Confédération Interalliée des Officiers Médicaux de Réserve

Interallied Confederation of Medical Reserve Officers

Mid Winter Meeting 2011 – Brussels (Belgium)

Réunion d´hiver 2011 – Bruxelles (Belgique)

Scientific Programme

Programme Scientific

Abstracts of presentations

Résumés des conférences

Roemer HC, Bugert JJ. (Edit. 2011)

CIOMR Mid Winter Meeting 2011

CIOMR Réunion d´hiver 2011

09.02.11	*Wednesday*
0900 **1630**	**Workshop "Ultrasound in Trauma Care; The Basics"** *Col PerJan Driven, Col Walter Henny, Isabelle Huig*
1600	**Board Meeting**
1930	**CIOMR Walking Dinner**
10.02.11	*Thursday*
1000	**Opening Ceremony**
1245	**Lunch**
1430	**Executive Committee Meeting (Part 1)**
1530	**Coffee Break**
1545	**Committee Meeting OMC, Scientific**
1700	**Transportation and Reception War Museum**
11.02.11	*Friday*
0900	**Scientific Programme Session 1**
1035	**Coffee Break**
1050	**Scientific Programme Session 1**
1210	**Lunch**
1300	**Scientific Programme Session 2**
1420	**Coffee Break**
1435	**Scientific Programme Session 2 //** *(EC Meeting Part 2 1430-1530)*
1535	**Coffee Break**
1600	**Panel discussion: "End of the Antibiotic Era - Century of Infections?"**
1930	**Gala Dinner**
12.02.11	*Saturday*
0900	**Executive Committee Meeting Part 3**
1100	**Closing Ceremony**
1200	**Lunch**

CIOMR Mid Winter Meeting 2011

CIOMR Réunion d´hiver 2011

Scientific Programme	Programme scientifique
11 02 2011	**11 02 2011**
0900 - 1210	**0900 - 1210**

0900 **Arrival - Installation - Welcome / *Arrivée - Installation - Salutation***
PD *Dr Joachim J Bugert, Senior Lecturer in Virology, Cardiff Universit,y, UK - Dr Stef Stienstra, Beek-Ubbergen, NL*

0910 **Session 1 (multiresistance)**
1210 ***Chair:*** *PD Dr Joachim J Bugert*

0910 **The Emergence of NDM-1 and the End of the Antibiotic Era.**
Dr Mark Toleman, Cardiff, UK

0945 **The Control of Multiresistant Bacteria.**
Dr Bertrand Locherer, Colmar, France

1010 **Antibiotic Resistance and Infectious Disease Syndromes in Patients Transported Out of Iraq/Afghanistan.**
Dr Brad Lloyd, Landstuhl, Germany

1035 ***Coffee break***

1050 **Mechanisms of Staphylococcus Epidermidis Biofilm Formation.**
Professor Dietrich Mack, Swansea, UK

1115 **Bacteriophages as Therapeutic Agents.**
Dr Daniel de Vos, Bruessels; Belgium

1140 **The Red and the Green Life Machine.**
Dr Rick Jolly, Torpoint, UK

1210 **Lunch 1210 – 1300**

CIOMR Mid Winter Meeting 2011

CIOMR Réunion d´hiver 2011

Scientific Programme

11 02 2011

Programme scientifique

11 02 2011

1300 - 1700

1300 - 1700

1300 **Arrival Installation / *Arrivée Installation***

1300 **Session 2 (transmission/migration and management of natural disasters)**
1700 ***Chair:*** *Dr Stef Stienstra*

1305 **Animal Vectors in German Deployment Areas.**
Dr Andreas Krüger, Hamburg, Germany

1330 **Human Migration and the Spread of Disease.**
Dr Christine Vermeulen, Amsterdam, The Netherlands

1355 **Managing Highly Infectious Diseases in Europe: Recommendations and Reality.**
Dr Schilling, Frankfurt, Germany

1420 *Coffee break*

1435 **Natural Disaster Response: an Example from Haiti Earthquake 2010, MSF Intervention.**
Rosa Crestani, Brussels, Belgium

1505 **The Use of Reserve Medical Forces for Homeland Defense, Natural Disaster Response and Health Emergencies in the United States.**
Maj. Gen. Bob Kasulke, MD, Falls Church, USA

