facility are not implemented, the risk of Legionnaires' disease is increasing. Sampling and analysis of water is often carried out in order to gain orientation on the potential risk of accommodation site under surveillance.

Methods: We conducted an epidemiological survey and microbiological analysis of domestic hot water for the presence of Legionella spp. in two accommodation sites with year-round operation and two accommodation sites with seasonal work in Split-Dalmatia County during 2009-2012.

Results: All monitored objects are supplied with tap water. A total of 425 samples of hot water, of which 206 samples from facilities with seasonal work and 219 samples from facilities with year-round operation. Of all analyzed water samples, 116 (27.2%) samples were positive to Legionella spp. The difference between 57 (26.03%) positive samples from the constantly open facilities and 59 (28.64%) positive samples from seasonal open accommodation sites was not statistically significant ($\chi^2 = 0.246, p = 0.620$).

Conclusion: This study showed that there is no difference between the isolation of Legionella spp. from hot water due to the year-round or seasonal operation of the facility, and that people are equally at risk of contracting the disease. It is therefore important to carry out regularly preventive measures to reduce the risk of Legionnaires' disease for tourists and facility staff.

Evaluation of conjunctival swab sampling in the diagnosis of canine leishmaniasis: a two-year follow-up study in Çukurova Plain, Turkey

Author: Seray TOZ
Co-authors: Mehmet Karakuş, Hatice Ertabaklar, Serdar Paşa, Abidin Atasoy, Suha K. Arserim, M. Kirami Ölgen, M. Ziya Alkan, Caroline Durrant, Yusuf Özbel
Affiliation: Ege University Faculty of Medicine Department of Parasitology, Bornova, İzmir, Turkey

The diagnosis of canine leishmaniasis (CanL) in symptomatic and asymptomatic dogs is very important public health aspect in Turkey. A study was carried out on dogs in selected villages in the Çukurova Plain in Turkey, where cutaneous (CL) and visceral (VL) leishmaniasis is endemic. The study aimed to determine the prevalence of CanL and to evaluate the early diagnostic performance of the non-invasive conjunctival swab nested PCR (CS n-PCR) test in comparison with the Indirect Fluorescent Antibody Test (IFAT). The consecutive blood and CS samples from representative number of dogs were collected in a cohort of 6 villages located in the area. Clinical symptoms, demographic and physical features about each dog...
were noted and lymph node aspiration samples were obtained from selected dogs with lymphadenopathy. In four surveys during the period, a total of 338 sets (blood and CS) of samples from 206 dogs were obtained, of which 83 were sampled more than once. In the cross-sectional analysis, the CanL prevalence was found to be 27.18% (between 7.14% and 39.13%) by IFAT and 41.74% (between 29.03% and 46.66%) by CS n-PCR. The isolated strains were identified as Leishmania infantum MON1 (n=9) and MON98 (n=2) by MLEE analysis. Genetic studies targeting Hsp70 and ITS1 regions performed on 11 dog isolates also showed two clear separate groups. According to IFAT results, 24 of the 83 dogs sampled more than once showed seroconversion (n=19) or a four-fold increase in Ab titers (n=5), while 17 were positive in the initial screening. Forty-two dogs stayed negative during the whole period. The natural Leishmania exposure rate was detected as 31.14% in the study area. CS n-PCR detected Leishmania infection earlier than IFAT, only in 8 dogs. No statistical difference was found after the analysis of demographical and physical data. The results indicated that (i) circulation of the dog population is very common in settlements in Çukurova Plain, but the disease prevalence is high and stable, (ii) the performance of CS n-PCR for detecting Leishmania-dog contact is higher than IFAT, (iii) and parasites isolated from dogs have different zymodemes from previous CL human and sand fly isolates; indicating the existence of both antroponotic and zoonotic cycles of leishmaniasis in this particular area.

POSTERS

006

Local complications following venomous snakebites in southern Croatia
Author: Boris Lukšić
Co-authors: Robert Glavinić1, Svjetlana Karabuva1, Boris Dželalija2
Affiliation: 1Clinical Department of Infectious Diseases, University Hospital Centre Split, University of Split Medical School, 2Department of Infectious Diseases, General Hospital Zadar

This retrospective study represents local complications following venomous snake bites in patients in southern Croatia, who were treated in University Hospital Centre Split during the period of 39 years (from January 1, 1976 to December 31, 2014). A total of 737 patients were registered, of which 164 were children. Local complications were found in 20% of all patients with snake bite envenomation in the following order: haemorrhagic blisters (13.5%), followed by the skin and muscle necrosis (4%), thrombophlebitis (2%), compartment syndrome (CS) (2%) and infections (1%). Haemorrhagic blisters were noticed in different sizes, from size of a pea to the size of a walnut and even larger. In most cases, the incision of a haemorrhagic blister was performed. Early debridement was performed only when the skin and muscles necrosis were extensive. Thrombophlebitis of the blood vessels near the bite site occurred more often in the elderly, as well as in cases in which the bite was in the leg. The most serious local complication – CS, occurred mostly in children, and upper extremities were more affected than lower extremities. In the overall of the 15 (2%) CS cases, there were three cases in adults, and even 12 of them in children. Massive swelling at the bite site leads to increased tissue pressure within the closed bonefascial space of the extremity, which leads to the development of CS. This usually occurs in children in which envenomation is usually more severe due to the inoculation of higher quantity of venom per unit of body weight. Fasciotomies were performed in all cases of CS.
The health beliefs and behaviours of patients with ulcerative skin lesions before consultation in Yurimaguas, Peru

Author: Matthew Goldring
Co-authors: Gilles de Wildt, Eduardo Falconi
Affiliation: University of Birmingham, Birmingham, UK

Objectives: In a tropical setting such as Peru, skin ulcers are commonly caused by infectious diseases such as leishmaniasis. Early treatment results in improved patient outcomes. By exploring the health beliefs and behaviours of a patient it is possible to identify barriers to healthcare that prevent early treatment. These barriers could be addressed by public health schemes and also assessed quantitatively. To date there has been no research regarding this topic.

Methods: A qualitative study was carried out in Yurimaguas, Peru. Nine semi-structured interviews were conducted with the help of a translator in February 2015. Patients were included if they had consulted a doctor in the past because of a skin ulcer. The transcripts were analysed using thematic content analysis and themes were developed.

Results: Three main themes emerged from the data. 1) Many patients use their own treatments. These treatments can be harmful because of their inherent nature or because they delay consultation with a doctor. 2) Many of the participants relied on the advice of family and friends. This advice often encouraged the use of alternative remedies and thus delayed health-seeking behaviour. Participants stated that they themselves would give the same advice. 3) The main barriers to health care were identified in this population. These barriers included local strikes, lack of knowledge about skin ulcers, living in a rural location, the use of home remedies, informal consultations with family and friends and the diagnostic lag time for Leishmania infections.

Conclusion: There are significant barriers, beliefs and behaviours identified that can be addressed by public health schemes. These schemes would decrease the time it takes for patient to consult a doctor and thus improve patient outcomes.

