Programm

103. Jahrestagung der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit

Biannual Meeting of the
German Society of Tropical Medicine
& International Health

Düsseldorf
14. - 15. März 2014

MNR-Hörsaalkomplex
und
Leber- und Infektionszentrum
Universitätsklinikum Düsseldorf
Moorenstraße 5

www.dtg-jahrestagung.de

Veranstaltungstermin - Date:

14.-15. März 2014

Veranstaltungsort - Venue

Universitätsklinikum Düsseldorf
MNR-Hörsaalkomplex – Gebäude 13.55
und
Leber- und Infektionszentrum – Gebäude 13.57

Moorenstraße 5
40225 Düsseldorf

Wissenschaftliche Organisation

Scientific Organization

Prof. Dott. Univ. Pisa Joachim Richter

Prof. Dr. med. Dieter Häussinger

Klinik für Gastroenterologie, Hepatologie und Infektiologie

Universitätsklinikum Düsseldorf

Moorenstraße 5, D-40225 Düsseldorf

e-Mail: Joachim.Richter@med.uni-duesseldorf.de

Tagungsorganisation - Conference Organization

Industrieausstellung - Exhibition

RG Gesellschaft für Information und Organisation mbH

Würmstrasse 55, D-82166 Gräfelfing, Tel.: +49- (0)89 - 89 89 948-112,

Fax.: +49- (0)89 - 89 80 99 34, e-mail: tekin@rg-web.de,

Registrierung - Registration

via Internet: www.dtg-jahrestagung.de

während der Tagung - at the conference:

Tagungsbüro - registration desk

INHALT - CONTENT

DTG Jahrestagung - Biannual Meeting 2014

Liebe Kolleginnen, liebe Kollegen,

Im Namen der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit (DTG) laden wir Sie herzlich zur 104. DTG-Jahrestagung vom 14. bis 15. März 2014 in Düsseldorf ein.

Die Tagung bietet ein breites Spektrum von Themen in allen Bereichen der Tropenmedizin im In- Ausland. Außer „tropenmedizinischen“ Erkrankungen im traditionellen Sinn beschäftigt sie sich mit globaler Gesundheit sowohl in Ländern mit eingeschränkten finanziellen Ressourcen, als auch bei Migranten. Globale Gesundheit und Medizin beinhalten auch die Erkennung und Transmissionsprävention von Erkrankungen, die auf den heutigen schnellen Transportwegen in kürzester Zeit nach Europa und Deutschland eingeschleppt werden können.

Die Tagung richtet sich in besonderem Maß an jüngere Wissenschaftler, denen eine Plattform zur Präsentation Ihrer Arbeit und zur Diskussion geboten wird.

Wir würden uns sehr freuen, Sie als Teilnehmer der DTG Jahrestagung 2014 in Düsseldorf begrüßen zu dürfen.

Joachim Richter

Dieter Häussinger

Gemeinsam veranstaltet von - jointly organized by

- Deutsche Gesellschaft für Tropenmedizin & Internationale Gesundheit e.V. (DTG)
- Deutsche Gesellschaft für Parasitologie e.V. (DGP)
- Paul-Ehrlich-Gesellschaft für Chemotherapie e.V. (PEG)
- Fachgruppe Tropenveterinärmedizin der Deutschen Veterinärmedizinischen Gesellschaft e.V. (DVG)
- Arbeitsgemeinschaft Tropenpädiatrie e.V. (ATP)
- Deutsche Gesellschaft für Tropenchirurgie e.V. (DTC)
- Arbeitsgemeinschaft Frauengesundheit in der Entwicklungszusammenarbeit e.V. (FIDE)
- Anästhesie in Entwicklungsländern e.V.
- Sektion Internationale Ophthalmologie der DOG e.V.
- Referat Transkulturelle Psychiatrie und Migranten in der DGPPN e.V.
- Arbeitsgemeinschaft Ethnomedizin e.V. (AGEM)
- Deutsche Gesellschaft für Infektiologie e.V. (DGI)
- *foring* - Forum für Internationale Gesundheit e.V.

Wissenschaftliches Komitee - Scientific Committee

Gerd-Dieter Burchard, Hamburg
Matthias Frank, Tübingen
Albrecht Jahn, Heidelberg
Thomas Junghanss, Heidelberg
Reinhard Klinkott, München
Jürgen May, Hamburg
Joachim Richter, Düsseldorf

Wissenschaftliche Organisation - Scientific Organization

Prof. Dott. Univ. Pisa Joachim Richter, Prof. Dr. med. Dieter Häussinger
Britta Lück (Sekretariat)
Klinik für Gastroenterologie, Hepatologie und Infektiologie
Universitätsklinikum Düsseldorf
Moorenstraße 5, D-40225 Düsseldorf
Tel.: +49- (0)211 - 811916; Fax: +49- (0)211 - 8118871
e-mail: Joachim.Richter@med.uni-duesseldorf.de

Tagungsorganisation - Conference Organization

RG Gesellschaft für Information und Organisation mbH, www.dtg-jahrestagung.de
Würmstrasse 55, D-82166 Gräfelfing, Tel.: +49- (0)89 - 89 89 948-112,
Fax.: +49- (0)89 - 89 80 99 34, e-mail: tekin@rg-web.de

Tagungsort - Conference venue

MNR Hörsaalkomplex – Gebäude 13.55
und Leber- und Infektionszentrum – Gebäude 13.57
Universitätsklinikum Düsseldorf
Moorenstraße 5, 40225 Düsseldorf

Anfahrt - Anreise mit dem Auto

Von Norden:
A3 bis AK Hilden, dann die A46 in Richtung Neuss bis Abfahrt 24 (Wersten/Universität)

Von Osten:
A46 in Richtung Neuss bis Abfahrt 24 (Wersten/Universität)

Von Süd/Südost:
A3 bis AK Hilden oder A59 bis Düsseldorf Süd, dann auf die A46 in Richtung Neuss bis Abfahrt 24 (Wersten/Universität)

Von West/Südwest/Nordwest:
A57 in Richtung Neuss bis AK Neuss Süd, A46 in Richtung Wuppertal bis Abfahrt 24 (Wersten/Universität) dann weiter in Richtung Uni-Klinik (Beschilderung folgen), Parkplätze sind dem Klinikplan zu entnehmen

Anreise mit dem Flugzeug

Vom Flughafen Düsseldorf
mit Öffentlichen Verkehrsmitteln (zirka 40 min) oder mit dem Taxi (zirka 20 min) S-Bahn bis Düsseldorf Hauptbahnhof, weiter mit der Straßenbahn (siehe Nahverkehrsmittel)

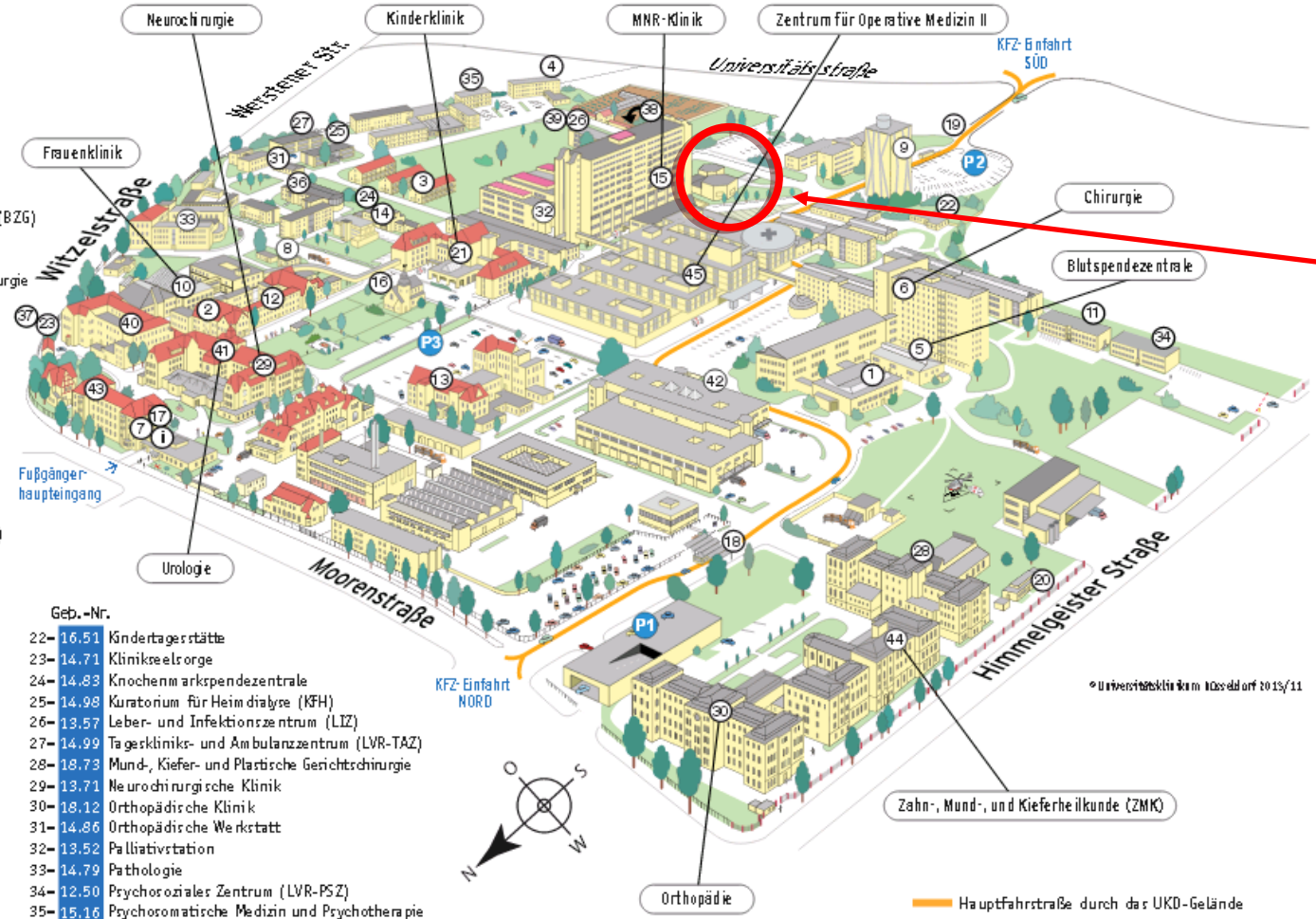
Anreise mit der Straßenbahn / Bus

Mit öffentlichen Nahverkehrsmitteln
mit den Straßenbahn (Linie 701,707,711 oder 713) bis zur Haltestelle Uni Klinik oder mit dem Bus (Linie 825 oder 836) bis zur Haltestelle Uni West.

Ankunft an der Haltestelle - Unikliniken
in Fahrtrichtung gesehen zirka 50 m nach rechts befindet sich der Haupteingang des Universitätsklinikums (Nr. 33 im Orientierungsplan),dann weiter zur MNR-Klinik (12-stöckiges Haus, etwa 100 m)

Universitätsklinikum Düsseldorf

Geb.-Nr.		
1–	12.42	Anästhesiologie
2–	13.75	Augenklinik
3–	14.95	Betriebsärztlicher Dienst
4–	15.21	Bildungszentrum für Kompetenzentwicklung im Gesundheitswesen (BZG)
5–	12.43	Blutspendezentrale
6–	12.41	Chirurgie -Allgemein-, Viszeral- und Kinderchirurgie - Gefäß- und Endovaskularchirurgie -Kardiovaskuläre Chirurgie -Unfall- und Handchirurgie
7–	11.72	Dekanat
8–	14.27	Elternhaus
9–	16.61	Fachbibliothek Medizin: O.A.S.E.
10–	14.24	Frauenklinik
11–	12.49	Hämostaseologie, Hämotherapie u. Transfusionsmedizin
12–	13.76	Hals- Nasen- und Ohrenklinik
13–	11.80	Hautklinik
14–	14.83	Hyperbare Sauerstofftherapie (HBO)
15– bis	13.51 13.55	Innere Medizin und Neurologie (MNR-Klinik) -Diagnostische und Interventionelle Radiologie -Endokrinologie und Diabetologie -Gastroenterologie, Hepatologie und Infektiologie -Hämatologie, Onkologie und Klinische Immunologie -Hörsäle 13A und 13B -Kardiologie, Pneumologie und Angiologie -Musikerambulanz -Nephrologie -Neurologie -Nuklearmedizin - Rheumatologie -Stoffwechselkrankheiten -Universitätstumorambulanz (UTA) -Universitätstumorzentrum (UTZ)
16–	13.79	Kapelle
17–	11.72	Kasse
18–	18.80	KFZ-Einfahrt Nord
19–	13.48	KFZ-Einfahrt Süd
20–	18.21	Kieferorthopädie
21–	13.41	Kinderklinik (Schlosmannhaus)



Geb.-Nr.		
22–	16.51	Kindertagesstätte
23–	14.71	Klinikseelsorge
24–	14.83	Knochenmarkspendezentrale
25–	14.98	Kuratorium für Heimdialyse (KFH)
26–	13.57	Leber- und Infektionszentrum (LIZ)
27–	14.99	Tageskliniks- und Ambulanzzentrum (LVR-TAZ)
28–	18.73	Mund-, Kiefer- und Plastische Gesichtschirurgie
29–	13.71	Neurochirurgische Klinik
30–	18.12	Orthopädische Klinik
31–	14.86	Orthopädische Werkstatt
32–	13.52	Palliativstation
33–	14.79	Pathologie
34–	12.50	Psychosoziales Zentrum (LVR-PSZ)
35–	15.16	Psychosomatische Medizin und Psychotherapie
36–	14.84	Rechtsmedizin
37–	14.71	Sozialdienst
38–	13.54	Strahlentherapie und Radioonkologie
39–	13.57	Tropenmedizin
40–	14.75	UNIKID (Kinderwunschzentrum)
41–	13.72	Urologische Klinik
42–	17.21	Versorgungszentrum
43–	13.70	Verwaltung, Pflegedirektion, Vorstand