1535 *Coffee break*

1600 **Panel discussion: 'End of the Antibiotic Era - Century of Infections?'**
Moderator *PD Dr Joachim J Bugert*

1700 **Transport to Hotels**

POSTER session 0900 – 1700 in entrance hall NATO

1930 **Gala Dinner**

The emergence of NDM-1 and the end of the antibiotic era

Mark A. Toleman

Cardiff University
Department of Infection, Immunity and Biochemistry, Cardiff, UK

New Delhi metallo-b-lactamase (NDM-1) was originally isolated from a carbapenem resistant strain of Klebsiella pneumonia in 2008. Since the initial report the NDM-1 gene has emerged in various enteric bacterial species throughout India as well as >17 hospitals in the UK. More recently NDM-1-positive bacteria, mostly with direct links to India or Pakistan, have also been reported in 17 other nations, and by the US Centers for Disease Control (CDC) and Prevention, and the European CDC. Moreover concern over the rapid emergence and spread of this resistance mechanism has directly influenced the WHO to make antibiotic resistance the theme of World Health day 2011 and the Indian Government to change their laws concerning the use of antibiotics.

Molecular methods including S1 Pulsed field gel electrophoresis, cloning and sequencing, plasmid typing, and whole plasmid and genome sequencing have been applied to analyse the various genetic factors that are behind the rapid spread of this mechanism. In addition environmental sampling has indicated that the resistance mechanism is widespread in various environmental bacteria in New Delhi.

NDM-1 is harboured on numerous different plasmids and is exceptionally mobile being closely linked with ISCR elements and promiscuous incA/C plasmids. It is also closely associated with many other resistance mechanisms leading in some cases to pan-resistant organisms.

Les Bactéries Multi-Résistantes/ The control of the multiresistant bacteria

B. Locherer

Centre Départemental de Repos et de Soins, France

La maîtrise des bactéries multi-résistantes aux antibiotiques (BMR) est l'un des objectifs prioritaires de la lutte contre les infections nosocomiales à l'échelle nationale et internationale.
L'augmentation et la dissémination rapide des résistances bactériennes aux antibiotiques sont probablement l'un des problèmes de santé publique les plus inquiétants de ces dernières années.
Ce pourcentage représente en France une part trop importante des infections nosocomiales notamment par rapport à d'autres pays européens.
Ainsi, après l'utilisation massive des antibiotiques à partir des années 1940, suivie par les « quarante glorieuses » de l'infectiologie, on constate que les règles d'hygiène de base on été peu à peu négligées.
Par ailleurs, aucune classe nouvelle d'antibiotique n'est attendue dans les prochaines années.
Nous nous dirigeons vers ce que certains prédisent comme « The pre-antibiotic era is back ! » accompagné d'un retour à la prévention ainsi qu'au bon usage des antibiotiques.

The control of the multiresistant bacteria is one of the top priorities of the unrelenting fight against nosocomial infections on the national as well as the international scale.
The increase and the fast dissemination of bacterial resistances to antibiotics is probably one of the most worrying public health problems of these last years. In France, this percentage represents a far too significant part of the nosocomial infections especially when compared to other European countries.
Thus, after the massive use of antibiotics as from the years 1940, followed by "the forty glorious ones" in the domain of the infectiology, one notes that little by little the basic rules of hygiene have been neglected.
In addition, no new antibiotic class should be available in the next few years.
We are moving towards times which some qualifies as "the pre-antibiotic era is back !" The resistance problem requires a high compliance with infection control measures and a prudent and a more restrictive use of antibiotics.

Antibiotic Resistance and Infectious Disease Syndromes in Patients Transported Out of Iraq/Afghanistan

Bradley A. Lloyd

Landstuhl Regional Medical Center, Germany

The development of antibiotic resistant infections has emerged as an important factor in the recovery process for patients who have sustained severe trauma while serving their country during on-going operations in Iraq and Afghanistan. This lecture will highlight the evolution of antibiotic resistance seen in these patients, review specific examples of how it has affected their care, and highlight some of the current research which has looked at infectious disease outcomes in these patients. Resistance rates to routine nosocomial pathogens and tuberculosis will be reviewed. Examples of other unique infectious syndromes transported out of the current theaters of operation will also be reviewed with the goal of broadening a clinician's differential when dealing with these patients.