Incidence and spectrum of health problems and health service utilisation among backpackers in Thailand

Author: Elizabeth McGeorge
Co-authors: Sabrina Grant, Gilles de Wildt
Affiliation: University of Birmingham, Birmingham, UK

Objectives: Previous research suggests backpackers are at an increased risk of health problems compared to other groups of travellers. Southeast Asia is the region most popular with backpackers, with Thailand the most visited country. This study aimed to determine the incidence and spectrum of health problems and quantify health service use among backpackers visiting Thailand.

Methods: A cross sectional survey was distributed to English speaking backpackers aged 18 years or over, recruited by convenience sampling in ferry terminals on the islands of Koh Pha-Ngan and Koh Tao, Thailand.

Results: Of the 1680 questionnaires analysed, 79.8% (n=1340) reported a health problem, most commonly: insect bites (60.4%, n=1015/1680), sunburn (47.7%, n=802/1680) and diarrhoea (43.6%, n=733/1680). Backpackers taking part in a ‘risky activity’ (land/water sports or vehicle rental) were 3 times more likely to report a health problem (OR 3.3, 95% CI 2.2–4.8, p<0.001) and 7 times more likely to report an accident (OR 7.3, 95% CI 2.3–23.2, p<0.001).
14.8%(n=249) participants reported involvement in an accident, the majority of which were vehicular (n=149), with over half (58.2%,n=145) reporting injuries as a result of their accident. 23.2%(n=387) participants visited health service/s during their trip, three quarters of which (76.7%,n=279) visited a pharmacy.

Conclusion: The study identified a higher incidence of health problems and health service utilisation than previously reported among travellers visiting Thailand. Further research is needed to establish the adequacy of pre-travel health advice among the backpacking population, however as the majority of reported problems were easily preventable, advice regarding personal precautions to reduce the risk of common health problems should be reinforced prior to travel. Backpackers commonly reported engaging in ‘risky activities’ whilst abroad. Given the increased risk of health problems following participation in such activities, pre-travel advice promoting awareness of the implications of risky behaviour, in addition to general road safety advice should be promoted to backpackers.

009
Travel related health risks of travelers from Bosnia and Herzegovina

Author: Zarema Obradović
Co-author: Amina Obradović
Affiliation: Institute for Public Health of Canton Sarajevo, Faculty for Health Studies University of Sarajevo

Tourism is a growing economy sector. According to the data from WHO 940 million of people were travelling in 2010. Purpose of travel was leisure, entertainment, business, sports, visiting family and friends, religious reasons, medical treatment etc. They used different ways of transport. Travel related health risks depend on: gender, age of traveler, destination, frequency of travel, purpose of travel and accommodation. The aim of work is to examine characteristics of travelers from Bosnia and Herzegovina that travel by air. Examinees were passengers from Bosnia and Herzegovina, older than 18 years, which traveled from Sarajevo International Airport. Sample was 200 passengers, 100 male and 100 female. Method of work is a cross-sectional study. The study was conducted using the questionnaire. Results: Passengers have mean age 37.4 years (youngest 18, oldest 78). The most passengers have a high degree (44%). There is a significant difference in destination countries in relation to gender and age of passengers (related to the reasons of travel). Older women travel more often to visit family and friends (USA and Sweden). Younger men travel because of work (European countries). Women travel more often than men but without significant difference, \( \chi^2=0.725; p=0.696 \). Most men travel once a year (40%) and women several times per year (37%). Younger passengers travel mostly several times per year (42%). Men are more likely to travel for business, sports and education. There is a difference in accommodation, 50% of women stay at family and friends and 36% of men stay at a hotel. Conclusion: Different categories of travelers from Bosnia and Herzegovina use the airplane for travel. Their characteristics are different: age, gender, purpose, frequency, reasons for travel and the accommodation at the final destination.
Drowning of Tourists during the Summer Season in the Istria County in 2013 and 2014

Author: Sep-Ševerdija Branka
Co-authors: Radošević S, Družetić-Božić K, Lazićić-Putnik Lj
Affiliation: Institute of Public Health of Istria County, Pula

Abstract: The AIM of our work was to analyse the frequency of drowning as the cause of death of our and foreign tourists in the Istria County during the summer tourist season in the county of Istria 2013 and 2014. METHODS: Retrospective analyses of data about drowning taken out from documentation about emergent interventions in Pula in the Institute of Emergency Medicine of Istria County, Pula according to gender, age, nationality and time of drowning. The results are presented in tabular and graphic way. Results: Overall there were 46 urgent interventions due to drowning (34 men, 8 women and 4 children). Men were more often drowned. There were 19 dead people (17 men and 2 women) or 41.3%. During the 2014 drowning mortality was 17% higher compared to 2013. The victims were of the average age of 61.8 years (2013) and 45 years (2014). The youngest person who drowned was 29 years old and the oldest was 83 years old. The most common drowning victims during 2014 were citizens of Slovenia, or 10% more than in 2013. Most of the survivors after drowning were citizens of Italy, or 23.8%. Decompression sickness was recorded in 15 divers (13 men and 2 women). All divers were foreigners, mainly Germans (83%). The most common time of emergency intervention was in time of 11-17 h. Conclusion: Drowning remains a common cause of death and a major public health problem of tourists. Unusual tourists’ behaviour such as swimming under alcohol or drugs, older age, neglecting of personal safety etc, increase the risk of drowning. We are constantly warning our tourists to the consequences of the risky behaviour and the risk of drowning.

Cases of imported Rickettsia africae infection among travelers to South Africa

Author: Petra Svoboda
Co-author: Davorka Lukas
Affiliation: University Hospital for Infectious Diseases “Dr. Fran Mihaljević” Mirogojska 8, Zagreb, Croatia

Rickettsia spp. are gram-negative, pleomorphic, obligate intracellular parasitic bacteria, causing human diseases of different severities. Rickettsioses are among the oldest known vector-borne diseases as well as among recently increasing emerging and re-emerging infections. With increase in availability of exotic tourist destinations more and more infections and endemic diseases become imported into other regions. One of such diseases is African tick bite fever (ATBF) occurring in sub-Saharan Africa and the eastern Caribbean. After malaria, ATBF is the second most frequent acute systemic febrile illness in travelers returning from southern Africa. The causative agent is Rickettsia africae, transmitted by hard ticks (Amblyomma hebraeum and A. variegatum) with humans being accidental hosts. The disease is usually mild, acute febrile and influenza-like with headache, myalgia, regional lymphadenopathy, maculopapular rash and characteristic (usually multiple) inoculation eschars. Patients are treated with effective antibiotic therapy (including doxycycline, erythromycin, ciprofloxacin, and minocycline) and respond well with full recovery. At the University Hospital for Infectious Diseases "Dr. Fran Mihaljević" in Zagreb, we detect
Rickettsia spp. by molecular diagnostic methods. Several samples were taken from three patients returning from a trip to South Africa. DNA was extracted from patients’ wound swabs, lymph node punctate and skin granuloma punctate samples. For all samples a conventional screening polymerase chain reaction (PCR) targeting the Rickettsia spp. partial outer membrane protein B gene (ompB) was performed. The positive results were obtained from the patients’ wound swabs and lymph node punctate samples. Sequencing confirmed that the infections were caused by Rickettsia africae. Identification of the disease causing etiological agent is a prerequisite for an effective therapy and recovery. It is necessary to include rickettsioses in the differential diagnosis of the patients with fever and rash returning from a trip to South Africa.