Geb.-Nr.		
44–	18.13	Zahn-, Mund- und Kieferheilkunde (ZMK) -Zahnerhaltung, Parodontologie und Endodontologie -Zahnärztliche Chirurgie und Aufnahme -Zahnärztliche Prothetik
45– bis	11.51 11.54	Zentrum für Operative Medizin II

Hauptfahrstraße durch das UKD-Gelände

P1 Parkhaus (gebührenpflichtig)

P2 Allg. Parkplatz (Zufahrt über Universitätsstr., gebührenpflichtig)

P3 Patienten/Besucherparkplatz am ZOM II, gebührenpflichtig (Einfahrt mit gelöstem Einfahrtsticket)

Tagungsort: MNR-Hörsaalkomplex – Gebäude 13.55

Programmübersicht - Program at a Glance

Freitag - Friday März - March 14; 2014

Track:	Clinical Research	Biological Research	Global Health	Imaging / Gynecology	Various Topics	Meetings
Raum/room	**HS 13A**	**HS 13B**	**HS SR 10**	**LIZ SR 1**	**LIZ SR 2**	**SR Gastro**
09:00-10:30	PLENARY I TROPICAL MEDICINE QUO VADIS? POLIOMYELITIS ERADICATION IN NIGERIA POLIOMYELITIS ERADCATION IS IT FEASIBLE?					
10:30-11:00	INDUSTRY EXHIBITION - POSTER SESSION 1					
11:00-12:30	EMERGING AND RE-EMERGING INFECTIOUS DISEASES	TUBERCULOSIS	GLOBAL HEALTH POLICIES	IMAGING IN REGIONS WITH LIMITED RESOURCES	ARBEITSMEDIZINISCHE HERAUSFORDERUNGEN FÜR TROPENMEDIZINER	Meetings
12:30-13:30	INDUSTRY EXHIBITION - POSTER SESSION 2					
13:30-15:00	TRYPANPOSOMIASIS AND LEISHMANIASIS	HOST PARASITE INTERACTIONS	NEGLECTEDGLOBAL HEALTH ISSUES IN TIMES OF ECONOMIC CRISIS: MENTAL HEALTH AND VIOLENCE	GYNAECOLOGY, OBSTETRICS AND IMAGING IN REGIONS WITH LIMITED RESOURCES	CLINICAL CASES	Meetings
15:00-15:30	INDUSTRY EXHIBITION - POSTER SESSION 3					
15:30-17:00	NEW VACCINES	MALARIA	GLOBAL PRIORITIES VERSUS LOCAL NEEDS IN PREVENTION AND CLINICAL CARE	ULTRASONOGRAPHY IN GYNAECOLOGY AND OBSTETRICS MOTHER CHILD HEALTHCARE	WILDERNESS MEDICINE	Meetings
17:00-18:30	HIV, VIRAL HEPATITIS AND CO-INFECTIONS	MALARIA	NEGLECTED MYCO-BACTERIAL DISEASES	YOUNG DTG	INTERNATIONAL COOPERATIONS	
18:30-19:15	DTG-MEMBERS MEETING					

ab 20:00 from 08:00 p.m. SOCIAL EVENT SCHLÜSSEL BREWERY

Programmübersicht - Program at a Glance

Samstag - Saturday, März – March 15, 2014

Track:	Clinical Research	Biological Research	Global Health	Clinical specialties	Travel and Migration Medicine	Meetings
Raum/room	**HS 13A**	**HS 13B**	**SR 10 – HS**	**LIZ SR 1**	**LIZ 2**	**SR Gastro**
09:00-10:30	PLENARY II: NON-COMMUNICABLE DISEASES IN POOR COUNTRIES IMPORTANCE OF PSYCHIATRIC DISEASES IN SUBSAHARAN AFRICA TROPICAL MEDICINE AWARD					
10:30-11:00	POSTER SESSION – POSTER-BEGEHUNG					
11:00-12:30	HELMINTHIC INFECTIONS – PLATHELMINTHES	RETROVIRAL INFECTIONS, VIRAL HEPATITIS & CO-INFECTIONS	NACHWUCHSFÖRDERUNG GLOBALE GESUNDHEIT	TROPICAL PEDIATRICS	NEWS IN TRAVEL AND MIGRATION MEDICINE	Meetings Forschergruppen
	POSTER SESSION	POSTER SESSION	POSTER SESSION	POSTER SESSION	POSTER SESSION	
13:30-15:00	HELMINTHIC INFECTIONS – NEMATHELMINTHES	TROPICAL VIRAL INFECTIONS	MIGRATION AND HEALTH	TROPICAL NEUROLOGY		Sitzungen
15:00-15:30	CLOSING CEREMONY AWARDS FOR BEST POSTERS AND PRESENTATIONS					

Programm - Program

Freitag – Friday, März – March 14, 2014

P 1 GLOBAL HEALTH

Plenary

Raum - Room HS 13A 09:00 – 10:30

Chair **T. Löscher (München), J. Richter (Düsseldorf)**

Grusswort - Opening address:
D. Häussinger, Düsseldorf

Staatssekretärin Martina Hoffmann-Badache
Ministerium für Gesundheit, Emanzipation,
Pflege und Alter des Landes Nordrhein-Westfalen

P1 **Tropical Medicine: quo vadis? T. Löscher (München)**

P2 **Polio eradication - is it really feasible? O. Müller (Heidelberg)**

P3 **Polio eradication - the last mile in Nigeria. Y. I. Barau (Abuja)**

S 1 EMERGING AND RE-EMERGING INFECTIOUS DISEASES

Raum - Room HS 13A 11:00 – 12:30

Chair **G.D. Burchard (Hamburg), B. Jensen (Düsseldorf)**

Übersichtsvorträge - Keynote Lectures:

Sy1 **Prospects and limitations of modern technologies to detect new pathogens. H. Rohde (Hamburg)**

Sy2 **Tropheryma whipplei in Africa. C. Vinnemeier (Hamburg)**

Sy3 **Emerging Influenza viruses. T. Harder (Riems)**

Kurzvortrag - Short Presentation:

OP1 **Burkholderia pseudomallei, the causative agent of melioidosis – a diagnostic challenge. Frickmann H (Hamburg)**

Programm - Program

Freitag – Friday, März – March 14, 2014

S 2 TRYPANOSOMIASIS AND LEISHMANIASIS

Raum- Room HS 13A 13:30 – 15:00

Chair **A. Stich (Würzburg), T. Zoller (Berlin)**

Übersichtsvortrag - Keynote Lecture:

Sy4 **Die Chagas-Krankheit – eine Gefahr für Europa? T. Zoller (Berlin)**

Kurzvorträge - Short Lectures:

OP2 **Epidemiologic and socio-economic factors of Chagas disease in Bolivian immigrants in Munich. N. Berens-Riha (München)**

OP3 **EL CID - Erkennen und Lenken von Chagaspatienten in Deutschland. J. Strasen (Würzburg)**

S 3 NEW VACCINES

Raum - Room HS 13A 15:30 – 17:00

Chair **R. Steffen (Zürich), T. Löscher (München)**

Übersichtsvorträge - Keynote Lectures:

Sy5 **Development of a Dengue Vaccine. T. Jänisch (Heidelberg)**

Sy6 **New Vaccines against Invasive Meningogoccal Infections. J. Cramer (Hamburg)**

Sy7 **Development of Vaccines against Gastointestinal Infections. R. Steffen (Zürich)**

Kurzvortrag - Short Presentation:

OP4 **Serological response following re-vaccination with Salmonella typhi Vi capsular polysaccharide vaccines in travellers. L. Roggelin (Hamburg)**

Programm - Program

Freitag – Friday, März 14, 2014

S 4 HIV, VIRAL HEPATITIS AND CO-INFECTIONS

Raum - Room HS 13A 17:00 – 18:30

Chair D. Häussinger (Düsseldorf), T. Feldt (Düsseldorf)

Übersichtsvorträge - Keynote Lectures:

Sy8 HIV in resource limited countries - update 2014. A. Kroidl (München)

Sy9 Prevention of HIV Mother-to-Child transmission. U. Haars (Düsseldorf)

Sy10 Epidemiology and clinical relevance of HBV in Africa. T. Feldt (Düsseldorf)

Sy11 HBV-Genotypes in Africa. D. Glebe (Gießen)

Kurzvorträge - Short presentations

OP5 Fighting Hepatitis B in North Korea. Implementation of a bi-modal prevention strategy in a difficult political setting. M. Unnewehr (Dortmund)

DTG-Mitgliederversammlung

Raum - Room HS 13A 18:30 – 19:15

Mitgliederversammlung der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit (DTG) –
Meeting of the members of the German Society of Tropical Medicine and International Health

Programm - Program

Freitag – Friday, März – March 14, 2014

S 5 TUBERCULOSIS

Raum- Room HS 13B 11:00 – 12:30

Chair **M. Hoelscher (München) F. Hüttig (Düsseldorf)**

Übersichtsvortrag - Keynote Lecture:

Sy12 **Development of novel tuberculosis treatments (M. Hoelscher, München)**

Sy13 **TB or not TB: difficulties in the diagnosis of Tuberculosis in HIV-positive vs. HIV-negative immigrants to Germany. F. Hüttig (Düsseldorf)**

Kurzvorträge - Short presentations

OP6 **Analysis of M. tuberculosis isolates from Lambaréné reveals clonal expansion of an MDR tuberculosis strain in rural Gabon. E. Bruske (Tübingen)**

OP7 **Little effort and great effect: The impact of the WHO TB screening tool on medical care of HIV/TB co-infected patients in Ghana. K.A. Eberhardt (Hamburg)**

S 6 HOST PARASITE INTERACTIONS

Raum- Room HS 13 B 13:30 – 15:00

Chair **E. Tannich (Hamburg), B. Fleischer (Hamburg)**

Übersichtsvorträge - Keynote Lectures:

Sy16 **Amoebic liver abscess: why females do better than males? E. Tannich (Hamburg)**

Sy17 **Giardiasis: a reportable but neglected disease in Germany. T. Aebischer (Berlin)**

Sy18 **Helminth infections interfere with vaccination efficacy. M. Breloer (Hamburg)**

Sy19 **Helminth infections and their implication on insulin resistance and autoimmune diabetes. M. Hübner (Bonn)**

Programm - Program

Freitag – Friday, März – March 14, 2014

S 7 MALARIA

Raum- Room HS 13 B 15:30 – 17:20

Chair **M. Frank (Tübingen), J.May (Hamburg)**

Übersichtsvorträge - Keynote Lectures:

Sy20 **Therapy of severe malaria. J. Cramer (Hamburg)**

Sy21 **Controlled human Infections with *Plasmodium falciparum* as basis for the development of a vaccine. B. Mordmüller (Tübingen)**

Kurzvorträge - Short Presentations:

OP8 **Mosquito passage of *Plasmodium falciparum* NF54 parasites changes the var gene transcriptional hierarchy from favored transcription of central to telomeric var genes. S.Dimonte (Tübingen)**

OP9 **Microsatellite genotyping and var gene characterization of *Plasmodium falciparum* strains to study the inheritance of variant surface antigens. E. Bruske (Tübingen)**

OP10 **Prevalence of malaria parasites in healthy pregnant women in the Madagascan high- and lowlands. O. Maiga-Ascofaré (Antananarivo/Hamburg))**

OP11 **Case report: rupture of the spleen in malaria due to *Plasmodium ovale*. R. Lemmerer (Wien)**

S 8 DORMANCY IN MALARIA

Raum- Room HS 13 B 17:30 – 18:30

Chair **A. Labisch (Düsseldorf), H. Mehlhorn (Düsseldorf)**

Übersichtsvorträge - Keynote Lectures:

Sy22 **History of the hypnozoite-concept in Apicomplexa. H. Mehlhorn (Düsseldorf)**

Sy23 **The hypnozoite concept in Malaria. G. Franken (Düsseldorf)**

Sy24 **Dormancy in Malaria – another view - illustrated by clinical observations. J. Richter (Düsseldorf)**

Programm - Program

Freitag – Friday, März – March 14, 2014

S 9 GLOBAL HEALTH POLICIES IN THE CONTEXT OF THE GERMAN GOVERNMENT'S NEW GLOBAL HEALTH CONCEPT

Raum - Room HS SR 10 11:00 – 12:30

Chair E.-M. Schwienhorst (Würzburg), A. Jahn (Heidelberg)

Übersichtsvorträge - Keynote Lectures:

Sy25 Kernpunkte des Globalen Gesundheitskonzepts der Bundesregierung und Spuren im Koalitionsvertrag. A. Jahn (Heidelberg)

Sy26 Das Globale Gesundheitskonzept der Bundesregierung in der akademischen Global Health-Diskussion. W. Bruchhausen (Bonn)

Sy27 Das Globale Gesundheitskonzept der Bundesregierung im internationalen Vergleich. M. Bonk (Berlin)

Sy28 Where is Health in the post-2015 development agenda? C. Beiersmann (Heidelberg)

S 10 NEGLECTED GLOBAL HEALTH ISSUES IN TIMES OF ECONOMIC CRISIS: MENTAL HEALTH AND HEALTH EFFECTS OF VIOLENCE

Raum - Room HS SR 10 13:30 – 15:00

Chair A. Kröger (Genf)

Übersichtsvorträge - Keynote Lectures:

Sy29 Mental Health in a Globalized World. The need of a biopsychosocial approach. P. Scheib (Freiburg)

Sy30 Does the 'Global South' need Psychotherapy? The Asialink project in Vietnam. Scheib P., Wirsching M, Asialink Working Group (Freiburg-Hanoi)