Mechanisms of *Staphylococcus epidermidis* biofilm formation in different forms of device-related infection

Dietrich Mack

Medical Microbiology and Infectious Diseases, School of Medicine, Swansea, UK

Staphylococcus epidermidis is the prototype organism involved in medical biofilm disease resulting in infected implants like intravascular catheters or joint prostheses yearly affecting millions of patients worldwide. These infections persist despite antimicrobial treatment due to organization of *S. epidermidis* in surface adherent biofilms regularly requiring device removal. Biofilms are formed in two phases: initial attachment of bacteria is followed by accumulation of bacteria in multiple layers. Attachment is a multifactorial process involving a variety of specific protein and polysaccharide factors depending on surface properties. We identified polysaccharide intercellular adhesin (PIA) as the central functional factor in biofilm accumulation. PIA is a homoglycan of β-1,6-linked N-acetylglucosamine residues of which 15-20% are deacetylated. PIA is synthesised by the gene products of the *icaADBC* locus. Epidemiological studies defined PIA as the main functional molecule involved in biofilm accumulation in *S. epidermidis*. Using isogenic biofilm-negative *icaA*-insertion mutants expression of PIA and biofilm formation were defined as essential virulence factors of *S. epidermidis* in foreign body infection models.

Interestingly, expression of PIA as a mechanism for biofilm accumulation is not unique to *S. epidermidis*. Numerous other staphylococcal species including *Staphylococcus aureus*, S. *caprae*, *S. lugdunensis,* and other coagulase-negative staphylococci possess the *icaADBC* locus and may synthesise PIA. Additionally, a number of Gram-negative human pathogens including *Escherichia coli*, *Aggregatibacter actinomycetemcomitans*, *Actinobacillus pleuropneumoniae*, *Yersinia pestis*, and *Bordetella spp*. synthesise PIA using enzymes encoded by orthologous gene loci referred to as *pgaABCD* or *hmsHFRS*, indicating that PIA is a general principle in biofilm formation in many eubacteria.

Bacteriophages as Therapeutic Agents

D. De Vos[1], J-P. Pirnay[1], G. Laire[2]

[1]Military Hospital Queen Astrid, Belgium, [2]Surgeon General, Medical Component, Belgium

Introduction The worldwide emergence of "superbugs" bring clinicians and patients back in the pre-antibiotic era. Bacteriophages, the most abundant lifelike entities on earth could be a solution as natural bacterial controllers. In combination with or as alternative to antibiotics they could be a solution for the treatment of bacterial infections. Major obstacles however hamper the development of this therapeutic option:
The lack of a specific regulatory frame in the medicinal product regulation
The absence of well-defined, safe and targeted bacteriophage preparations
The false perception of viruses as 'enemies of life'

Methods A multidisciplinary team combined forces for developing this approach by an analysis of the current regulatory frame, the production of a quality controlled well-defined bacteriophage cocktail for clinical use, the setup of a safety trial and the creation of an international organization for the promotion of phage therapeutic research

Results Production and application of bacteriophages

Discussion/Conclusion A first step in phagetherapy is taken

THE RED AND GREEN LIFE MACHINE

Richard Jolly OBE OdeM

Retired Royal Navy Surgeon Captain

Dr Jolly commanded the British field hospital ashore in the Falkland Islands, in 1982. During its brief 3 week existence, the unit treated nearly one thousand battle casualties of both sides, with astonishingly successful results. No British soldier died of his wounds in Ajax Bay, and only three succumbed in the Hospital Ship positioned offshore. There were no radiographic, ultrasound or laboratory facilities available, but a blood transfusion policy was instituted to very good effect. Because his unit was positioned in an abandoned sheep slaughterhouse, and close to legitimate logistic targets, Rick Jolly could not use the Red Cross insignia for protection. Two unexploded 400 kg Argentine bombs were an unwanted consequence of this key ethical decision.

The British surgeons pursued a policy of wide debridement and decompression of all high energy artillery and missile wounds; despite the dust and dirt, infection rates were very low. No gas gangrene of tetanus was seen.

After the cessation of hostilities, Rick was (most unusually) decorated by both sides, receiving the *OBE* from Her Majesty the Queen, and the *Order of May* from a grateful Argentine Government.