012

Visceral Leishmaniasis in HIV-infected patients at Infectious Disease Service, University Hospital Center of Tirana: epidemiological, clinical and therapeutical features of 5 cases.

Author: Arsilda Gjataj
Co-authors: Arjan Harxhi, Esmeralda Meta, Rovena Capo, Elda Qyrra, Ermita Muco, Monika Dede, Pellumb Pipero, Dhimiter Kraja
Affiliation: Infectious Disease Service, University Hospital Center of Tirana

Objectives: To investigate the epidemiological, clinical, biological and therapeutical features of visceral leishmaniasis (VL) in patients with HIV-infection. Methods: This is a retrospective descriptive study undertaken at University Hospital Center of Tirana, Infectious Disease Service. We analyzed the clinical and therapeutical features of all patients (5 cases) diagnosed with VL (both primary and relapses) and HIV infection during years 2009-2015. Results: There were four males (80%) and one female (20%) with mean age 44 years (range 32-50). In four cases (80%), the VL was diagnosed concomitantly with HIV infection while in one male case the VL diagnosis was made after 2 years of HIV diagnosis while being on ART. All cases were in stage C3 of CDC at the time of VL diagnosis (AIDS stage) with a mean CD4 count at diagnosis of VL 85 cells/ul (range 5-200). The main signs and symptoms presented at admission were fever (100%), sweeting (100%), weight loss (100%), pallor (100%), asthenia (100%), splenomegaly (100%), lymphadenopathy (80%), hepatomegaly (80%). Anemia was seen in 4 cases (80%) while leukopenia and thrombocytopenia was seen in all cases (100%) and hyper-gamaglobulinemia in all cases (100%) The diagnosis was made through demonstration of parasite in bone marrow aspirate. Treatment consisted of meglumine antimoniate (glucantime) in 4 cases (20-28 days course) and liposomal AmB (ambisome) in 1 case (7 days course) with a satisfactory clinical and microbiological response. However, two cases (40%) treated with ambisome and glucantime had clinical and parasitological relapses (four and three relapses respectively). Conclusion: Treatment of VL in HIV infected patients remains a challenge for clinicians especially in the context of limitations in the availability of treatment options according to the international guidelines.
## Emergent arboviruses in Istria County, 2012-2014

**Author:** Jasmina Kučinar  
**Co-authors:** Tatjana Vilibić-Čavlek, Ljubo Barbić, Vladimir Savić, Iva Pem-Novosel, Vladimir Stevanović, Mirta Balenović, Jasna Valić, Lorena Lazarić-Stefanović, Ira Gjenero-Margan  
**Affiliations:** 1Istria County Institute of Public Health, Pula; 2Croatian National Institute of Public Health, Zagreb; 3Faculty of Veterinary Medicine University of Zagreb; 4Croatian Veterinary Institute, Zagreb; 5University of Applied Health Studies, Zagreb

Objectives: Several arboviruses have emerged in Croatia in the last few years such as dengue virus (DENV), West Nile virus (WNV) and Usutu virus (USUV). In addition, antibodies to DENV and chikungunya virus (CHIKV) were sporadically reported in travelers to endemic areas. We analyzed seroprevalence of the emergent arboviruses in humans and animals in Istria County during a three-year period (2012-2014).

Methods: Human serum samples were tested for DENV, WNV, USUV and CHIKV IgG antibodies. Horse and chicken serum samples were tested for WNV IgG antibodies. All tested chickens were less than one year old. Serologic tests were performed using commercial enzyme-linked immunosorbent assays. Except in chickens, all IgG reactive samples were further tested for the presence of IgM antibodies for confirmation of acute/recent infection.

Results: In 2012, 2/136 (1.4%) human samples from inhabitants of Pula and Labin tested positive for CHIKV IgG antibodies while IgM antibodies were not detected. Antibodies to WNV, DENV and USUV were not found in any tested sample. Among horses, WNV IgG seropositivity was 1.8% (5/276) in 2012, 1.7% (5/289) in 2013 and 2.3% (2/87) in 2014. Acute infections were not detected during the tested period except one documented seroconversion during 2014. Chicken seropositivity to WNV was 33.3% (3/9) in 2013 and 90% (18/20) in 2014.

Conclusions: Our results indicate circulation of WNV among horses and chickens in Istria County during three consecutive transmission seasons. Although USUV infections were not detected in Istria County, emergence of human USUV neuroinvasive disease in Croatia highlighted the importance of flaviviruses surveillance. In addition, current data from Europe and Croatia indicate that indigenous transmission of DENV and CHIKV is possible. Permanent vector control measures should be regularly performed, particularly in regions with established Ae. albopictus population.

## Human echinococcosis in Croatia and at the University Hospital for Infectious Diseases “Dr. Fran Mihaljević” in the period from 2003-2014

**Author:** Balen Topić Mirjana  
**Co-authors:** Vicković Ninoslava, Desnica Boško  
**Affiliation:** University Hospital for Infectious Diseases “Dr. Fran Mihaljević”, Department for Gastrointestinal Infections University of Zagreb, School of Medicine

Objectives. Echinococcosis is a human tissue parasitosis spread worldwide, which has a chronic indolent clinical course in most cases. The aim of this study was to assess the epidemiological and clinical characteristics of human echinococcosis in hospitaly treated patients.
Patients and methods. Retrospective cohort study; population: patients with a diagnosis of echinococcosis, treated at the University Hospital for Infectious diseases “Dr. Fran Mihaljević” in the period 2003-2014; source: data from patients’ charts. We also analyzed the official epidemiological data issued by the Croatian Institute for Public Health.

Results. In the period from 2003-2014, there were 222 cases of human echinococcosis reported to the Croatian Institute for Public Health (range: 10-36, mean: 18.5). In the same period there were 299 hospitalizations due to echinococcosis at the University Hospital for Infectious Diseases “Dr. Fran Mihaljević”, which referred to 189 patients. The majority of the observed patients were female (126/189; 66.7%) and adult (171/189; 90.5%). The vast majority of patients had a hydatid cyst localized in the liver (152/189; 80.4%). After an albendazole prophylaxis 100/189; 52.9% of the patients were treated surgically, in 22/189; 11.6% a PAIR method, and in 19/189; 10.0% a diagnostic puncture was performed, whereas 37/189; 19.6% received only medicamentous therapy. In 9/189; 4.8% of the patients a postoperative albendazole prophylaxis was applied and one pediatric patient with multiple liver cysts was treated with repeated thermal ablations. There were 50 adverse reactions recorded in 46/189; 24.3% of the patients: 29 increases of the liver enzymes, 9 primary inflammations of the cyst, 3 secondary inflammations after puncture, 4 ruptures/leaks of the cyst, one obstructive hepatitis, one toxoallergic rush, one anaphylactic reaction after performed PAIR method, one bacterial meningitis after neurosurgical treatment of the cerebral cyst, and one excessive bleeding after liver surgery which has demanded extensive reconstruction; no lethal outcome was recorded. Due to an echinococcosis diagnosis, the majority of patients (143/189; 75.6%) were hospitalized only once, but the rest of them required multiple hospitalizations for nonsurgical treatment, up to 10 times in the observed 12-year period.