Sy31 Intimate partner violence during pregnancy and associated mental health symptoms among pregnant women in Tanzania: a cross sectional study B. Mahenge (Heidelberg)

Sy32 Medical Peace Work – Educating health professionals in violence prevention and peace work. E.-M. Schwienhorst (Würzburg)

Kurzvortrag - Short Presentation:

OP12 A cross-cultural comparison of climacteric symptoms, help-seeking behaviors and attitude towards menopause between Mosuo women and Han Chinese women. Y.Zhang (Beijing/Freiburg)

Programm - Program

Freitag – Friday, März 14, 2014

S 11 GLOBAL PRIORITIES VERSUS LOCAL NEEDS IN PREVENTION AND CLINICAL CARE

Raum - Room HS SR 10 15:30 – 17:00

Chair **M. Schulze (Göttingen), O. Müller (Heidelberg)**

Übersichtsvorträge - Keynote Lectures:

Sy33 **Fachkräfte in der Entwicklungszusammenarbeit – Der Spagat zwischen globalen Zielsetzungen und lokalen Möglichkeiten. C. Schmidt (Dinslaken)**

Sy34 **WHO-präqualifizierte Laboratorien und staatliche Arzneimittel-Kontrollbehörden zur Sicherstellung einer Versorgung mit essentiellen Medikamenten? L. Höllein (Würzburg)**

Sy35 **Current Challenges to the Expanded Programme of Immunization in Subsaharian Africa. Y. I. Barau (Abuja)**

Sy36 **Tuberkulose-Screening mit dem GeneXpert® – angepasste Technologie für die Tuberkulosediagnostik unter begrenzten Ressourcen? A. Müller (Würzburg)**

S 12 NEGLECTED MYCOBACTERIAL DISEASES

Raum - Room HS SR 10 17:00 – 18:30

Chair **G. Bretzel (München), T. Junghanss (Heidelberg)**

Übersichtsvorträge - Keynote Lectures:

Sy37 **Lepra- neglected or neglectable? O. Bellinger (Würzburg)**

Sy38 **Buruli-ulcer in Togo 2007 – 2013: from surgery to patient support groups J. Nitschke (Würzburg)**

Sy39 **What can Thermotherapy contribute to Buruli Ulcer treatment? M. Vogel (Heidelberg)**

Sy40 **Effectiveness of routine BCG vaccination on Buruli Ulcer Disease: a case-control study in the DR Congo, Ghana and Togo. K.H. Herbinger (München)**

Programm - Program

Freitag – Friday, März 14, 2014

S 13 IMAGING IN REGIONS WITH LIMITED RESOURCES

Raum- Room LIZ SR 1 11:00 – 12:30

Chair **J. Richter (Düsseldorf), A. Müller-Marbach (Düsseldorf),**

Übersichtsvorträge - Keynote Lectures:

Sy41 **An overview on the sonoanatomy of the abdomen. A. Müller-Marbach (Düsseldorf)**

Sy42 **Practical exercise – hands on - how to use an ultrasound machine. A. Müller-Marbach, S. Göbels, M. Breuer, R. Akpata (Düsseldorf)**

Sy43 **Focused ultrasonographic Disease assessment in resource poor settings. J. Richter (Düsseldorf)**

Sy44 **Ultrasonographic images of Tropical Parasitic Diseases. J. Richter (Düsseldorf)**

Sy45 **Chronic hepatitis, cirrhosis, liver cancer and portal hypertension. A. Müller-Marbach (Düsseldorf)**

Kurzvortrag - Short Presentation:

OP13 **Einführung von problemorientierten Ultraschall in der Kinderheilkunde in resourcenarmen Settings wie Mosambik. A. Pfeiffer (Beira)**

S14 GYNAECOLOGY, OBSTETRICS AND IMAGING IN REGIONS WITH LIMITED RESOURCES

Raum- Room LIZ SR 1 13:30 – 15:00

Chair **A. Barth (Bruchsal), J. Wacker (Bruchsal)**

Übersichtsvorträge - Keynote Lectures:

Sy46 **Cesarian Section in Regions with Limited Resources. J. Wacker (Bruchsal)**

Sy47 **Schistosomiasis of the reproductive tract, an overview. J. Richter (Düsseldorf)**

Sy48 **Placental schistosomiasis. B. Schleenvoigt (Jena)**

Sy49 **Course of Mamma Carcinoma in 60 Patients in West-Ethiopia P. Eber (Halle)**

Programm - Program

Freitag – Friday, März 14, 2014

S 15 ULTRASONOGRAPHY IN GYNAECOLOGY AND OBSTETRICS MOTHER CHILD HEALTHCARE

Raum- Room LIZ SR 1 15:30 – 17:00

Chair A. Barth (Bruchsal), P. Eber (Halle)

Sy50 Role of Ultrasonography in Gynaecology and Obstetrics in Regions with limited Resources. A. Barth (Bruchsal)

JUNGE DTG - YOUNG DTG

Raum - Room LIZ SR 1 17:00 – 18:30

Versammlung der jungen Mitglieder der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit (DTG) –

Meeting of the young members of the German Society of Tropical Medicine and International Health

Programm - Program

Freitag – Friday, März 14, 2014

S16 ARBEITSMEDIZINISCHE HERAUSFORDERUNGEN FÜR TROPENMEDIZINER

Raum- Room LIZ SR 2 11:00 – 12:30

Chair **K. Wiesenbacher (Berlin), K.H. Herbinger (München)**

Übersichtsvorträge - Keynote Lectures:

Sy51 **Neue ArbMedVV und ihre Folgen für die G35. K.H. Herbinger (München)"**

Diskussion. Moderation: Klaus Wiesenbacher

Sy52 **Typische gesundheitliche Beschwerden und Anfragen von Dienstreisenden. H. Thiele (Ludwigshafen)**

Diskussion. Moderation: Klaus Wiesenbacher

Sy53 **Notfallevakuierung: Voraussetzungen, Schwierigkeiten und Möglichkeiten. S. Wagner (Eschborn)**

Diskussion. Moderation: Klaus Wiesenbacher

S 17 CLINICAL CASES

Raum- Room LIZ SR 2 13:30 – 15:00

Chair **G.D. Burchard (Hamburg), H. Sudeck (Hamburg)**

OP14-21

Zervikale Lymphknotenschwellung nach Vietnam-Aufenthalt
Sebastian Dieckmann (Berlin)
Ein Vietnamese mit zerebralem Anfallsleiden
Andreas Müller (Würzburg)
Eine Italienerin mit Fieber und linksseitigem Thoraxschmerz
Marija Stojkovic (Heidelberg)
Übelkeit, Erbrechen und Bauchschmerzen nach Spanien-Reise
Stefan Schmiedel (Hamburg)
Husten, Fieber, Exanthem und Gelenkschwellungen nach Ecuador-Urlaub
Irmela Müller-Stöver (Düsseldorf)
Fieber nach Thailand - Aufenthalt
Matthias Frank (Tübingen)
Splenomegalie und Lymphopenie nach Indienaufenthalt*
Dorothea Wiemer*, Hinrich Sudeck (Hamburg)
Zwei Patienten mit chronischen Hautgeschwüren nach Auslandsreise
Arne Kroidl*, Nicole Berens-Riha (München)

*Vorstellung des Falls durch den Erstautor

Programm - Program

Freitag – Friday, März 14, 2014

S18 WILDERNESS MEDICINE

Raum- Room LIZ SR 2 15:30 – 17:00

Chair F. Holst (Marburg), G.D. Burchard (Hamburg)

Übersichtsvorträge - Keynote Lectures:

Sy54 Einführung in die „Wilderness Medicine“ F. Holst (Marburg)

Sy55 Prophylaxe gegen Arthropodenstiche in der Wildnis. H Mehlhorn (Düsseldorf)

Sy56 Medizinische Aspekte beim Wüsten-Trekking. F. Holst (Marburg)

Sy57 Risiko und Akutversorgung von Gifttierunfällen. T. Junghanss (Heidelberg)

S19 INTERNATIONAL COOPERATION

Raum - Room LIZ SR 2 17:00 – 18:30

Chair: I. Müller-Stöver (Düsseldorf) P. Schmitz (Bonn)

Übersichtsvorträge - Keynote Lectures:

Sy58 Médecins sans frontières. NN

Sy59 Medizinische Betreuung und Gründe für Rückführungen bei wwF+EH des DED / der GIZ in den Jahren 2009 – 2012. P Schmitz (Bonn)

Sy60 Akademie für Globale Gesundheit und Entwicklung (AGGE) S. Golembiewski (Tübingen)

Sy61 das ESTHER –Programm. Y. Schoenemann (Eschborn)

Sy62 Versorgung von Soldaten der Bundeswehr bei Auslandseinsätzen. H. Sudeck (Hamburg)

Programm – Program

Samstag – Saturday, März - March 15, 2014

P 2 NON-COMMUNICABLE DISEASES IN POOR COUNTRIES

Raum- Room HS 13A 09:00 – 10:30

Chair G.D. Burchard (Hamburg), H. Sudeck (Hamburg)

P5 Epidemiologic Transition in Developing Countries. F. Mockenhaupt (Berlin)

P6 Neoplastic Diseases in Africa. H. Becher (Heidelberg)

P7 Importance of Psychiatric Diseases in Africa. K. Hoffmann (Reichenau)

AWARD TROPICAL MEDICINE - Verleihung Preis Tropenmedizin der DTG

S 20 HELMINTHIC INFECTIONS - PLATHELMINTHES

Raum- Room HS 13A 11:00 – 12:30

Chair T. Junghanss (Heidelberg), M.C. Holtfreter (Düsseldorf)

Übersichtsvorträge - Keynote Lectures:

Sy63 Imaging in Alveolar and Cystic Echinococcosis: the key to diagnosis and treatment decision, M. Stojkovic (Heidelberg)

Sy64 Centre-based management of Echinococcosis. T. Junghanss (Heidelberg)

Sy65 Anaphylaxis after therapeutic puncture of an echinococcus cyst. J. Richter (Düsseldorf)

Sy66 Drug research in schistosomiasis. M.C. Holtfreter (Düsseldorf)

Sy67 Management of portal hypertension in schistosomiasis. J. Richter (Düsseldorf)

S 21 HELMINTHIC INFECTIONS - NEMATHELMINTHES

Raum- Room HS 13A 13:30 – 15:00

Chair A. Hoerauf (Bonn), S. Walter (Düsseldorf)

Übersichtsvorträge - Keynote Lectures:

Sy68 New developments towards macrofilaricidal drugs. A Hoerauf (Bonn)

Sy69 Intestinal Nematode Infections and schistosomiasis and their relation to HIV infection in Mbeya Region, Tanzania. E. Saathoff (München)

Sy70 Oxantel Pamoate against *T. trichiura* and concomitant soil-transmitted helminths. B. Speich (Basel)

Programm - Program

Samstag – Saturday, März - March 15, 2014

S 22 RETROVIRAL INFECTIONS, VIRAL HEPATITIS & CO-INFECTIONS

Raum- Room HS 13B 11:00 – 12:30

Chair **C. Münk (Düsseldorf), D. Häussinger (Düsseldorf)**

Übersichtsvorträge - Keynote Lectures:

Sy71 **Old and new human and animal retroviral infections – is there a risk that other retroviruses become endemic in humans? C. Münk (Düsseldorf)**

Sy72 **HIV-vaccine development, state of the art and perspectives for highly endemic countries. K Überla (Bochum)**

Sy73 **HBV, HCV, HEV in bats and rodents. F. Drexler (Bonn)**

Sy74 **Gastrointestinal co-infections in HIV-positive patients in a Teaching Hospital in central Ghana. E. Kuffour (Kumasi/Düsseldorf)**

S 23 TROPICAL VIRAL INFECTIONS

Raum- Room HS 13 B 13:30 – 15:00

Chair **T. Jänisch (Heidelberg), C. Drosten (Bonn)**

Übersichtsvorträge - Keynote Lectures:

Sy75 **Dengue – new epidemiologic trends and disease burden. Thomas Jänisch (Heidelberg)**

Sy76 **Mayaro virus & Co. Update imported arboviral infections. J Schmidt-Chanasit (Hamburg)**

Sy77 **from SARS to MERS. C.Drosten (Bonn)**

Programm - Program

Samstag – Saturday, März - March 15, 2014

S 24 NACHWUCHSFÖRDERUNG IN DER GLOBALEN GESUNDHEIT UND TROPENMEDIZIN. BEDARF; SCHWERPUNKTE UND AKTEURE IN DEUTSCHLAND

Raum - Room HS SR 10 11:00 – 12:30

Chair **C. Köhler (Tübingen), R. Klinkott (München)**

Übersichtsvorträge - Keynote Lectures:

Sy78 **Brauchen wir die tropenmedizinische Ausbildung in Deutschland? A. Stich (Würzburg)**

Sy79 **Gibt es genügend Fachkräfte für die Internationale Gesundheitsarbeit? S. Schmitt (München)**

Sy80 **Was lernen die Studierenden über Internationale und Globale Gesundheit? C. Schürmann (Hannover)**

Sy81 **Werden Themen im Bereich der Globalen Gesundheit im neuen Lernzielkatalog der Medizin berücksichtigt? F. Jacobs (München)**

S 25 MIGRATION AND HEALTH

Raum - Room HS SR 10 13:30 – 15:00

Chair **A. Stich (Würzburg), M. Vogel (Heidelberg)**

Übersichtsvorträge - Keynote Lectures:

Sy82 **Migration and the political determinants of health. M. Knipper (Gießen)**

Sy83 **Migrants and health in Germany: barriers to access in a high income country. C. Zöllner (Heidelberg)**