Animal vectors in German deployment areas

Andreas Krüger

Bundeswehr Hospital Hamburg, Dept. Tropical Medicine, Bernhard-Nocht-Institute for Tropical Medicine, Hamburg, Germany

Introduction: Infectious diseases led to more losses than gun injuries in most historical war theatres. The Bundeswehr preventive medicine gives major attention to vector-borne disease monitoring, in particular vectors of leishmaniasis and malaria, in foreign deployment areas.

Methods: Routine vector monitoring and short-term field surveys were carried out by means of mosquito light traps, breeding site inspection and reservoir host screening in Afghanistan, Kosovo and Cyprus.

Results: Even in the most arid areas the mosquito fauna is quite rich, including malaria vectors. Moreover, sandfly vectors of leishmaniasis are abundant in all deployment areas. Further relevant arthropods were blackflies, biting midges, several tick species including vectors of Crimean-Congo Haemorrhagic Fever, and several venomous animals.

Conclusions: Although Afghanistan appears to be rather hostile by means of its environment and climate (not to speak of the security!) its vector fauna resembles that of the Mediterranean. Personal protection measures and exposure prophylaxis are mandatory.

Migration and the spread of diseases, an overview

Major C.F.W. Vermeulen, MD, PhD*, Colonel O.C.K.M. Penn, MD, PhD**

**Department of Surgery, Zaandam Medical Centre, Amsterdam Region, The Netherlands*
*** Professor of Cardiothoracic Surgery, University Maastricht, The Netherlands*

"Import diseases" are not only caused by infectious diseases but also by accidents and physical factors. However, infections are the most important in the ubiquitous transmission of diseases. Infectious diseases are widespread and depend on micro-organism, vector and transmission.
They can be related to the intake of food and water, sexual transmission, the respiratory system, arthropods, worms and bites.
Micro-organisms vary from virus to worm. HIV infection is the most feared disease at the moment, man being vector and transmitter. Hepatitis B and C can be the result of blood transfusions but is also sexually transmittable. Hepatitis A is associated with the flying in of vegetables and fruits from developing countries. Tuberculosis, spread by aerosols, is responsible for a death toll of 3 million/year and is advancing due to the spread of HIV. Arthropod-borne diseases include malaria and dengue. Fortunately most of their vectors stop at the border of Switzerland and France.

Managing Highly Infectious Diseases in Europe: Recommendations and reality

S. Schilling

Department for Infectious Diseases, Frankfurt University Hospital, Germany

Highly Infectious Diseases (HIDs) are defined as transmissible from person to person, causing life-threatening illness and presenting a serious hazard to the public. Thus, care for HID patients should be provided under maximum infection control conditions in High Level Isolation Units (HLIUs). Throughout the last decade case identification, infection control procedures and clinical management of HID patients have been the focus of interest. Despite such efforts to create a secure environment for both patients and personnel the reality in routine care is still different.

Consensus statements from the US and EU regarding the construction and operation of HLIUs and their impact on care facilities will be presented. Data from a cross-sectional analysis of specialised European facilities are presented to identify gaps between recommendations and reality. Based on a risk assessment, a generic approach for the management of HID cases should depict solutions to ensure continuum of care in routine settings.

Natural Disaster Response: an example from Haiti Earthquake 2010, MSF intervention

Rosa Crestani

Médecins Sans Frontières, Brussels, Belgium

Natural Disasters can cause huge losses, in terms of lives and/or goods, they can lead to life threatening illnesses and they are potentially a hazard to the surviving population affected by the unstable situation after the disaster.
The presentation will show the medical and humanitarian response done by Médecins Sans Frontières after the 12th of January 2010 earthquake in Haiti; one of the worst natural catastrophes to hit a capital city in history.
This was also one of the biggest MSF interventions since the creation of MSF, 40 years ago.
Many medical and relief activities were done which contributed to saving many lives, decreasing morbidity and improving the living conditions of some of the affected population.
The presentation will also show some of the medical problems faced by the teams during the first weeks of intervention.

The Use of Reserve Medical Forces for Homeland Defense, Natural Disaster Response and Health Emergencies in the United States.

MG Robert J. Kasulke MD MPA FACS

Deputy Surgeon General, Army Reserve Medical Command, USAR

The majority of medical assets in the US Army, 65%, are in the US Army Reserve. In the event of a national crisis, whether the result of a natural disaster, disease (pandemic), or a military strike or terrorist attack, etc., the nation is going to have to draw from and utilize the medical assets that it has in the Reserve Components.