Conclusion: According to the data collected, under-diagnosing and under-reporting of human echinococcosis in Croatia could be suspected. Among the observed patients, the epidemiological and clinical characteristics of the disease were within the expected framework. Nearly one quarter of the patients with echinococcosis required multiple hospitalizations for nonsurgical treatments.

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Evaluation of Cystic Echinococcosis Suspected Cases in Edirne, Turkey between 2009 and 2014
Author: Gülcan Kuyucuklu
Co-authors: Canan Eryıldız, Saliha Akgün Baltacı, Nermin Sakru
Affiliation: Department of Medical Microbiology, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: Cystic echinococcosis (CE) caused by the metacestode form of Echinococcus granulosus is an important public health problem in the world. This study aimed to evaluate patients who applied to laboratory with suspected CE between 2009 and 2014 retrospectively. Methods: In this study, 2126 serum samples which were sent to the Microbiology Division of Central Laboratory of Trakya University Health Center for Medical Research and Practice (Hospital) in Edirne, Turkey between 01.01.2009 and 31.12.2014 were investigated anti-E. granulosus antibodies by using commercial Indirect Hemaglutination Test (IHA) (Fumuoze, France). Results: Three hundred seventeen (14.9%) of screened 2126 serum samples were found as seropositive. Two hundred sixteen of 317 seropositive samples were determined as Cystic echinococcosis. 118 (56.6%) of these patients were female and 98 (45.4%) of them were male. Examined the distribution the results of CE
patients by years, a maximum of 25% positivity was observed in 2010. According to evaluate the distribution of CE patients by localization was observed in liver is the most common localization. Conclusion: CE continues to be a major public health problem in Edirne, Turkey. We recommend that control programmes should be used to reduce the prevalence of the disease.

016

Campylobacter spp. and Other Bacteria in Diarrheic Patients in Edirne, Turkey

Author: Saliha Baltacı Akgün
Co-authors: Selahattin Ünlü, Mediha Cerrah, Gülcan Kuyucuklu, Nermin Şakru, Hamdi Murat Tuğrul
Affiliation: Department of Medical Microbiology, Faculty of Medicine, Trakya University, Edirne, Turkey

Objective: The incidence of Campylobacter spp. infections in children under the age of five are increasing in developed and developing countries. It is one of the most common bacterial pathogens, which isolated during gastroenteritis. In this study; we aimed to evaluate Campylobacter spp. and other enteric pathogens from the culture of stool samples, which were taken from the patients who applied to hospital retrospectively. And also aimed to evaluate Campylobacter spp. infection; according to the age, gender and seasonal characteristics. Methods: Between 23.09.2013-15.06.2015, 3472 stool samples have been sent to the Microbiology Division of Central Laboratory of Trakya University Health Center for Medical Research and Practice (Hospital) in Edirne, Turkey. All samples have been cultivated and cultured in CCDA (Charcoal Cefoperazone Deoxycholate Agar), EMB agar (Eosin-Methylene Blue) and Salmonella-Shigella agar. The colonies have been defined by their morphological and biochemical characteristics. Results: Enteropathogenic bacteria were produced in 206 stool culture. While 117 of these bacteria have been seen as Campylobacter spp., the remaining 85 have been seen as other pathogens (81 Salmonella spp., 4 Shigella spp.). In all samples (3472); the incidence of Campylobacter spp. were calculated to 3.4%, the incidence of other pathogens were 2.4%. Sixty three (59.8%) cases of campylobacteriosis have been detected in children under the age of five and 23 (19.7%) patients were 4-15 years old. When the seasonal distribution was evaluated for the years of 2013-2014, it has been seen that the infection reaches its peak value in the month of December. Conclusion: In this study Campylobacter spp. have been isolated from the stool as the most common pathogen. We recommend Campylobacter spp. culture in laboratories to help decrease the related morbidity and mortality rates and thus decrease the health costs.

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Seropositivity of Delta Hepatitis in Patients with Positive HBs Antigen

Author: Mediha Cerrah
Co-authors: Selahattın Ünlü, Canan Eryıldız, Nermin Şakru, Hüseyin Ahmet Tezel
Affiliation: Department of Medical Microbiology, Faculty of Medicine, Trakya University, Edirne, Turkey

Objectives: Hepatitis delta virus is defective RNA virus that requires hepatitis B virus to cause infection. HBV together with the presence of HDV has more severe complications compared
with HBV infection alone. This study was aimed to investigate the HDV frequency in patients with hepatitis B infection. Materials and methods: This study included a total of 798 HBsAg positive serum samples which have sent to Microbiology Division of Central Laboratory of Trakya University Health Center for Medical Research and Practice (Hospital) in Edirne, Turkey between June 2011-2015. Delta antibodies in HBsAg positive 798 serum samples were studied by methods micro-ELISA (Dia.Pro. DiagnosticBioprobes). HBsAg, HBeAg and Anti HBe were studied by chemiluminescence assay (Cobas E601/RocheDiagnostics). Results: Twenty of 798 HbsAg positive serum samples were identified as positive in terms of delta antibodies. HDV in HBsAg positive patients was found to be 2.5% and all were form of superinfection as expected. Conclusion: HDV is a variable prevalence rate in Turkey; it decreases from east to west. Although HDV seroprevalence in this area has found a lower rate than the other regions of Turkey but also especially in patients of chronic HBV should be screened for HDV.

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Epidemiological Characteristics of Influenza in Istria County in Period 2000.- 2015.
Author: Branka Sep-Ševerdija
Co-authors: Željko Pušelja, Ljiljana Lazičić-Putnik, Kemal Alambašić
Affiliation: Institute of Public Health of Istria County, Pula

Aim: is to analyse the epidemiological characteristics of influenza in the Istria County in period 2000.-2015.
Methods: Descriptive epidemiological method was used to analyse data applications of influenza in Istria County in mentioned period
Results: Epidemiological characteristics of epidemics in Istria County are biennial "cyclical" apperaring with the increased number of reported cases: 2001/6092; 2003/5795; 2005/8725. Typicaly epidemics were low activity to activity of medium intensity with rates of morbidity from 1,5% to 3,5 % of the total population. Epidemiologic "curiosity" is year 2006 with only two reported cases of influenza. Tracking incidence of patients according to age groups, the highest number of reported cases was recorded in the age group of 7-19 years and 20-60 years and the lowest number in the most vaccinated population over 65 years.(Table1)
Outbreaks of influenza among Istria towns are shown in Table 2. The total number of patients with influenza in the period 2000.-2015. is 53 867 (graph)
Conclusion: Influenza is a cosmopolitan, transmissive, epidemic-pandemic disease. Outbreaks of influenza A occur in spontaneous "mutation" of virus. In mentioned period there were noted epidemic periods of very low incidence of patients with exception of epidemic with more patients as result of antigenic "diversion" of influenza virus A. Vaccination is the most effective measure of individual and collective protection against influenza.
Epidemiologic and clinical review of HIV adult patients starting antiretroviral therapy of the first time in Albania during 2014.