Sy84 **If you don't take a temperature you can't find a fever – the problem of unrecognized infections in children immigrating to Europe from low income countries. M. Vogel (Heidelberg)**

***Kurzvorträge / Short Presentations*:**

OP22 **Assessment of Integrated Disease Surveillance and Response System after two years of Implementation in Northern Ghana. Adokiya MN. (Tamale/Heidelberg) Mueller O (Heidelberg)**

Programm - Program

Samstag – Saturday, März - March 15, 2014

S 26 TROPICAL PEDIATRICS

Raum - Room LIZ SR 1 11:00 – 12:30

Chair **R. Kobbe (Hamburg), E. Maritz (Gaggenau)**

Übersichtsvorträge - Keynote Lectures:

Sy85 **Treating Pediatric Drug-Resistant TB in Tajikistan. C. Höhn (Berlin)**

Sy86 **The influence of Pre-mastication on Blood Borne Virus transmission. E. Maritz (Gaggenau)**

Sy87 **Common infections in Aboriginal children in Australia. A. Hansmann (Bonn)**

***Kurzvorträge / Short Presentations*:**

OP23 **Klinische Symptomkomplexe und mikrobiologische Diagnosen bei Kindern mit Fieber in Ghana. B. Kreuels (Hamburg)**

OP24 **Häufung gastrointestinaler Koinfektionen bei Ghanaischen Kindern mit Diarrhoe. R. Krumkamp (Hamburg)**

OP25 **Prevalence of intestinal protozoa in paediatric patients in a referral hospital in Northern Tanzania. A. Janzen (Würzburg)**

S 27 TROPICAL NEUROLOGY

Raum - Room LIZ SR 1 13:30 – 15:00

Chair **E. Schmutzhard (Innsbruck) Uta Meyding-Lamadé (Frankfurt)**

Übersichtsvorträge - Keynote Lectures:

Sy87 **Parasitic Infections of the CNS. E. Schmutzhard (Innsbruck)**

Sy88 **Meningitis in Subsaharan Africa. E. Schmutzhard (Innsbruck)**

Sy89 **Viral Infections of the CNS: Update and challenge of old and new: Polio, West-Nile-Fever, Japanese Encephalitis and Denguefever. U. Meyding-Lamadé (Frankfurt)**

Programm - Program

Samstag – Saturday, März - March 15, 2014

S 28 NEWS IN TRAVEL AND MIGRATION MEDICINE

Raum- Room LIZ SR2 11:00 – 12:30

Chair: **E. Reisinger (Rostock), T. Löscher (München)**

Übersichtsvorträge - Keynote Lectures:

Sy90 **Mass gatherings - health risks and preventive strategies. R. Steffen (Zürich)**

Sy91 **Vaccination in the immunocompromised Traveler. E. Reisinger (Rostock)**

Sy92 **Dermatological problems in travellers. V. Czaika (Berlin)**

Kurzvorträge / Short Presentations:

OP26 **Severe *Plasmodium knowlesi* infection with multiorgan failure imported from Thailand/Myanmar. M.P. Seilmaier (München)**

OP27 **Hormonal Contraceptive Use and Irritable Bowel Syndrome in Travellers to South- and Southeast Asia. M. Gaile (Tübingen)**

P 3 Plenary VERLEIHUNG DER POSTER- UND VORTRAGSPREISE AWARDS FOR BEST POSTERS AND PRESENTATIONS CLOSING CEREMONY

Raum - Room HS 13A 15:00 – 15:30

Chair **J. Richter (Düsseldorf), T. Junghanss (Heidelberg)**

Poster Ausstellung - Poster exhibition

Poster sollten von Freitag 10.30 Uhr bis Samstag 15.00 Uhr ausgestellt sein.
Die moderierte Poster-Begehung findet am Samstag von 10.30 bis 11.00 Uhr statt. Einer der Autoren sollte in dieser Zeit am Poster anwesend sein.

Posters should be displayed from Friday 10.30 a.m. until Saturday 3.00 p.m.
A moderated poster session will be on Saturday between 10.30 and 11.00 a.m.
One of the authors should be available at the poster during the session.

Preise – Awards

Für die besten Poster und Kurzvorträge werden mit Unterstützung der Firmen GSK, Novartis, sigma-tau und Sanofi-Pasteur-MSD attraktive Preise vergeben:

- Posterpreise für das beste (500 €), das zweitbeste (300 €) und das drittbeste (200 €) Poster.
- Preise für den besten (500 €),zweitbesten (300 €) und drittbesten (200 €) wissenschaftlichen Kurzvortrag.

The best posters and oral short communications will be awarded with attractive prices, supported by GSK, Novartis, sigma-tau und Sanofi Pasteur MSD:

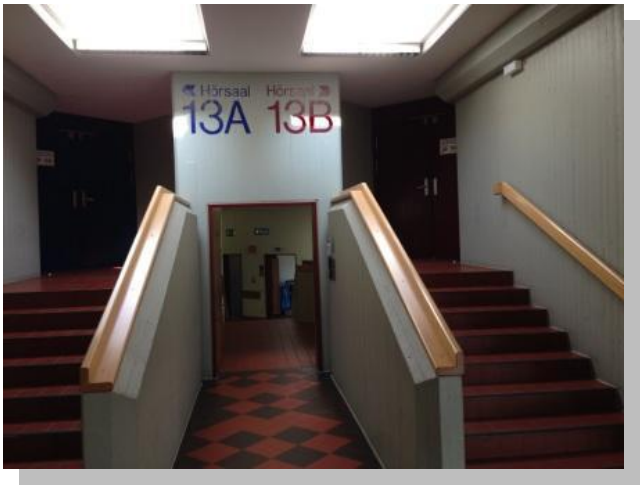
- Award for the best (500 €), second best (300 €), and third best (200 €) poster.
- Award for the best (500 €), second best (300 €), and third best (200 €) oral short communication.

Anmeldung – Registration

ausschließlich / only online via Internet:
www.dtg-jahrestagung.de

Bei der Tagung – at the conference:
Tagungsbüro - registration desk

Tagungsgebühren - Registration fees:



DTG Mitglieder: Gesamttagung: € 190,00 Tageskarte: € 100,00	Nicht DTG Mitglieder: Gesamttagung: € 210,00 Tageskarte: € 120,00	Studenten: Gesamttagung: € 70,00 Tageskarte: € 40,00 Studenten mit DTG-Mitgliedschaft: € 0,00

Zertifizierung – CME credits

Die Tagung wurde bei der Ärztekammer Nordrhein mit 16 Fortbildungspunkten beantragt. (8 Punkte pro Tag). Beim Tagungsbüro liegen Tageslisten aus (bitte einschreiben bzw. Barcode-Etiketten abgeben). Am Ende jeden Tages erhalten Sie ein Fortbildungszertifikat (Punktebescheinigung) beim Tagungsbüro.
16 CME (8 per day) forms are available at the Conference desk

Information für Vortragende – for Speakers

Alle Vorträge sind als Powerpoint-Präsentation mindestens 1 Stunde vor der entsprechenden Sitzung im Medienraum (in der Nähe des Tagungsbüros) abzugeben.

Alle Vortragenden werden gebeten, die vorgegebene Vortragszeit nicht zu überschreiten. Die Aufgabe aller Vorsitzenden von Symposien und Plenarsitzungen ist es, genau auf die Einhaltung der Vortrags- und Diskussionszeiten zu achten und die Sitzungen pünktlich zu beenden.

All oral presentations have to be handed in at the media room (near the conference desk) at least one hour before begin of the respective session.
All speakers have to follow strictly the time frame of their presentation. The task of all chairs of symposia and plenary sessions is to strictly pay attention to the adherence of the time limits, and to finish the sessions in time.

Poster Information

Poster (maximale Grösse 1,10 x 1,40 m bei Hochformat) sollten von Freitag 10.30 Uhr bis Samstag 15.30 Uhr ausgestellt sein (Poster-Ausstellung im Foyer MNR-Hörsaalkomplex – Gebäude 13.55). Die moderierte Poster-Begehung findet am Samstag von 12.30 bis 13.30 Uhr statt. Einer der Autoren sollte in dieser Zeit am Poster anwesend sein.

Posters (maximum size 1.10 x 1.40 meters at upright format) should be displayed from Friday 10.30 a.m. until Saturday 3.30 p.m. (Poster area in the foyer of the MNR-Hörsaalkomplex – Gebäude 13.55, conference centre). A moderated poster session will be on Saturday between 12.30 and 1.30 p.m. One of the authors should be available at the poster during the session.

Industrieausstellung - Exhibition

Information + Registration:
RG Gesellschaft für Information und Organisation mbH
Würmstrasse 55, D-82166 Gräfelfing, Tel.: +49- (0)89 - 89 89 948-112,
Fax: +49- (0)89 - 89 80 99 34, e-mail: info@rg-web.de
homepages: www.dtg-jahrestagung.de

Gesellschaftsabend –

Social event

Freitag - Friday, March 14: ab 20.00 Uhr – from 8.00 p.m. im /at the

Hausbrauerei „Zum Schlüssel“

Bolkerstraße 41-47

40213 Düsseldorf

(in der Altstadt/Fussgängerzone – in the old city/pedestrian zone)

U/S-Bahn - Subway/Speedway Station “Heinrich-Heine-Allee”

Anfahrt
U-Bahn Linien 70, 74, 75, 76, 77, 78, 79 oder
Straßenbahn Linien 703, 706, 712, 713, 715
bis Haltestelle Heinrich-Heine-Allee

Die 103. Jahrestagung der Deutschen Gesellschaft für Tropenmedizin und Internationale Gesundheit (DTG e.V.) wird unterstützt von:

- **Almirall Hermal GmbH**
- **GE Healthcare GmbH**
- **GlaxoSmithKline GmbH & Co. KG**
- **GPK Ges. f. medizinische Prävention und Kommunikation mbH**
- **Innosan GmbH**
- **Medidar GmbH by Tropicare**
- **Novartis Vaccines and Diagnostics GmbH**
- **RIEMSER Pharma GmbH**
- **Sanofi Pasteur MSD GmbH**
- **Sigma-tau Arzneimittel GmbH**
- **Tropical Concept s.a.r.l.**

Offenlegung der Unterstützung mit Stand gemäß erweiterter Transparenzvorgabe des FSA-Kodex Fachkreise (§20 Absatz 5):

Novartis Vaccines and Diagnostics GmbH (1.550), Almirall Hermal GmbH (4.010), GlaxoSmithKline GmbH (1.500), GlaxoSmithKline GmbH (Poster 1.000), Sanofi Pasteur MSD GmbH (2.000)

Sy2 *Tropheryma whipplei* - an emerging pathogen in Africa?

Vinnemeier C [1], Rolling T [1], Cramer J. [2, 1] *Universitätsklinikum Hamburg-Eppendorf, Hamburg, [2] Sektion Tropenmedizin, I. Medizinische Klinik und Poliklinik, Universitätsklinikum Hamburg-Eppendorf, Hamburg*

Tropheryma whipplei (T. whipplei) is known as the aetiologic pathogen of the rare Whipple's disease. Over the last years evidence is growing that *T. whipplei* might be responsible for a wide range of acute and chronic infections including gastroenteritis, endocarditis and septicaemia. T. whipplei is obviously transmitted on the fecal-oral and oral-oral route. Poor hygienic settings facilitate acquisition of the bacteria.
Whereas presence of *T. whipplei* was demonstrated in 4% of stool samples in a European population, studies from the African continent found prevalences of up to 75% in healthy children. On the basis of a literature review we will discuss the role of the emerging pathogen *T. whipplei* in gastroenteritis and implications for further research in Africa

OP1 Burkholderia pseudomallei, the causative agent of melioidosis – a diagnostic challenge

Frickmann H [1], Hagen RM [1] *[1] Bundeswehrkrankenhaus Hamburg, Hamburg*

Introduction Melioidosis is a severe systemic disease caused by Burkholderia pseudomallei, predominantly occuring in South-East Asia and Northern Australia. The causative agent B. pseudomallei is a motile, Gram-negative, non-fermentative rod-shaped bacterium which is phylogenetically closely related with non-motile Burkholderia mallei, the causative agent of glanders, and the saprophytic bacterium Burkholderia thailandensis. Together, those three related species form the B. pseudomallei complex. But not only discrimination within the B. pseudomallei complex is challenging, even the delineation of species of this complex from other Burkholderia species may cause problems particularly for biochemical identification systems, with occasionally dangerous consequences for the patients.
Methods: At our department, molecular procedures for the identification of B. pseudomallei by fluorescence in situ hybridization (FISH) and for the delineation of B. pseudomallei / B. mallei from less pathogenic Burkholderia species by rpsU sequencing were established. Here we present these techniques and discuss them next to alternative molecular and protein-based approaches for the reliable identification of B. pseudomallei as described in literature.
Results: FISH allows for discrimination within the B. pseudomallei complex from colony material. Although it is possible to identify B. pseudomallei in tissue slices as well, the diagnostic sensitivity is, however, poor and the discrimination from autofluorescent tissue elements is challenging. Sequencing of the rpsU gene allows for the delineation of B. pseudomallei / B. mallei from B. thailandensis and other Burkholderia species. However, B. mallei and B. pseudomallei must be discriminated by other methods. Next to several PCRs, sequencing of various genes or gene compositions in multi-locus sequencing approaches has been described for a differentiation within the Burkholderia genus. In addition, protein-based matrix-assisted laser-desorption-ionization time-of-flight mass spectrometry (MALDI-TOS-MS) was evaluated for this purpose as well.
Discussion: Various molecular or protein-based approaches for the identification of B. pseudomallei and its delineation from other Burkholderia species have been described. Most of them are, however, complex and require both skilled laboratory technicians and expensive equipment, making them difficult to apply in resource-limited tropical areas. FISH is an easy-to-perform method, however, it requires prior cultural growth which should be performed under biosafety-level III conditions only. Less-expensive, reliable, and easy-to-perform molecular methods are desirable for the use in the tropics. Preferably, they should be suitable for the detection of B. pseudomallei without prior cultural growth directly from sample material.