I will discuss what legal steps are required to be taken under the Constitution of the United States to legally draw from the Reserve components. I will discuss the difference in this process related to the National Guard and the Reserve Components.

The way that these assets can be utilized and the legal issues that are involved in every part of their medical activity.

The discussion will also involve credentialing providers, medical liability issues, command and control concerns, etc.

The mobilization of Reserve Forces for these events is very complex, both legally and administratively in the United States and, at the end of my discussion, I hope to make the attendees better understand how this process works and why it is so difficult to mobilize certain parts of the US Reserve Forces in response to use in these types of events.

Authors:

*Rosa **Crestani,** Emergency Medical Coordinator*
Médecins Sans Frontière – rue Dupré, 94 – Brussels, BELGIQUE – 1090
rosa.crestaniQbrussels.msf.org

*Dr Daniel **De Vos** PhD*
Burn Wound Centre, Military Hospital Queen Astrid, Bruynstraat 1, Brussels, BBELGIQUE – 1120, daniel.devos2@mil.be

*Col Walter **Henny** MD*
6 Boterdorps Verlaat Rotterdam 3054 XL, NETHERLANDS, whenny@wanadoo.nl

*Capt Dr Rick **Jolly** MD (ret)*
Royal Marines 3rd Commando Brigade, PO Box 42, Torpoint, Cornwall, PL11 3EB UK, rickjolly82@btinternet.com

*MG Robert John **Kasulke** MD*
Deputy Surgeon General (IMA), Mobilization, Readiness and Reserve Affairs, Office of the Surgeon General, Falls Church, Virginia 22041-3258, 270 Clinton Street, USA, 13601, ckasulke@twcny.rr.com

*Maj Andreas **Krüger** PD Dr. rer. nat.*
Bundeswehr Hospital Hamburg Bernard Nocht Institute, Bernhard-Nocht-Str. 74, 20359 Hamburg, GERMANY, Krueger@bni-hamburg.de

*Lt Dr Bertrand **Locherer** MD*
Centre Départemental de Repos et de Soins, 40 rue du Stauffen BP 468, 68000 Colmar, FRANCE, bertrand.locherer@orange.fr

*LtCol Dr Brad **Lloyd** MD*
ERMC ID Consultant, US Army Landstuhl Regional Medical Center, CMR 402, Box 1559, United States (APO Address) APO AE 09180 Landstuhl, GERMANY, Bradley.lloyd@amedd

*Professor Dr Dietrich **Mack***
Chair of Medical Microbiology and Infectious Diseases, Swansea University College of Medicine, Swansea, UK, d.mack@swansea.ac.uk

*Maj Stefan **Schilling** Dr. med.*
Frankfurt University Hospital, Dept. for Infectious Diseases, Theodor-Stern-Kai 7, 60590 Frankfurt, GERMANY, stefan.schilling@kgu.de

*Cdr Stef **Stienstra** MD PhD*
Royal Dutch Navy, Postbus 110, 6573 ZK Beek-Ubbergen, NETHERLANDS, sstienstra@ciomr.org

*Dr Mark **Toleman** PhD*
Research Fellow, Cardiff University School of Medicine, Cardiff, UK, tolemanma@cardiff.ac.uk

*Maj Dr Christine **Vermeulen** MD PhD*
Zaans Medical Centre, P.O. Box 210, 1500 EE Zaandam, NETHERLANDS, vermeulencfw@gmail.com

Secretary Scientific Committee:
*LtCol Hermann C. **Roemer** MD, PhD*
Specialist in General, Occupational and Environmental Medicine
Associated Teacher, Teaching Facility for the University of Essen/Duisburg Medical School
Group Practice, Internal, General, Family, Occupational, Environmental Medicine
Altenessener Strasse 442, 45329 Essen, GERMANY: hroemer@ciomr.org

Project Manager MWM
*LCdr Joachim J. **Bugert** PD Dr med*
Senior Lecturer, Department of Infection Immunity and Biochemistry/Microbiology section
Cardiff University School of Medicine/ Wales College of Medicine, Cardiff CF14 4XN, UK
bugertjj@cf.ac.uk

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