Author: Arjan Harxhi
Co-authors: Roland Bani, Esmeralda Meta, Erionia Shehy, Arsilda Gjataj, Rovena Capo, Dhimiter Kraja
Affiliation: Infectious Disease Service, University Hospital Center of Tirana

Abstract: Objectives: To describe the epidemiological, clinical and laboratory data of a cohort of HIV adult patients starting antiretroviral therapy (ART) for the first time during 2014 in Albania. Methods: This is a descriptive retrospective study undertaken at HIV/AIDS Ambulatory Clinic, University Hospital Center of Tirana, Albania. There were 59 HIV adult patients enrolled at our clinic that started first line ART during 2014 and included in the study. Medical charts were reviewed and baseline characteristics of each case were analyzed and described. Results: There were 44 male (75%) with a mean age 42 years old. More than 70% were married or lived with a partner while 37% had a HIV positive partner and 7% also had HIV positive children. Transmission risk: 68% heterosexual, 15% homo-bisexual. Only 10% were tested voluntarily. 39 cases (66%) were diagnosed in 2014. 84% of them were symptomatic at the time of diagnosis, with a median CD4 174 cells/ul (mean 329 cells) and 62% following at CDC stage 3 of disease (CD4<200). At baseline, median CD4 was 128 cells/ul (mean 262). HBV co-infection was found in 5.1%, HCV in 3.4%, TB in 5.1% and syphilis in 32% of cases. First line ART was efavirenz based regimen in 95% of the cases where the backbone nuke was ZDV+3TC in 70% of the cases. Adherence to therapy was assessed as good in 80% of cases. Adverse effects were seen in 10% of the cases. 4 patients (7%) died within the first year of follow up. Conclusions: Advance HIV infections at diagnosis and baseline of our cohort patients shows that more interventions are needed to improve each step of treatment cascade in Albania. In particular, efforts to promote earlier identification of HIV infected persons and earlier initiation of ART remain a priority.

Review of recently diagnosed syphilis cases in Albania

Author: Rovena Capo
Co-authors: Arjan Harxhi, Esmeralda Meta, Arsilda Gjataj, Ermira Muco, Erjona Shehu, Pellumb Pipero, Dhimiter Kraja
Affiliation: Infectious Disease Service, University Hospital Center of Tirana

Objectives: To document the manifestations of syphilis among HIV positive and HIV negative patients over a 12 months period. Methods: This is a descriptive hospital based study of all adults patients with syphilis with and without concurrent HIV infection followed at Infectious Disease Service, University Hospital Center of Tirana, between Mars 2014 and June 2015. Diagnosis was made based on clinical presentation and positive serology of non treponemal (RPR) and treponemal test (TPHA).

Results: There were 13 cases with syphilis diagnosed, 9 cases with HIV co-infection (70%) and 4 cases (30%) without concomitant HIV infection. 10 were male (77%) and mean age 39 years old (20-55). 5 cases (38%) were MSM. Stages of disease: 10 cases were at latent stage (77%) and 3 cases with secondary syphilis. All 3 cases with secondary syphilis presented with macular and popular/papulosquamous lesions in the palms and soles and lymphadenopathy (2 cases). 8 out of 9 cases with HIV infection were diagnosed concomitantly for both
infections while in one case (which was RPR negative at HIV diagnosis) the secondary syphilis was diagnosed after one year. 6 out of 9 cases (78%) had the C 3 AIDS stage and mean CD4 count was 171 cells/ul, with 7 cases below level of 200 cells/ul. All cases were treated with benzathine penicillin with three weekly doses.

Conclusions: No differences were seen among HIV positive and HIV negative syphilis cases. Screening for syphilis at diagnosis and routinely of HIV patients is important due to high risk of acquiring and probable severe course of infection among these patients.

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The prevalence of syphilis in HIV-infected persons entering care in Croatia in the period 2009-2014.

Author: Romih Vanja¹,
Co-authors: Đaković Rode O¹, Vargović M¹, Zekan Š¹², Lukas D¹, Maretić T¹, Begovac J¹².
Affiliation: ¹University Hospital for Infectious Diseases, ²University of Zagreb School of Medicine, Zagreb, Croatia.

Background: In Croatia, all HIV infected persons are treated at the University Hospital for Infectious Diseases (UHID) in Zagreb. HIV and Treponema pallidum coinfection has important public health implications; syphilis is a cofactor for acquiring or transmitting HIV infection and having past or current syphilis, is associated with an increased risk of HIV infection. The prevalence of syphilis in HIV infected patients in Croatia has so far not been reported. The aim of the study was to analyze the prevalence of past or current syphilis in persons entering HIV care in Croatia in the period 2009-2014.

Methods: The clinical data were extracted from the HIV/AIDS electronic database at UHID. All Treponema pallidum haemagglutination (TPHA) tests and rapid plasma reagin (RPR) tests in patients entering HIV care were reviewed. We report frequencies with confidence intervals for proportions and medians for continuous variables. The analysis was done in adults (> 18 years) and persons who have not been in HIV care anywhere else before entering care at UHID.

Results: Of 483 persons included into care in the period 2009-2014, 31 were already in care outside Croatia and data was not available for 5 persons. So the final study population for analysis included 447 persons. Of 447 persons, 408 (91%) were male, 367 (82%) males reported sex with another male partner (MSM), 160 (36%) lived in a rural area and 177 (40%) had less than 200 CD4+ cells per mm3. The median age was 39 years, 76 (17%) were older than 50 years; the median CD4 cell count was 278 cells per mm3. The prevalence of TPHA seropositivity was 19.5% (87 of 447; 95% CI 16.0-23.4%). The prevalence of RPR seropositivity was 7.8% (35 of 447; 95% CI 5.7-10.7%). All persons with a reactive RPR had also a positive TPHA test. Of 35 persons with a positive RPR, syphilis was diagnosed at inclusion into HIV care in 23 (65.7%) and in 12 persons HIV testing was done after syphilis was diagnosed. Overall, newly diagnosed syphilis was present in 23 of 447 persons (5.5% [95% CI, 3.4-7.6%]). All persons with current syphilis (n=35) were males and 33 (94%) were MSM. Conclusion: The prevalence of syphilis in HIV infected patients entering care in Croatia was high. All newly diagnosed HIV infected patients should be tested for syphilis and HIV testing is also important for all patients with a new diagnosis of syphilis.
Malaria in patients treated at University hospital for infectious diseases Zagreb, Croatia in the period from 2000. to 2015.

Author: Anja Dragobratović

Co-authors: Marina Balcić, Miljena Copois, Davorka Lukas, Josip Begovac

Affiliation: University Hospital for Infectious Diseases Zagreb, Croatia

Introduction: Malaria has been eradicated in Croatia. Imported malaria cases are mainly occurring among tourists, occupational travellers, less frequent among immigrants from endemic countries. The aim of the study was to analyse demographic aspect, clinical presentation, treatment and outcome of patients with malaria treated at our hospital in the period from 2000 to 2015.

Methods: We conducted a retrospective survey on patients with malaria, treated at the University Hospital for Infectious Diseases, Zagreb, Croatia in the period from 2000 to 2015. Malaria was confirmed by the presence of parasites in peripheral blood by microscopy. The patients were recruited from patient's clinical charts were analysed.