OP2 Epidemiology and socio-economic factors of Chagas disease in Bolivian immigrants in Munich, Germany – a pilot study

Berens-Riha N 1, Hohnerlein S 1, von Saldern C 1, Seiringer P 1, Bretzel G 1, Löscher T 1, Strasen J 2, Zoller T 3, Stich A 4, Pritsch M 1 *1 Ludwig-Maximilian-Universität (LMU) München, München, 2 Medizinische Klinik und Poliklinik I Universitätsklinik Würzburg, Würzburg, 3 Charite, Berlin, 4 Missionsärztliche Klinik, Würzburg*
Introduction Chagas disease is caused by the protozoon Trypanosoma cruzi. WHO estimates a prevalence of eight million infected people. About 25-30% will develop symptomatic Chagas disease with potential cardiomyopathy and other complications years to decades after infection. Highly endemic areas are rural areas in Bolivia. The prevalence of chronic infection in immigrated Bolivians in Germany is unknown.
Methods As part of a nation-wide study to come, Bolivians and people with Bolivian background were actively recruited in Munich and surrounding to participate in a cross-sectional survey. Questionnaires about Chagas disease, specific symptoms and socio-economic data as well as blood samples for serology testing were collected. In case of a positive EIA or IFAT, a PCR was perfomed. Qualitative interviews with representative participants were conducted.

Results The study is ongoing, results are preliminary. Out of 26 recruited subjects, two were sero-positive (7.7%). In one of these patients, T. cruzi parasites were molecularly detectable and treatment was offered. None of the patients had symptoms typical for acute or chronic Chagas disease. Although 26.9% knew of relatives with diagnosed Chagas disease, detailed knowledge about the disease was in general rather poor. Motivation of the target population was unexpectedly difficult; participants were mainly female and highly educated. As prescription of the standard medication on a regular basis is impossible, access to treatment is severely impaired.
Conclusion The prevalence so far found is alarming. Assuming that several thousand Bolivians and about 58.000 Latinamericans (estimation from 2009) live in Germany, many undetected chronical infections have to be expected. We faced difficulties in addressing and motivating the target population for getting tested.

OP3 EL CiD - Erkennen und Lenken von Chagaspatienten in Deutschland

Strasen J 1, Wirth M 2, Pritsch M 3, Berens-Riha N 4, Ritter O 5, Stich A 2, Zoller T 6
1 Medizinische Klinik und Poliklinik 1Universitätsklinik Würzburg, Würzburg, 2 Missionsärztliche Klinik, Würzburg
3 LMU München, München, 4 Ludwig-Maximilian-Universität (LMU) München, München, 5 Medizinische Klinik und Poliklinik I Universitätsklinikum Würzburg, Würzburg,6 Charite, Berlin

Einleitung: Die Chagaskrankheit ist in nahezu in ganz Mittel- und Südamerika endemisch. Durch Migration breitet sich die Erkrankung aktuell weltweit aus und wurde deshalb von der WHO als emerging disease eingestuft [1].

Ausgelöst wird die Erkrankung durch den einzelligen eukaryontischen Parasiten Trypanosoma cruzi. Die Erkrankung verläuft in zwei Phasen. Die erste Phase ist hauptsächlich durch unspezifische Symptome, wie Fieber oder Abgeschlagenheit gekennzeichnet. Spezifische Befunde, wie das Romana-Zeichen, sind sehr selten. Nach jahre- bis jahrzehntelanger Latenz kann es zur chronischen Chagas-Krankheit mit Megaösophagus, Megakolon und Kardiomegalie kommen [2]. Die hierdurch verursachte Herzinsuffizienz geht mit einer schlechten Prognose einher [3].
Klassischerweise werden die Parasiten durch blutsaugende Raubwanzen. Dieser Übertragungsweg macht jedoch auch in den Endemiegebieten nur noch 52 - 88% aus [4]. Die Krankheit wird auch ohne den Vektor über Bluttransfusionen, Organtransplantationen oder kongenital von Mutter zu Kind übertragen [5]. In der Latenzphase wissen die meisten der Betroffenen nicht, dass sie erkrankt sind und damit infektiös sind. Hierdurch sind potentiell alle gefährdet, auch wenn sie keinerlei Verbindung zu den Endemiegebieten haben. Nach mehrfachen Infektionen über Blutprodukte werden inzwischen in den USA und in einigen Ländern Europas alle Blutkonserven und Transplantatorgane auf T. cruzi gescreent [6].
In Europa gibt es besonders in Spanien, Portugal und Italien größere Fallzahlen. Jedoch konnten Untersuchungen an lateinamerikanischen Migranten auch in der Schweiz eine Prävalenz von 13% zeigen [7]. Für diverse europäische Länder liegen inzwischen Prävalenzdaten vor [8].
Fragestellung: Für Deutschland gibt es aktuell keine Daten. Das statistische Bundesamt weist für das Jahr 2010 insgesamt 100.000 Migranten aus Mittel- und Südamerika in Deutschland aus [9]. Basierend auf Daten aus den Endemiegebieten und den Migrationsströmen von dort gehen Schätzungen von 750 bis zu 3250 Chagas-Patienten in Deutschland aus [10].
Ziel unserer Initiative ist es Chagas-Patienten finden und zu behandeln. Hierzu wollen wir Blutproben von Lateinamerikanischen Migranten zur serologischen Diagnostik sowie zusätzliche sowohl epidemiologische, wie auch medizinische Daten sammeln.
Methoden: Klassische epidemiologische Methoden sind insbesondere in einem Migrantenkollektiv, nicht sehr effektiv [11]. Um diese Zahlen zu verbessern, werden wir verschiedene zusätzliche Maßnahmen zusätzlich durchführen. Es ist bekannt, dass insbesondere die südamerikanischen Migranten in Europa sehr gut vernetzt sind. Ausgehend von diesen informellen Netzwerken wollen wir in den neuen Medien dreisprachig (deutsch, spanisch, englisch) Informationen zum Thema Chagas-Krankheit anbieten und ausgehend davon zur Blutuntersuchung aufrufen.
Zudem wollen wir in Zusammenarbeit mit dem Deutschen Zentrum für Herzinsuffizienz in Würzburg eine breite Öffentlichkeit erreichen.
Durch das Zusammenwirken dieser verschiedenen Maßnahmen erwarten wir, genügend Proben sammeln zu können, um verlässliche Aussagen über die Situation in Deutschland geben zu können.
Ergebnisse: Der Ethikantrag wird aktuell von der Ethikkommission Würzburg begutachtet. Informationsmaterialien in spanisch, englisch und deutsch wurden erarbeitet. Über die Internetseite www.chagas.info sind weitere Informationen allgemein verfügbar.
Referenzen:
[1] WHO. Control of Chagas disease. Second report of the WHO Expert Committee. Technical report series no 905. Geneva: World Health Organization, 2002
[2] Rassi A Jr, Rassi A, Marin-Neto JA. Chagas disease. Lancet 2010; 375: 1388–402
[3] Rassi A Jr, Rassi A, Rassi SG Predictors of mortality in chronic Chagas disease: a systematic review of observational studies. Circulation 2007 115: 1101-8
[4] Schmunis GA. Epidemiology of Chagas disease in non endemic countries: the role of international migration. Mem. Inst. Oswaldo Cruz 2007 102 suppl.1:75-85
[5] Pérez-López FR, Chedraui P. Chagas disease in pregnancy: a non-endemic problem in a globalized world. Arch Gynecol Obstet 2010 282:595–9
[6] Bern C, Montgomery SP, Katz L, Caglioti S, Stramer SL. Chagas disease and the US blood supply. Curr Opin Infect Dis 2008 21:476–82
[7] Jackson Y, et al. Prevalence, clinical staging and risk for blood-borne transmission of Chagas disease among Latin American migrants in Geneva, Switzerland. PLoS Negl Trop Dis. 2010 4(2):e592

[8] Rassi A Jr, Rassi A, Marin-Neto JA. Chagas disease. Lancet 2010; 375: 1388–402
[9] Statistisches Bundesamt. Bevölkerung und Erwerbstätigkeit. Ausländische Bevölkerung. Ergebnisse des Ausländer Zentralregisters. Statistisches Bundesamt, Wiesbaden April 2012
[10] Strasen J, Williams T, Ertl G, Zoller T, Stich A, Ritter O. Epidemiology of Chagas disease in Europe: many calculations, little knowledge. Clin Res Cardiol. 2014 103(1):1-10.
[11] Schenk L, Neuhauser H. Methodological standards for migrant-sensitive epidemiological research. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. 2005 Mar;48(3):279-86.

OP4 Serological response following re-vaccination with Salmonella typhi Vi capsular polysaccharide vaccines in travellers

Roggelin L[1], Vinnemeier CD[1], Fischer-Herr J[1], Johnson-Weaver B[2], Rolling T[1], Burchard GD[1,3], Staats H[2], Cramer JP[1,3]
1. Section Tropical Medicine, Department of Internal Medicine, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, 2. Department of Pathology, Duke University Medical Center, Durham, USA; 3. Department Clinical Research, Bernhard Nocht Institute of Tropical Medicine, Hamburg, Germany

An injectable Vi capsular polysaccharide vaccine against typhoid fever is available but immunity tends to wane over time. Thus, many industrialized countries recommend revaccination after two or three years if extended protection is needed. The phenomenon of immunotolerance has earlier been described for polysaccharide vaccines such as pneumococcal capsular polysaccharide vaccine and some publications also suggest a possible immunotolerance after revaccination with Vi capsular polysaccharide vaccines. We here report on the titer to Vi antigen up to 5 years after previous vaccination and on serological response following reimmunization with Salmonella typhi Vi capsular polysaccharide vaccines after one or more previous vaccinations. Vaccines administered were Typherix (GlaxoSmithKline), Typhim Vi (Sanofi Pasteur MSD) or Hepatyrix (GlaxoSmithKline). Blood samples were obtained on day 0 prior to vaccination and on day 28 (-1/+14) after vaccination. Serum Vi-Antigen IgG levels were measured by ELISA.
Of the 85 subjects that were included in the per protocol data set, 45 (53%) had been vaccinated with Salmonella typhi Vi capsular polysaccharide vaccines at least once before. The gender distribution and age were comparable between both groups, but only 48% of the subjects from the not pre-vaccinated group compared to 100% of the pre-vaccinated group had been to regions were typhoid fever is endemic within the last 5 years.
Geometric mean antibody levels (GMAL) were significantly higher after vaccination than before vaccination. Prior to vaccination GMVAL were lower in the not pre-vaccinated group than in the pre-vaccinated group, while there was no difference in the post vaccination GMVAL of both groups. Furthermore, there was no difference in the amount of titer increase nor in the proportion of subject with titer increase of four times its initial value or more. In the pre-vaccinated group revaccination was performed after a mean 38.3 months (range 18 to 57 month) and there was a negative correlation between time since last vaccination and GMVAL on day 0.
In conclusion, we did not observe immunotolerance nor a booster effect to the Vi capsular polysaccharide vaccine against typhoid fever in our small study population.

OP5 Fighting Hepatitis B in North Korea. Implementation of a bi-modal prevention strategy in a difficult political setting

Unnewehr M 1, Stich A 2, Kim JH 3, Kim DI 4
1 Klinikum Dortmund gGmbH, Dortmund; 2 Missionsärztliche Klinik, Würzburg; 3 Ministry of Public Health of North Korea, Pyongyang; 4 Pyongyang Hepatitis Prevention Hospital, Pyongyang

Background In North Korea, the prevalence of hepatitis B is very high due to natural factors, gaps in vaccinations and the lack of antiviral treatment. Humanitarian aid projects are urgently needed, however impeded by North Korea's political situation and isolation.
Methods A bi-modal approach was chosen by Caritas International Germany, Medical Mission Institute Würzburg, Germany and the Ministry of Public Health of North Korea. A Hepatitis B vaccination catch-up campaign was set up. The endoscopic ligation of esophageal varices was implemented by trainings in Germany and North Korea.
Results By vaccinating 3,7 million children, the hepatitis B vaccination gap was closed. A coverage of 99,23 % of was reached among the childred enrolled in the programme. A rapid drop of new hepatitis B cases indicates short-term success. 11 young hepatitis B-induced liver cirrhosis patients (mean age 41,1 years) with severe esophageal varices and previous bleedings were successfully treated by endoscopic ligation without major complications. A clinical standard operating procedure, a feedback system and a follow-up plan were developed to maintain the training achievements.
Conclusion The bi-modal preventive strategy was successful. Parts of the project can serve as an example for other low-income countries, however its general transferability is limited due to the special political circumstances in North Korea.

Sy13 TB or not TB: difficulties in the diagnosis of tuberculosis in HIV-negative vs. HIV-positive immigrants to Germany

Hüttig F , Ennemoser K , Singh D , Häussinger D , Richter J. *Klinik für Gastroenterologie, Hepatologie und Infektiologie, Universitätsklinikum Düsseldorf, Heinrich-Heine-Universität Düsseldorf*

93 tuberculosis (TB)-infected immigrants (47 HIV-positive/46 HIV-negative) attended in our Tropical & Infectious Diseases OPD's from 1993 to 2013 were retrospectively analysed for their disease history, disease presentation, delay between first symptoms and TB diagnosis.
Surprisingly, TB was diagnosed more rapidly in HIV-coinfected than in HIV-negative patients (mean 3.0 vs. 7.1 months respectively, $p<0.05$) the delay of TB diagnosis being particularly long in patients with extrapulmonary lymphonodal TB. Whilst in HIV-positive TB-patients the lung was involved in the majority of cases (70.21% [33/47]), this was the case in only 34.78% (16/46) of HIV-negative cases ($p \leq 0.05$). This explains why clinical suspicion, before Tb-diagnosis was achieved, was most frequently a systemic infection (34/47 [72.34%) in the HIV-co-infected and a malignancy (21/46 (45.65%]), namely lymphoma in the HIV-negative TB patients ($p<0,05$). Conversely, TB was the first recognized infection in 66% of the HIV-co-infected patients.
Concluding, TB was more promptly diagnosed in HIV-positive than in HIV-negative patients immigrated to Germany, most likely because these patients presented with a more acute clinical picture and because pulmonary involvement was more frequent in the HIV-positive patient group. Since immigrants with TB frequently present with extrapulmonary manifestations without obvious pulmonary abnormalities routine X-ray is not sufficient to rule out TB.