Results: In the period from 2000 to 2015, 58 patients were treated for malaria (51 male and 7 female). The median age was 41 year, interquartile range (IQR) was 34-53 year. 45 (77.6%) of the patients were occupational travellers, 2 (3.4%) tourists, 6 (10%) immigrants (including children), 1 (2%) was a VFR (visiting friends and relatives) traveller and 4 (7%) were unknown. 46 (79%) patients acquired malaria in sub-Saharan Africa and 12 (21%) in SE Asia. Regarding the length of stay, 10 (17%) patients recorded travel less than one month, 20 (34%) 1-6 months, 8 (14%) 6-12 months, 19 (33%) more than 12 months and for 1 was unknown. 37 (64%) patients were not taking chemoprophylaxis. The median time from onset of symptoms to the diagnosis (TSD) was 4 days (IQR 3-7 days). P. falciparum infection was detected in 36 (62%), P. vivax in 16 (28%) and mixed infection in 6 (10%) patients. All patients had fever, headache had 24 (41%), splenomegaly 25 (43%), thrombocytopenia 47 (81%). The median parasitaemia on admittance was 7,5 ‰ (IQR 2-16‰). Hyperparasitaemia (>20‰) on admittance was detected in 10 (17%) patients with P. falciparum infection. Six of these patients developed severe complicated malaria and were treated in intensive care unit with intravenous artesunate (completed with a full course of artemether-lumefantrine) and supportive treatment (artificial ventilation, hemodyalysis). Patients with TSD <3 days had lower parasitaemia (median 3,5 ‰, IQR 1-12‰) than those with TSD >3days (median 9‰, IQR 3-25‰). Among 30 patients with uncomplicated falciparum malaria, 9 patients were treated with quinine-doxyxycycline (QD), 19 patients with artemether-lumefantrine (AL), 2 patients with mefloquine. All patients (100%) treated with AL and 18 % treated with QD had a parasite clearance time (PCT) of three days. All patients survived.

Conclusion: Majority of our patients were long-term occupational travelers who did not take chemoprophylaxis. The patients with severe falciparum malaria were treated with artesunate iv successfully and without side effects. In order to reduce the time from onset of symptoms to malaria diagnosis, education for physician and travellers on the topic is needed. The current recommendations on malaria treatment (artemisinin-based combination therapy for uncomplicated falciparum malaria and artesunate iv for severe malaria) should be implemented in our clinical practice.
**Cutaneous leishmaniasis: Case report**  
*Author:* Selma Korkmaz  
*Co-authors:* Medilha Cerrah, Nermin Şakru  
*Affiliation:* Department of Dermatology, Faculty of Medicine, Trakya University, Edirne, Turkey

Objectives: Leishmaniasis, a vector-born disease caused by obligative intracellular protozoa of the genus Leishmania. In this report, 44-years-old male patient with a diagnosis of cutaneous leishmaniasis was presented.

Case: 44-year-old man applied to Trakya University Health Center for Medical Research and Practice (Hospital) in Edirne, Turkey due to a wound of the left foot. He said the development of these complaints was a result of fly biting of his foot, about 1.5 months ago. It was learn from the patient's medical history that the incident took place in Turkmenistan, where he went to work. Dermatological examination showed two ulcers in diameter 4x5 cm and 1.5x2 cm, with sharp borders and serous weeping. In the dermal scraping material taken from the lesion; amastigotes were observed and according to these clinic findings patients was diagnosed with cutaneous leishmaniasis. Upon this abdominal USG and peripheral blood smear was performed and was not considered systemic involvement. Systemic glucantime therapy treatment as 2x1, 10 mg / kg IM was started and was given under clinical supervision 20 days. Although, in the follow-up was seen downsizing of lesions, they were not completely healed, and itraconazole 200 mg oral in dose of 2 x 1 was given 3 weeks, and the complaints resolved completely.

Conclusion: As a result, people who have ulcerated lesions and travel to endemic regions is high risk group for cutaneous leishmaniasis.

**HBV-HIV co-infection, a case report**  
*Author:* Ozgur Gunal  
*Co-authors:* Zeynep Banu Ramazanoğlu, Esmeray Mutlu Yılmaz, Sırrı Kılıç  
*Affiliation:* Samsun Educational and Training Hospital, Department of Infectious Diseases and Clinical Microbiology, Samsun, Turkey.

Background: The two third of the human immunodeficiency virus (HIV) infected individuals encountered with hepatitis B virus (HBV) and 10%-15% of these have chronic HBV infection (1). In a study performed in our country showed 40% of HIV infected individuals encountered with HBV and 4% of these people had chronic HBV.

Case: A 27 year-old male patient with the complaint of weakness, nausea and jaundice in the eyes, approved to the clinic to research the etiology of hepatitis. He was working in textile business and he was a HBV carrier for five years. He had no co-morbid disease and no medication. 5 months ago, he had unprotected risky sexual intercourse. His laboratory tests were like HBsAg:(+), Anti-HBs:(-), HBeAg: (-), Anti-HBe:(+), Anti-HBc IgM and IgG: (+), Anti-HAV IgG:(+), Anti-Delta:(-), AST:867 mg/dL, ALT:1046 mg/dL, GGT:88 mg/dL, ALP:155 mg/dL, total bilirubin:10.5 mg/dL, direct bilirubin:8.12 mg/dL, WBC:4080/mm³, HB:12.4 g/dL, PLT:32x10⁴/µL. He was diagnosed acute hepatitis B flare up and HBOV-DNA PCR test was performed. Meanwhile, Anti-HIV ELISA test was pozitive for the second time and Western Blot test was performed to confirm ELISA tests. The confirmation test was also pozitive. HIV RNA and CD4 cell count were performed. Approximately two weeks later, his biochemical
values were like, AST: 87 mg/dL, ALT: 184 mg/dL, T.bil: 2.9 mg/dL, D.bil: 2.5 mg/dL. HBV DNA level was 1x10⁷ copy/ml, HIV RNA level was: 4400 copy/ml, CD4 cell count was: 308/ mm³. The patient was diagnosed HBV+HIV co-infection and Truvada (Tenofovir+ Emtricitabine) + Kaletra (Lopinavir+Ritonavir) treatment were administered and he was followed up for rutin controls.

Conclusion: HIV accelerates the progression of hepatitis B infection and increases the risk of cirrhosis. In the patients co-infected HIV/HBV with high HBV replication, the risk of cirrhosis 4-fold increases (3). It should be kept in mind that the possibility of HIV+HBV co-infection can be frequent and if needed from all the risky patients the tests should be performed.

Introduction: Enterobius vermicularis is normally found in the human gastrointestinal tract. Female parasites get out of their host’s anus at night to leave their eggs perianally. Some worms find their way into adjacent orifices such as female genitourinary tract. Here we presented a pinworm infestation of the uterus with a complaining of postmenopausal bleeding. The patient had a travel to some tropical regions of the World and been in there for two weeks, 3 months before.

Case Report: A 58 year old woman presented to our clinic with the complaints of vaginal bleeding and perineal irritation. She undergone the menopause 8 years ago. The perineal area was unremarkable. We performed endometrial biopsy and aspirated material was sent for analysis. The endometrial stroma showed non-specific focal inflammation. Some dilated endometrial glands contained degenerated calcified pinworms.

Conclusion: The life cycle of Enterobius vermicularis occurs within the human gastrointestinal tract. Travelers may easily sicken with unwashed fresh foods, generally while abroad. Infection occurs faeco-orally and ingested ova hatch in the duodenum, developing into adult worms that colonise the large bowel, where fertilisation takes place. Pregnant females get out of the anus at night and leave their eggs perianally. They can enter into adjacent orifices so that they have been found in the urinary tract and in the female genital tract. The most usual gynaecological presentation is either the accidental finding of ova on cervical smears or as vulvovaginitis. Other presentations include salpingo-oophoritis, pelvic pain, vaginal bleeding. Degenerated pinworms were seen in the dilated endometrial glands in this case. A Pinworm infestation of the uterus is not a common reason of complaining of bleeding but it would be helpful to suggest as a differential diagnosis in postmenopausal bleeding complains of travelers.
HIV and Syphilis Coinfection: A Case of Ischaemic Stroke due to Meningovascular Syphilis in HIV Infected Patient

Author: Monika Turk¹
Co-authors: Helena Biasizzo², Saša Simčič³, Janez Tomažič⁴
Affiliation: ¹Department of Vascular Neurology and Intensive Neurological Therapy, University Medical Centre, Ljubljana; ²General Hospital Novo mesto; ³Institute of Microbiology and Immunology, Ljubljana; ⁴Clinic for Infectious Diseases and Febrile Illness, University Medical Centre, Ljubljana, Slovenia

Background: Worldwide, incidence of syphilis is increasing, especially among HIV infected population. Moreover, HIV infected patients with syphilis are more prone to invasion of T. pallidum into central nervous system and neurosyphilis usually manifests earlier compared to HIV non-infected population. We report a case of ischaemic stroke due to meningovascular syphilis in HIV infected patient.

Case report: A 40-year-old male without known medical history was admitted to neurology department due to acute left side hemi-paresthesia, hemiataxia, horizontal-rotatory right-beating nystagmus, right side facial and abducens palsies and diplopia. Since his head CT, CT perfusion, intracranial and aortocervical CT-angiography scans were without pathological findings and his symptoms started recovering, he was treated conservatively. His symptoms worsened the next day and MR scan revealed right posterior paramedian pontine infarction (9x4 mm). As part of routine screening for stroke in young patients, he was tested for HIV and syphilis. Serologic tests for syphilis were positive in serum as were screening and confirmatory tests for HIV infection. CD4+ cell count was 282/mm³ and HIV RNA was 9480 copies/ml. Cerebrospinal fluid (CSF) analysis showed elevated protein level (0,70g/l) and lymphocytic pleocytosis (lymphocytes 30/mm³). CSF-RPR and CSF-TPHA were not reactive. However, because of strong clinical suspicion of meningovascular syphilis, additional serological tests for syphilis in CSF, i.e. CSF-IgG-FTA-ABS and CSF-LIA (Line Immuno Assay), were performed: both were positive. After the confirmation of suspected meningovascular syphilis, treatment with intravenous benzylpenicillin was given for 21 days. Neurological symptoms subsided gradually and patient was discharged with minimal neurological sequelae.

Conclusion: In HIV infected population, we are now facing a new epidemic of (neuro)syphilis, a disease, which has already been considered 'archaic'. Clinicians should be aware of that to establish a correct diagnosis and to provide adequate treatment, which will minimize neurological impairments among these patients.

Hantavirus and Leprosy co-infection A case report

Author: Özgür Günal
Co-authors: Saliha Aydın, Banu Ramazanoğlu, Aynur Atilla, Sırrı Kılıç
Affiliation: Samsun Training & Research Hospital, Department of Infectious Diseases and Clinical Microbiology, Samsun, Turkey

Hantavirus and Leprosy co-infection A case report Introdution: Both hantavirus infection and leptospirosis are zoonoses which have the same epidemiological features. Case: A 50 year-old female patient with the complaint of fever, diarrhea, headache and weakness admitted to emergency room. In her laboratuary test; Hemoglobin(Hb): 10.3,
Hematocrit: 30.2 %, Platelets (Plt): 40.103/µL, White Blood Cell (WBC): 3.400/µL (neutrophil: 2560 ), Glucose: 99 mg/dL, Blood Urea Nitrogen (BUN): 73mg/dL, Creatine (Cr): 5.83mg/dL, Aminoacetyl transferase (AST): 32 U/L, Alanine amino transferase: 31 U/L, Total bilirubin (T.BIL): 2.7 mg/dL, Direct bilirubin (D.BIL): 2.49 mg/dL, Indirect bilirubin (I.BIL): 0.2 mg/dL Gama glutamyl transferase (GGT): 1133 U/L, Creatine kinase (CK): 26 IU/L, C reactive protein (CRP): 28.4 mg/dL, erythrocyte sedimentation rate (ESR): 67 mm/h. She was transferred to Infectious Disease department. From her history, it was learned that she went to Trabzon (a city located in the eastern north of Turkey) to work in tea fields and where she lived it rained much and flash flood occurred very often. In physical examination; fever: was 38 °C and the other findings were all normal. Crimean Congo hemorrhagic fever (CCHF), brucella rose bengal and brucella tube agglutination, leptospira ELISA test, Q fever IFA test, Hantavirus IFAT IgM and Ig G were applied. As leptospirosis and Q fever were initial diagnosis, ceftriaxone and tetracycline were administered to the patient. The patient underwent hemodialysis 3 times, because of the acute renal failure. 8 units of random platelet suspension and 2 units apheresis platelet suspension applied to the patient due to thrombocytopenia (15.103/µL). On the forth day of her hospitalization fever turned back to normal. Subsequently creatine levels decreased and diuresis increased. Leptospira ELISA IgM and IgG and Hantavirus IFAT Ig M and Ig G were both positive. Ceftriaxone and tetracycline were discontinued on the tenth day of the treatment. The patient was discharged. Conclusion: in Turkey in particular, Blacksea region, coexisting of fever, thrombocytopenia and acute renal failure should remind Hantavirus and Leptospira infections. It should also be considered that due to similar reservoir and similar epidemiological features, these pathogens can cause co-infections.

Visceral leishmaniasis or kala-azar is a zoonosis caused by an intracellular protozoan parasite (genus Leishmania). It affects mammals, especially dogs, jackals, small rodents and humans. There are approximately 20 Leishmania species known to infect humans. It is transmitted by the bite of a sand fly. Visceral leishmaniasis is caused mainly by L. donovani and L. infantum. Disease is frequently found in South-Western Asia, Brazil, and Mediterranean countries. In the Mediterranean basin, visceral leishmaniasis is the main form of the disease. It occurs in rural areas, in villages in mountainous regions and periurban areas, where Leishmania parasites live on dogs and other animals. In Croatia, the foci of the disease are south and middle Dalmatian coastal area, including islands, and Dubrovnik area. This also corresponds with the habitat of jackal, which is considered to be the most important reservoir in wilderness, beside dogs. Clinically, it is characterized by the pentad of fever, weight loss, hepatosplenomegaly, pancytopenia, and hypergammaglobulinemia. If untreated, disease is often lethal. We report a case of siblings presenting with hepatosplenomegaly, respiratory symptoms (cough), anemia, lymphocytosis and monocytosis, who have been staying in the endemic area, and whose symptoms started approximately at the same time. However, the final diagnoses were very different – one child had confirmed visceral leishmaniasis but the other was diagnosed with acute juvenile myelomonocytic leukemia. We showed the initial work-up, differential diagnosis and...
treatment of the disease. Leishmaniasis may mimic various more common diseases in children, such as leukemia, viral infections, or autoimmune diseases, because polyclonal B cell activation and other mechanisms may lead to multiple positive serologic tests. This paper aims to emphasize the importance of differential diagnosis, especially when one disease mimics the other, and to encourage considering leishmaniasis when assessing patient with history of traveling to endemic areas.