OP6 Analysis of M.tuberculosis isolates from Lambaréné reveals clonal expansion of an MDR tuberculosis strain in rural Gabon

Bruske E [1], [2], Traoré AN [3], Beckert P [4], [2], Kombila U [3], Alabi A [3], Lay H [5], Frick J [5], Janssen S [6], Lell B [3], [1], Grobusch P [3], [1], [6], Kremsner P [1], [3], Niemann S [4], [2], Rüsch-Gerdes S [2], [7], Frank M [1], [2]
[1] Institute for Tropical Medicine, University of Tübingen, Tübingen, [2] German Center for Infection Research, Borstel Site, Borstel, [3] Centre de Recherches Médicales de Lambaréné (CERMEL), Albert Schweitzer Hospital, Lambaréné, [4] Molecular Mycobacteriology, Research Center Borstel, Borstel, [5] Institute of Medical Microbiology and Hygiene, University of Tuebingen, Tübingen, [6] Academic Medical Center, University of Amsterdam, Amsterdam, [7] National Reference Center for Mycobacteria, Research Center Borstel, Borstel
Over the last decade, the spread of MDR and XDR tuberculosis has been reported from Eastern Europe and Southern Africa. Molecular analysis of drug resistant strains have shown a clonal expansion of drug resistance isolates in these settings. Here we investigate the presence of drug resistance in Mycobacterium tuberculosis strains from Lambaréné, a small town in rural Gabon. Sputum samples from hospitalized patients or prison inmates were phenotypically charaterized for resistance against standard antituberculosis drugs: isoniazid (INH), rifampin (RIF), ethambutol (EMB) and pyrazinamide (PZA). In case of resistance against any of the first line drugs, sensitivities against the second line drugs ethionamid (ETH), ofloxacin (OFX), para-aminobencoic acid (PA), cycloserine (CS), amikacin (AM) were also determined. 29 isolates were sensitive to INH, RIF, ETH and PZA. One isolate was resistant against INH and ETH. A total of 4 isolates were multidrug resistant (MDR). Among the MDR isolates obtained in 2010, two were resistant only against INH and RIF . The two MDR isolates obtained in 2012 were resistant against INH, RIF and EMB. One of these isolates exhibited additional resistance against the second line drug ETH. All isolates were characterized by 24 loci-MIRU VNTR (Mycobacterial Interspersed Repetitive Unit – Variable Number of Tandem Repeat) typing, IS6110 DNA fingerprinting and spoligotyping. Of the 36 isolates, 8 belonged to the Haarlem strain, 8 were Cameroon genotype, 10 isolates were classified as Latin American-Mediterranean, 9 could not be defined and 2 were West African.
Cluster analysis revealed that all MDR TB cases are caused by a MDR strain with identical typing results. These data suggest ongoing recent transmissiopn of an MDR strain over a 2-year period. A review of the epidemiologic data showed that in 2010 two MDR strains were obtained from inmates of the local prison, whereas the MDR strains obtained in 2012 were from patients admitted to a local hospital. Together the data suggest clonal expansion of an MDR Haarlem strain with a stepwise increase of resistance against all baseline tuberculosis drugs. The data highlight the urgent need for the introduction of containment measures against MDR tuberculosis and introduction of second line drug therapy in Gabon.

Sy16 Amebic liver abscess: why females do better than males

Tannich E , Jacobs T , Lotter H. *Bernhard-Nocht-Institut für Tropenmedizin, Hamburg*

Amebic liver abscess (ALA) is the most common extraintestinal manifestation of invasive amoebiasis as more than 99% of Entamoeba histolytica-induced abscesses are located within the liver. The disease is characterized by rapidly evolving, massive tissue destruction due to apoptotic and necrotic desintegration of hepatocytes. In contrast to intestinal amoebiasis, ALA greatly predominates in adult males (>85%) but is rare in females or children. Since humans are the only relevant host for E. histolytica, experimental studies concerning this sexual dimorphism have been hampered by the lack of a suitable animal model. Recent experimental data from a mouse model of ALA have indicated that immuno-competent animals are usually resistant to E. histolytica infection of the liver as this infection induces an early and rapid IFNgamma response by natural killer T (NKT) cells, which finally leads to killing of amoebae by activated macrophages. Specific activation of NKT cells, which are present in considerable amounts within the liver, is induced in a CD1d-restricted manner by an E. histolytica lipopeptidoglycan (EhLPPG), located in large quantities on the surface of amoeba trophozoites. Interestingly, activation of NKT cells and production of IFNgamma by EhLPPG is much weaker in male versus female mice. Thus, killing of amoebae is

incomplete in male mice and results in prolonged persistance of parasites within the tissue. In addition to EhLPPG-triggered innate immune mechanisms, development of ALA is influenced by sex hormones. Transfer of testosteron into female mice and challenge with E. histolytica trophozoites was found to produce large abscesses similar to those seen in male mice and orchiectomy of male mice revelaed small abscesses similar to those of female mice.

Referenzen:
Lotter H, et al.(2006) Sexual dimorphism in the control of amebic liver abscess in immunocompetent mice. Infect Immun. 74, 118-124.
Lotter H, et al. (2009) Natural killer T cells activated by a lipopeptidophosphoglycan from Entamoeba histolytia are critically important to control amebic liver abscess. PLoS Pathog. 5, e1000434
Lotter H, et al. (2013) Testosterone increases susceptibility to amebic liver abscess in mice and mediates inhibition of IFNγ secretion in natural killer T cells. PLoS One. 8:e55694
Helk E,et al. (2013) TNFalpha-mediated liver destruction by Kupffer cells and Ly6Chi monocytes during Entamoeba histolytica infection. PLoS Pathogen 9:e1003096

Sy17 Giardiasis: a reportable but neglected disease in Germany

Aebischer T , Klotz C. *Robert Koch-Institut, Berlin*

Giardiasis is a reportable disease in Germany and 4137 cases fulfilling the case definition were reported in 2013 (http://www3.rki.de/SurvStat/). The age-dependence of the incidence of symptomatic infections with the causative protozoan Giardia duodenalis shows two peaks: One in children below the age of five and one in the group that is 25-40 years old. It is thought that in children the infection is autochthonous while many of the older patients likely have contracted the parasite when travelling. The major source of the autochthonous infections remains unclear although zoonotic reservoirs have been suspected. Patients are treated with nitroimidazoles with metronidazole being the officially approved drug. However, disease in up to one in five patients, in particular amongst the returning travelers, appears to be refractory to treatment. We have initiated a research program that aims at evaluating zoonotic cycles of G. duodenalis in Germany that may relate to autochthonous infections and at elucidating reasons for disease and treatment failure and exploring alternative treatment options. We will report on the current status of this program, tools that we developed and first results that we obtained

Sy18 Helminth infections interfere with vaccination efficacy

Breloer M. *Bernhard-Nocht-Institut für Tropenmedizin, Hamburg*

One third of the human population is infected with parasitic worms. To avoid their elimination, these parasites actively dampen the immune response of their hosts. This immune suppression will also suppress immune responses to third party antigens such as vaccines. Indeed, a negative correlation between pre-existing helminth infections and response to vaccination was reported by several human studies. Here we use Litomosoides sigmodontis-infected BALB/c mice to further analyze this parasite-induced interference with vaccination efficacy. Chronic nematode infection led to complete suppression of humoral response to thymus dependent (TD) vaccination. We provide evidence that the parasite suppressed B cell function indirectly, via accessory T cells, as thymus-independent vaccination was functional, and already numbers and frequency of vaccine-induced follicular T helper cells were reduced. Suppression was induced by fourth stage larvae, immature and mature adults, and increased with duration of infection. Reduced humoral response to TD vaccination depended on the initial presence of living worms, but once established was observed more than 16 weeks after clearance of infection. Employing depletion experiments, we provide evidence that CD4+Foxp3- T cells preserved this suppressive milieu after clearance of the actual nematode infection. In summary our results suggest that vaccination may fail not only in helminth-infected individuals but also in individuals with a history of previous helminth infections

Sy19 Helminth infections and their implication on insulin resistance and autoimmune diabetes

Hübner M , Berbudi A, Ajendra J, Hoerauf A.
Institut für Medizinische Mikrobiologie, Immunologie und Parasitologie, Universitätsklinikum Bonn, Bonn

It is estimated that 382 million people suffer from diabetes worldwide and it is proposed that the number of diabetes patients will exceed 590 million by 2035. Both, the incidence of autoimmune type 1 diabetes and insulin resistance (type 2 diabetes) increased sharply over the last decades. The observed increase in type 2 diabetes incidence in developing countries over the last decades is due to rapid urbanization, nutrition transition, and increasingly sedentary lifestyles. As a result, most cases of insulin resistance occur in developing countries. Environmental changes are also involved in the drastic rise in autoimmune diabetes. Among the environmental changes that may cause this rapid increase of autoimmune diabetes is the reduced prevalence of helminth infections that inversely correlates with the incidence of type 1 diabetes over the same period of time. Thus, autoimmune diabetes is most prominent in developed countries, but is expected to rise in developing countries due to environmental changes and present new challenges for their health care system. Overall, more than three quarters of diabetes cases are present in low and middle income countries and it is estimated that diabetes cases will double in Africa within the next 20 years.

Based on experimental animal studies helminth infections prevent the onset of autoimmune diabetes and ameliorate insulin sensitivity. The helminth mediated protective effect is hereby due to the reduction of autoreactive immune responses that destroy insulin producing β-islet cells during autoimmune diabetes. As inflammatory immune responses are also implemented in the induction of insulin resistance, helminth-induced regulatory, anti-inflammatory immune responses are also proposed to ameliorate insulin sensitivity. Using the filarial nematode Litomosoides sigmodontis, we demonstrated that filarial infection prevents the onset of autoimmune diabetes in NOD mice in a TGFβ dependent manner and improves insulin sensitivity during diet-induced insulin resistance. Importantly, infection with living worms is not required for the protective effect, as filarial antigen administration ameliorates both types of diabetes.

OP8 Mosquito passage of *Plasmodium falciparum* NF54 parasites changes the var gene transcriptional hierarchy from favored transcription of central to telomeric var genes

Dimonte S 1, Bruske E 1, Supan C 1, Held J 1, Tschan S 1, Esen M 1, Lee K 2, Hoffman S 2, Kremsner P 1, 3, Frank M 1
1 Institute of Tropical Medicine, University of Tübingen, Tübingen, Germany, 2 Sanaria, Rockville, USA, 3 Centre de Recherches Médicales de Lambaréné (CERMEL), Albert Schweitzer Hospital, Lambaréné, Gabon

In Plasmodium falciparum (Pf), antigenic variation is mediated by mutually exclusive expression of a single member of the multicopy var gene family. In culture adapted NF54 parasites, var gene transcription follows a hierarchy favoring transcription of centrally located var genes. It is unclear if this epigenetic hierarchy is reset during meiotic division in the mosquito or during schizogony in the human liver. Here we utilize the human infection model to investigate this question. Sanaria produces Pf NF54 sporozoites from a cell bank. Gametocytes of one thaw are fed to mosquitoes to produce one lot of PfNF54 sporozoites. The final product is called PfSPZ Challenge and was used in a controlled human malaria infection trial at the Institute of Tropical Medicine of the University of Tübingen (TÜCHMI-001), designed to determine the PfSPZ dose to consistently infect volunteers. 30 individuals received 50 (n = 3), 200 (n = 3), 800 (n = 9) or 3200 (n = 9) PfSPZ by intravenous injection or 2500 PfSPZ intradermally (n = 6). 21 in vitro cultures were established from infected individuals. The var transcriptional pattern was determined twice per week for 8 weeks with gene specific primers for all NF54 var genes. The NF54 culture used to generate the PfSPZ Challenge lot was cultured by us for 21 generations. var gene transcription in the pre-mosquito NF54 culture was biased towards centrally located var genes. The earliest transcriptional analysis of parasites from human volunteers was 16-18 generations post infection. All analyzed cultures preferentially transcribed a set of telomeric var genes. Locus specific analysis revealed that the telomeric var gene PFB1055c had the strongest transcriptional signal in cultures from multiple individually infected volunteers. Together the data suggest that mosquito passage changes the var gene transcriptional hierarchy from preferred transcription of centrally located var genes towards favored transcription of telomeric var loci.