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Center for voluntary counselling and testing at Zagreb University Hospital for Infectious Diseases: ten-year experience
Author: Belak Kovačević Sanja
Co-authors: Benković Ivana, Duvančić Kristina, Berzati Marija.
Affiliation: University Hospital for Infectious Diseases “Dr. Fran Mihaljević”, Zagreb, Croatia

Objectives: In June 2005 Center for Voluntary HIV counselling and testing (VCT) was established at University Hospital for Infectious Diseases “Dr. Fran Mihaljević” (UHID) in Zagreb as a part of Reference Center for Diagnostics and Treatment of HIV-infection. VCT is providing free, anonymous and confidential HIV testing as well as pre- and post-test counselling about transmission, prevention and meaning of test results. Therefore it serves as an essential connection between HIV prevention and medical and psychosocial aspects of HIV infection. The objective of this overview is to describe demographic profiles, reasons for seeking HIV counselling and testing and determine HIV prevalence among those clients who visited VCT at UHID in Zagreb, Croatia from 2005 to 2015. Methods: Client’s anonymous data, abstracted retrospectively, were collected by the hospital counsellors during voluntary HIV counselling on a standard form during ten year activity from June 2005 until May 2015. Analysis was done according to demographic and behavioural characteristics that increase the risk of HIV infection and other sexually transmitted infections as well as HIV, hepatitis B and C testing results. Results: HIV voluntary counselling and testing services during 10 year period were provided to 10 378 people, 9898 people got tested for HIV and 161 were diagnosed HIV positive (1.63%). Results will be presented according to demographic and behavioural characteristics. Conclusion: VCT is a central component of comprehensive HIV prevention strategies targeting individual risk reduction. Placing such services in a Reference Center for Diagnostics and Treatment of HIV-infection, which is a part of UHID, has shown to be a good and patient-oriented practice in making essential linkage to HIV medical care and psychosocial support for newly diagnosed.

030

Venomous snakes are the most important venomous animals in Croatia: Nose-horned Viper (Vipera ammodytes), Common Adder or European Adder (Vipera berus) and Meadow Adder (V. ursinii).
Author: Tomislav Maretić
Co-author: Ivan Cizelj
Affiliation: 1University Hospital for Infectious Diseases dr. Fran Mihaljević, 2Zagreb Zoo

The most venomous spider in Croatia is Black Widow (Latrodectus tredecimguttatus) which can be found in the seaside region – Istria and Dalmatia and the southern region of the central part of Croatia. Black widow is not aggressive, and the bite of the spider occurs if it is
trapped in a person’s clothes or shoes. Yellow Sac Spider (Cheiracanthium punctorium) has its habitat mainly in the southern, but also in the northern parts of Croatia. The scorpions in Croatia are not dangerous. Contacts with caterpillars of some butterflies (specially species Thaumetopoea pityocampa), the ants (Formicidae) and Mediterranean banded centipede (Scolopendra cingulata) can cause some allergic and toxic symptoms. The frequency of the Hymenoptera stings (wasp, bee, hornet) and allergic reaction makes Hymenoptera the most dangerous venomous animals in Croatia. The greater weever (Trachinus draco) is the most venomous fish in the Adriatic sea. The sting of this fish is extremely painful and could cause some complications. The stings on the spikes of the Red Scorpionfish (Scorpaena acrofa) are less painful because of the weaker toxin. The contact in the sea with the jellyfish known in Europe as the mauve stinger (Pelagia noctiluca) can be painful and the sea anemone is of less importance. There are specific antivenoms for snake bites and the black widow bite and the therapy for other stings or bites is symptomatic. Therapy for potential bites of the imported world snakes must be urgent and the antivenom should be obtained by contacting the „Zagreb Zoo“.

031

Rickettsial diseases in Croatia as a potential problem in travel and tourist medicine

Author: Prof. Boris Dzelalij
Co-authors: Boris Luksic
Affiliations: 1. Department of Infectious Diseases, Zadar General Hospital, Zadar, Croatia; 2. School of Medicine, University of Split, Split, Croatia

Rickettsiae and rickettsial diseases continue to be a significant public health problem in Croatia, but also a problem of travel and tourist medicine. This report provides information regarding the data on current knowledge about rickettsiae and rickettsioses in Croatia. Nowadays, Croatia appears to be free of epidemic typhus (ET) caused by Rickettsia prowazekii, but still there are individual relapse cases (Brill-Zinsser disease). Likewise, the sporadic cases of murine typhus occurred in or originated exclusively from the Croatian littoral and islands between Zadar and Split. Human cases of Mediterranean spotted fever (MSF) caused by R. conorii have been observed along the Croatian coast, mainly in the area from Zadar to Dubrovnik. R. akari was isolated from blood of a patient diagnosed with MSF in Zadar. According to the studies of ticks, which are known vectors of spotted fever group rickettsiae (SFGR), different tick species are infected with different rickettsiae species. The occurrence of these rickettsial diseases in Croatia, the identification of MSF as an endemic rickettsiosis in our region, the emergence of new and unknown rickettsiae pathogenicity, serious types of clinical diseases and potential problems in travel and tourist medicine warn us clearly that our physicians must be very familiar with this rickettsial disease and include it into the differential diagnosis of acute febrile diseases accompanied by rash.
Meet our official Congress Band ...

“Green Hill Boys”

Zagreb music scene is enriched for another great jazz band formed on November 20th, 2012 in the apartment of Karlo Franić “Franc”. Today it consists of 4 trumpets, 2 trombones, 2 saxophones and a complete rhythm section – keyboards, guitar, bass guitar and drums. From April 24th, 2013 the band rehearses under the auspice of University Hospital for Infectious Diseases “Dr. Fran Mihaljević”. Its name, The Greenhill Boys, the band owes to a small jazz ensemble that consisted of 4 physicians that worked at University Hospital for Infectious Diseases in Zagreb, affectionately called “Hospital at the Green Hill”. Today, this amateur orchestra is led by Professor of Medical Science, Bruno Baršić, who is a great trumpet player and a music arranger. The Greenhill Boys band gathers many excellent musicians like Prim. Tomislav Maretić, MD, guitar player; psychiatrist Miljenko Srica, MD, PhD, trombonist; Vladimir Jazbec, saxophonist, prof. Marijan Gruber, keyboard player, Franjo Karlović who was also a longtime trumpet player in Croatian television Jazz orchestra, Karlo Franić “Franc”, trumpet player, drummer Darko Klarić, sound master on Croatian television and Stjepan Fučkar, saxophone and clarinet. Later, two professional musicians, Marijan Hegedić, trombonist and Ivan Žuvela, trumpeter who play at Croatian Army Orchestra joined the band. Two singers, Tajana Dobravc and Vesna Ceraj, MD perform with them.

The Greenhill Boys play on expert meetings of infectologists and intensivists and once a month they present music of Croatian physicians and jazzists participating at “Generale competences” specialist study. The band recorded with some of the popular Croatian singers and performs on other jazz scenes.
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