OP9 Microsatellite genotyping and var gene characterization of Plasmodium falciparum strains to study the inheritance of variant surface antigens

Bruske E 1, Vranjkovic K 1, Volk J 1, Newbold C 2, Otto T 3, Frank M 1 *1 Institute for Tropical Medicine, University of Tübingen, Tübingen, 2 Weatherall Institute of Molecular Medicine, University of Oxford, John Radcliffe Hospital, Oxford 3 Parasite Genomics, Wellcome Trust Sanger Institute, Genome Campus, Hinxton*

In Plasmodium falciparum, PfEMP1 (Plasmodium falciparum membrane protein 1), a surface protein encoded by the var multigene family, mediates cytoadherence of infected red blood cells to host endothelial receptors. P.falciparum harbours 60 different members of the var multigene family. Antigenic variation – a mechanism to avoid the host's immune response - is the result of mutually exclusive expression of one of the 60 var gene loci and switching of the active var gene. The var gene repertoire of different Plasmodium isolates is almost completely distinct, complicating the analysis of var gene inheritance in different parasite strains. Here we evaluate if the combination of microsatellite allele typing together with locus specific var gene PCR can be employed to investigate var gene inheritance in E5, a sibling parasite of the 3D7 genome strain.
We typed the E5 genome with 43 microsatellite sequences and with locus specific primers for the 3D7 var genes as either 3D7 or non-3D7. In a first step, typing was done by Sanger sequencing of PCR fragments and subsequent BLAST analysis against the 3D7 reference genome. In a second step the sequences were mapped against an assembly of E5, generated from Illumina reads. Furthermore, we included 12 E5 specific var DBL sequences in this analysis. Of 43 microsatellite loci, 19 were classified as 3D7 alleles and 18 were classified as non-3D7 by both methods. In the remaining 6 loci, the PCR fragment sequences were different from the Illumina E5 genome sequences. Genome areas that carried 3D7 microsatellites matched with areas that carried 3D7-specific var genes. However, distances between microsatellite alleles and var loci were often several hundred kilobases, precluding an assessment of larger chromosomal areas. To address this question, an E5 vs. 3D7 genome snp map was generated to identify the 3D7 and non-3D7 parts of the genome. This analysis revealed that most 3D7 var genes are surrounded by 3D7 chromosomal areas, i.e. areas with low snp frequency and even Illumina read coverage. In contrast, the E5 specific var sequences mapped to chromosomal areas with high snp density and no read coverage.Of the 57 E5 var fragments that were longer than 3kb, 31 seem to have identical "homologues" in 3D7. Together the data suggest that var gene inheritance follows a Mendellian pattern. We are currently conducting a subanalysis of the 57 var genes in E5 to assess possible var gene specific recombination events.
Our data support the combination of microsatellite and var locus typing as a method to characterize the inheritance of var genes in different Plasmodium falciparum strains.

OP10 Prevalence of malaria parasites in healthy pregnant women in the Madagascan high- and lowlands

Maiga-Ascofaré O 1, Rakotozandrindrainy R 2, Randriamampionona N 2, Hahn A 1, Girmann M 1, May J 1, Schwarz NG 1
1 Bernhard Nocht Institut für Tropenmedizin, Hamburg; 2 Université d'Antananarivo, Antananarivo

Introduction Asymptomatic carriage of malaria parasites is common in adults in malarious regions and provides a reservoir for gametocytes, the infectious forms of the parasite. These asymptomatic carriers may be of particular importance in the highland regions of Madagascar, where malaria may be absent over years, but reappears epidemically, e.g. between 1986-88 with devastating effects on a population with weak immunity.
The objective of our study was
i) to gain information on the prevalence of malarial infection in healthy pregnant women in coastal and highland cities
ii) to assess possible multiplicity of infection in asymptomatic pregnant women
iii) to assess the allelic frequency of drug resistance markers against chloroquine, sulfadoxine and pyrimethamine.
Methods We collected 1242 blood samples from healthy pregnant women from April to July 2010 at six locations. Two sites were directly at the coast at sea level, one at 460 m altitude on the way to the highlands and three in the highlands at 860 m, 920 m and 1280 m altitude. Plasmodium species were detected using a Real-Time PCR. In samples infected by P. falciparum (n=152), the multiplicity of infection (MOI) was evaluated by genotyping different neutral microsatellites. Finally, the prevalence of antimalarial drug resistance markers was determined by PCR-RFLP for chloroquine (pfcrt K76Tand pfmdr1 N86Y), pyrimethamine (pfdhfr N51I, C59R, S108N and I164L) and sulfadoxine (pfdhps A437G and K540E)
Results Although the highest prevalence of P. falciparum infections was found in a coastal city (Manakara, 20.5%), prevalence in the three highland cities was substantial at 7.0% (Ambositra, 1280 m altitude), 10.3% (Tsiroanomandidy, 860 m) and 13.6% (Moramanga, 980 m). The maximum number of different parasite clones detected in one sample was 4. Infected women at the coast had more different clones (mean of MOI=1.50) than those in the Highlands (1.17; p=0.005). The pfdhfr triple mutant, an indicator of pyrimethamine resistance, was detected in Ifanadiana (460 m) and Tsiroanamandy (860 m) at about 20% but not in any of the other locations. The allelic frequency of dhps A437G, involved in sulfadoxine resistance, varied between 25% and 71% between the different locations and the frequency of the mutant was higher at the coast (43.9%) compared to the Highlands (27.4%).
Discussion Our study on healthy pregnant women demonstrates that P. falciparum parasites can be found in resident populations of Madagascan Lowlands and Highlands. Even at 1200 m height above sea level, 7% of the women were P. falciparum positive. This reservoir of circulating parasites in an area where most of the population is lacking immunity (due to lack of exposure) could spark malaria epidemics. Prevalence rates of resistance markers for sulfadoxine-pyrimethamine, used for IPTp in pregnancy, were still low expect for dhps 437G in the Lowland (around 68%).

OP11 Fallbericht: Milzruptur bei Malaria durch *Plasmodium ovale*

Lemmerer R 1, Unger M 1, Werzowa J 2, Forstner C 1, Jalili A 3, Starzengruber P 4, Voßen M 1, Ramharter M 1, Thalhammer F 1

1 Medizinische Universität Wien, AKH Wien, Klinische Abteilung für Infektionen und Tropenmedizin, Universitätsklinik für Innere Medizin I, Wien; 2 Medizinische Universität Wien, AKH Wien, Klinische Abteilung für Nephrologie und Dialyse, Universitätsklinik für Innere Medizin III, Wien; 3 Medizinische Universität Wien, AKH Wien, Klinische Abteilung für Immundermatologie, Universitätsklinik für Dermatologie, Wien; 4 Medizinische Universität Wien, AKH Wien, Klinisches Institut für Krankenhaushygiene, Wien

Malaria stellt nach wie vor eine der wichtigsten parasitären Infektionen weltweit dar. Obwohl die Hauptlast mit über 90% vom tropischen Afrika getragen wird, werden auch in Österreich rund 100 importierte Fälle jährlich gemeldet.
Komplizierte Verläufe von non-falciparum Malaria sind selten, doch sind Milzrupturen vor allem bei Plasmodium (P.) falciparum und P. vivax beschrieben, während für die anderen humanpathogenen Malariaerreger P. ovale, P. malariae und P. knowlesi bisher nur Einzelfälle von Milzruptur beschrieben wurden. Der genaue Mechanismus ist nicht vollständig geklärt, es wird jedoch angenommen, dass es sich um eine Kombination aus Größenzunahme und vaskulärer Okklusion handelt.
Im Folgenden berichten wir über den Fall eines 29-jährigen Briten kaukasischer Herkunft, der sich nach einem arbeitsbedingten mehrwöchigen Kongoaufenthalt Anfang Juni 2012 mit intermittierendem Fieber bis 40,5°C, Kopfschmerz, Schüttelfrost, Nachtschweiß, Ganzkörperschmerz und generalisierter Schwäche präsentierte. Nach mehrfach negativen dicken Tropfen und immunchromatographischem Schnelltest gelang schließlich am 4. Tag mittels dickem Tropfen und Ausstrich der Nachweis von P. ovale und somit die Diagnose einer Malaria tertiana. Bildgebend zeigte sich bereits zu diesem Zeitpunkt eine Splenomegalie.
Unter Monotherapie mit Chloroquin kam es bei steigendem CRP zu zunehmender Thrombopenie. Bei weiterhin positivem Nachweis von Plasmodien kam es schließlich am 6. Tag des Krankenhausaufenthalts zu plötzlich einsetzenden Bauchschmerzen, Hypotension und Hämoglobinabfall. Zur Abklärung wurde neuerlich eine Computertomographie durchgeführt, in welcher eine Milzruptur diagnostiziert und die Indikation zur sofortigen Splenektomie gestellt wurde. Der weitere Verlauf gestaltete sich komplikationslos. Der Patient konnte 5 Tage postoperativ in gutem Allgemeinzustand unter laufender Primaquin-Therapie entlassen werden.

Referenzen:
1. Del Portillo et al. The role of the spleen in malaria. Cell Microbiol. 2012 Mar;14(3):343-55
2. Imbert et al. Pathological rupture of the spleen in malaria: analysis of 55 cases (1958-2008). Travel Med Infect Dis. 2009 May;7(3):147-59

Sy22 Latent stages (dormozoites, hypnozoites, cystozoites, tissue cysts) in Apicomplexa (syn. Sporozoa)

Mehlhorn H. *Department of Parasitology; Heinrich Heine University Düsseldorf*

Most Apicomplexan species (e.g. genera *Eimeria, Isospora*) have a direct life cycle, which runs within one host, which becomes infected by oral uptake of a thick-walled cyst being excreted within the feces. Some species, however, have evolved latent stages within a second type of host (i.e. intermediate host), within in which the parasites stay inside cells without further development (e.g. *Cystoisospora*) or with asexual reproductions, which let grow tissue cysts (e.g. *Sarcocystis, Toxoplasma, Besnoitia, Hammondia, Neospora* etc.) Humans may be involved as final as well as intermediate hosts. The different aspects of pathological and chemotherapeutical effects are presented and discussed.

Sy23 The hypnozoite concept in Malaria

Franken G [1], Richter J [2], Holtfreter MC [2], Labisch A.[1 1] *Institut für Geschichte der Medizin,* [2] *Tropenmedizinische Ambulanz, Klinik für Gastroenterologie, Hepatologie und Infektiologie, Heinrich Heine Universität Düsseldorf*

The reason of malaria relapses in spite of therapy was an important malaria research focus since the beginning of scientific malariology. During the early 80's an American-English research team led by Wojciech Krotoski for the first time detected hypnozoites i.e. quiescent hepatic malaria parasites by using fluorescence microscopy in *Plasmodium (P.) cynomolgi,* a primate plasmodium closely related to *P. vivax.* In liver sections Krotoski et al. were able to identify not only mature schizontes but at the same time mononuclear parasite stadia, which were interpreted as dormant parasites being able to mature into schizonts at a later time. The activation of hypnozoites are since then considered to be the main reason of malarial relapses, the hypnozoite concept having replaced the former hypothesis of a continuously ongoing exo-erythrocytic malaria cycle as source for relapses. There is large evidence that relapses in *P. vivax* infections originate from hypnozoites, whereas it is not clear to what extent this applies to non-vivax *Plasmodium spp.* pathogenic to humans. Furthermore, the morphological development from hypnozoites to mature schizonts has not been fully elucidated until today.

Sy24 Dormancy in Malaria - another view – illustrated by clinical observations

Richter J[1], Holtfreter MC[1], Müller-Stöver I[1], Walter S[2], Mehlhorn H[2], Labisch A[3], Franken G[3]. [1]*Tropenmedizinische Ambulanz, Klinik für Gastroenterologie, Hepatologie und Infektiologie,* [2]*Institut für Parasitologie,* [3]*Institut für Geschichte der Medizin, Heinrich-Heine-Universität Düsseldorf*

A number of apicomplexans (e.g. *Cystoisospora spp., Toxoplasma spp.*) and also other protozoans (e.g. *Trypanosomatidae*) are well known for their abilty to produce recrudescent clinical infections after having been latent for years or even decades after transmission to the host.
In malaria infection, the term relapse has been defined for those recurrences which re-occur several times and which are not prevented by the usual therapy which is active on the intra-erythrocytic development stages. Arbitrarily, a three months threshold for the period between primary attack and recurrence has been chosen by Shute for defining the term relapse. To explain the occurrence of relapses dormant liver forms have been postulated (X bodies by Shute, hypnozoites by Markus). Hepatic hypnozoites have been demonstrated by biological experiments in *Plasmodium spp.* belonging to the clade around *P. vivax (P. cynomolgi, P. simiovale*) only.
Clinically, relapses are defined if their prevention requires an antimalarial acting on hepatic pre-erythrocytic development stages such as primaquin. This has been clinically observed in *P. vivax (P.v.)* infections, and has occasionally been seen in *P. ovale (P.o.)* and *P. malariae (P.m.)* infections.
It is well known that not only *P. vivax* but also *P.o., P.m.* and *P.falciparum (P.f.)* are capable to produce clinical infection many years after transmission. The fact that a recurrence may respond to an antimalarial which is only active on the asexual intraertyhrocytic stages only and that for prevention of further recurrences primaquin is not required does not necessarily mean that the recurrence is not originating from hepatic hypnozoites. It would be equally explained if we assume that only one hypnozoite or hypnozoite population has persisted which has than fully developed into eythrocytic stages when (re-)treatment was undertaken. On the other hand, the assumption that recurrences and long latency infections e.g. in *P. m.* or *P.f.* infections are never due to dormant pre-erythrocytic hepatic forms is not sufficiently supported by biological experiments. Since erythrocytes are characterized by their rapid turn over and mobility and these do not appear to be suitable candidates for permanent reservoirs for latent infections although transmission via blood transfusion support the existence of persisting asymptomatic parasitemia.
We propose an alternative less schematic concept for dormancy in malaria: For some *Plasmodium spp*., especially of the clade around *P. vivax*, hypnozoitism may provide particular evolutionary advantages, i.e. the survival during mosquito-free periods as seen in *P.v.* ("*P.v. hibernans*"). Frequent multiple relapses are seen in *P.v.* Chesson strain infections. Hypnozoitism occurs more rarely in *P.v.* strains other than Chesson strain, where the relapse risk has been estimated to amount to around 50%. *P.v.* species may be defined as characterized by habitual hypnozoitism. Other *Plasmodium spp.* may display hypnozoites unfrequently, such as *P.o., P.m.,* and possibly *P.f.*, an occurrence that we propose to define as occasional hypnozoitism.

Sy26 Das Globale Gesundheitskonzept der Bundesregierung in der akademischen Global Health-Diskussion

Bruchhausen W. *Geschichte, Anthropologie und Ethik der Medizin, Medizinhistorisches Institut, University of Bonn*

Als Teil des internationalen universitären Global Health-Diskurses haben deutsche Vertreter von Global Health in Forschung und Lehre das Globale Gesundheitskonzept der Bundesregierung erwartet, an seiner vorbereitenden Diskussion teilgenommen und es nach seiner Verabschiedung kommentiert. Im Anschluss an die daraus entstandenen Publikationen sollen im Hinblick auf die Themenfelder internationale Verpflichtungen (Menschenrecht auf Gesundheit, EU-Politik u.a. zu Flüchtlingen), interministerielle Kooperation (soziale Determinanten der Gesundheit, Handelsabkommen) und Stärkung der WHO Ausgangspunkte im Konzept und zukünftige Anforderungen analysiert werden. Dabei geht es vor allem darum, die notwendigen Implikationen für Konzeption und Implementierung, die das Konzept selbst so noch nicht anspricht, herauszuarbeiten.

Sy27 Das Globale Gesundheitskonzept der Bundesregierung im internationalen Vergleich

Bonk MB*. Program Director, World Health Summit, Coordinator, M8 Alliance of Academic Health Centres, Universities and National Academies, Charité Universitätsmedizin Berlin*

Die Bundesregierung hat im Juli 2013 ihr erstes Globales Gesundheitskonzept vorgelegt. Die großen Veränderungen im Bereich der Globalen Gesundheit in den vergangenen 20 Jahren mit dem Auftreten vieler neuer Akteure waren ein wesentlicher Grund für die Erarbeitung dieses Konzepts. Andere Länder innerhalb und außerhalb von Europa und auch die Europäische Kommission haben bereits seit einigen Jahren Konzepte bzw. Strategien für ihre bilateralen und multilateralen Aktivitäten im Bereich der globalen Gesundheit vorgelegt und zum Teil bereits weiterentwickelt. Hier zeigen sich neben einigen ähnlichen Ansätzen, auch einige, interessante Unterschiede in der Zielsetzung und der Durchführung der jeweiligen Strategien. Es ist daher auch von Interesse für die Bundesregierung einen Vergleich anzustellen und das eigene Konzept im internationalen Vergleich einzuordnen und zu bewerten. Dieses ist insbesondere auch interessant, da Deutschland einer der größten Beitragszahler von internationalen Institutionen im Bereich der globalen Gesundheit wie z.B. der WHO oder des Globalen Fonds zur Bekämpfung von Aids, Tuberkulose und Malaria ist.

Sy28 Where is Health in the post-2015 development agenda?

Beiersmann C, Jahn A. *Institute of Public Health. University of Heidelberg*

The Millennium Development Goals (MDG) were supposed to be reached by 2015, which is thus regarded as a kind of their “expiry date”. Thus, the debate of new or revised development goals after 2015 is in full swing. There is a vast array of players involved in these discussions, ranging from governments, UN bodies, international and local NGOs, academia, to civil society and further stake holders. But who are the major players shaping this debate? Are there specific proposals already on the table? How do these look like and what are their implications? And what is the relationship between the post-MDG debate and the debate on Sustainable Development Goals as suggested from a more environmentalist perspective through the Rio plus 20 process? The presentation address these questions by giving an overview of the major players and proposals in this debate such as the Global Thematic Consultation on Health, the High Level Panel of Eminent Persons on the MDG post-2015 Development Agenda, as well as the Sustainable Development Solutions Network, and the Open Working Group on Sustainable Development Goals. These concepts will be assessed from a human rights perspective with special reference to the right to health.

Sy31 Intimate partner violence during pregnancy and associated mental health symptoms among pregnant women in Tanzania: a cross-sectional study

Mahenge B, S Likindikoki S, Stoeckl H, Mbwambo J *Institute of Public Health. University of Heidelberg*

Objective Violence against pregnant women is a prevalent issue with severe health implications, especially during pregnancy. This study seeks to determine the prevalence of intimate partner violence against women during pregnancy and its associated mental health symptoms.
Design Cross-sectional survey conducted from December 2011 to April 2012.
Setting Muhimbili National Hospital antenatal clinic in Dar es Salaam, Tanzania.
Sample 1180 pregnant antenatal care patients.
Methods Trained interviewers conducted face-to-face standardised interviews with the women in a private room prior to their antenatal care appointment. (PTSD), anxiety and depressive symptoms were assessed through the Conflict Tactics Scale, the John Hopkins Symptom Checklist (25) and the Posttraumatic Diagnostic Scale.
Main outcome measures The Conflict Tactics Scale, the John Hopkins Symptom Checklist (25) and the Posttraumatic Diagnostic Scale.
Results Of the 1180 women who were interviewed, 27% reported experiencing both physical and sexual intimate partner violence in the index pregnancy, with 18% reporting physical violence and 20% reporting sexual violence. After adjusting for the sociodemographic characteristics of women, women who experienced physical and/or sexual intimate partner violence during pregnancy were significantly more likely to have moderate PTSD (AOR 2.94, 95% CI 1.71–5.06), anxiety (AOR 3.98, 95%

CI 2.85–5.57) and depressive (AOR 3.31, 95% CI 2.39–4.593) symptoms than women who did not report physical and/or sexual intimate partner violence during pregnancy.
Conclusions About three out of ten women experienced physical or sexual intimate partner violence during pregnancy by an intimate partner, which was significantly associated with poor mental health symptoms. These rates are alarming, and justify training and education of antenatal care providers to raise awareness.

OP12 A cross-cultural comparison of climacteric symptoms, help-seeking behaviors and attitude towards menopause between Mosuo women and Han Chinese women

Zhang Y *1 1 Beijing / University of Freiburg, Freiburg*

Objectives Cultural background has been shown to influence climacteric symptoms of women. This study aimed to compare different characteristics of climacteric symptoms, illness perceptions, and attitudes towards menopause of Mosuo women, a Chinese ethnic minority with matriarchal structure, and Han Chinese women, and to explore cultural impact.
Methods Through convenience sampling, 51 Mosuo and 47 Han women aged from 40 to 60 years were enrolled. Respondents completed the social demographic questionnaire, the modified Kupperman Menopause Index, Self-Rating Scale of Illness Conception and Health Seeking Behavior and the Self designed-Menopausal Transition Attitude Scale.
Results Han Chinese and Mosuo women were comparable regarding age, educational level and menopausal state. Mosuo women during the climacteric reported less depressive mood, and the somatic and psychological symptoms were milder [the modified Kupperman Menopause Index: (13.31±6.98) vs.(16.64±8.50), t=-2.12, P=0.036),] than that of Han Chinese women. Mosuo women more tended to believe there is no significant association between individual efforts and rehabilitation and displayed more positive attitudes towards menopause than Han Chinese women did. For all women regardless of ethnicity, correlation analysis and multi linear regression indicated more negative attitudes during climacteric were associated with more severe symptoms.
Conclusion The different symptoms in Mosuo and Han Chinese Women might be related to cultural differences, including differences in familial forms, women's social status, illness conceptions and attitudes towards menopause.

Sy39 What can Thermotherapy contribute to Buruli ulcer Treatment ?

Vogel M. *Uniklinikum Heidelberg, Heidelberg*

Introduction The effects of limited local and systemic hyperthermia have long attracted the attention of medical research and practice. In the case of Buruli ulcer disease heat treatment is expected to inactivate the temperature sensitive pathogen, M. ulcerans, and induce healing of the, at times, very large residual skin defects.
Methods and Findings In two clinical trials in Ayos/Cameroon, laboratory confirmed patients with Buruli ulcer lesions received up to 8 weeks of local thermotherapy using the phase change of sodium acetate trihydrate as heat application system. This substance is widely used in commercial pocket heat pads, it is easy to apply, rechargeable in hot water, non-toxic and non-hazardous to the environment. Heat treatment was well tolerated by all patients including a three year old child. It contributed to wound healing in a problematic hygienic environment by protecting the wound, reducing oedema, inducing hyperemia and necessitating daily change of dressing materials. Current data indicate an effective local inactivation of the causative pathogen.
Conclusion Hyperthermia is a promising treatment alternative for Buruli ulcer Disease combining the required antimycobacterial activity with positive effects on wound healing. This may be particularly useful in a setting with limited diagnostic possibilities, low resources and inadequate hygiene conditions.

Referenzen:
Walsh DS, Portaels F, Meyers WM. Buruli ulcer (Mycobacterium ulcerans infection). Trans R Soc Trop Med Hyg. 2008 Oct;102(10):969-78.
Meyers W, Shelly W, Connor D. Heat treatment of mycobacterium ulcerans infection without surgical excision. American Journal of Tropical Medicine and Hygiene. 1974;23(5):924-9.
Junghanss T, Um Boock A, Vogel M, Schuette D, Weinlaeder H, Pluschke G. Phase change material for thermotherapy of Buruli ulcer: a prospective observational single centre proof-of-principle trial. PLoS Negl Trop Dis. 2009;3(2):e380.
World Health Organization. Global Buruli Ulcer Initiative. Buruli ulcer. Geneva: World Health Organization; 2001.

Sy40 Effectiveness of routine BCG vaccination on Buruli Ulcer Disease: a case-control study in the DR Congo, Ghana and Togo

Herbinger KH [1], Phillips RO [2], Phanzu DM [3], Beissner M [1], Badziklou K [4], Luzolo Ea [3], Sarfo FS [2], Halatoko WA [4], Amoako Y [2], Frimpong M [5], Kabiru AM [6], Piten E [7], Maman I [4], Bidjada B [4], Koba A [4], Awoussi KS [4], Kobara B [8], Nitschke J [1, 9], Wiedemann FX [9], Banla Kere A [4], Adjei O [2], Löscher T [1], Fleischer B [10], Bretzel G. *[1 1] Department of Infectious Diseases and Tropical Medicine (DITM), University Hospital, Ludwig-Maximilians-University, Munich [2] Department of Medicine, School of Medical Sciences, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi [3] Institut Médical Evangélique (IME) de Kimpese, Projet Ulcère de Buruli, Kimpese [4] Institut National d'Hygiène (INH), Ministry of Health, Lomé [5] Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR), Kwame Nkrumah University of Science and Technology (KNUST), Kumasi [6] Agogo Presbyterian Hospital, Agogo, [7] Centre Hospitalier Regional Maritime (CHR Maritime), Tsévié [8] Programme National de*

lutte contre l'Ulcère de Buruli, la Lèpre et le Pian (PNLUB-LP), Lomé [9] German Leprosy and Tuberculosis Relief Association (DAHW), Würzburg,[10] Bernhard Nocht Institute for Tropical Medicine (BNITM), Hamburg

Background After tuberculosis and leprosy, Buruli Ulcer Disease (BUD) is the third most common mycobacterial disease. Bacillus Calmette-Guérin (BCG), an attenuated Mycobacterium bovis live vaccine, is the only available vaccine with a potential protective effect against mycobacterial infections. BCG has been widely used since the first vaccination of humans in 1921. Results on its effectiveness in preventing mycobacterial diseases like leprosy or BUD are partially contradictory. One of the main reasons might be that BCG vaccination is administered with different BCG-strains with variable immunogenicity produced by more than 40 manufacturers worldwide. The aim of this case-control study was to evaluate the possible protective effect of BCG vaccination on BUD.
Methodology The present retrospective case-control study was performed between February 2010 and April 2013 in the Democratic Republic of the Congo, Ghana, and Togo. The study population consisted of 401 laboratory confirmed BUD cases and 826 controls, the BCG status (presence or absence of a typical scar on shoulders or anterior side of the forearm) was known for all study participants. Most controls had a close relationship with the cases, e.g. family members (27.2%) and neighbors (62.7%). In these 3 countries, two different BCG strains are used for immunization since 1980: BCG-Russian (produced by Serum Institute of India and by Bulbio, Bulgaria) and BCG-Japan (produced by Japan BCG Laboratory).
Principal Findings The proportion of males was 44.4% for cases and 46.1% for controls. Most individuals (65.1% of the cases and 55.4% of the controls) were younger than 20 years. Among the cases, 95.5% had single and 4.5% multiple lesions, 58.4% had ulcerative and 41.7% non-ulcerative lesions. After stratification by the three countries and four age groups, only among study participants from Ghana in age group 10-19 years, the proportion of those with BCG scars was significantly ($p = 0.03$) higher among controls (80.5%) than among cases (65.2%). After stratification by the three countries, two sexes and four age groups, the proportion of those with BCG scars was not significantly different, neither between cases and controls nor between cases of category I and of category II/III. Furthermore, no significant correlation between the presence of BCG scars and the duration of BUD or the time to healing of lesions was found.
Conclusions The present study determined the effectiveness of routine BCG vaccination on BUD. Our findings do not suggest any evidence that BCG vaccination reduces effectively the risk to develop BUD in general or to develop severe forms of BUD in particular, neither the duration of BUD nor the time to healing of lesions. Therefore, further research on safe and specific vaccines with effective BCG strains should be supported to determine their ability to reduce risk for BUD in endemic regions.

Sy43 Focused ultrasonographic disease assessment in resource poor settings

Richter J. *Tropenmedizinische Ambulanz, Klinik für Gastroenterologie, Hepatologie und Infektiologie, Heinrich Heine Universität Düsseldorf*

In regions with limited resources ultrasonography (US) has become increasingly available. During the last 25 years, technology has improved image quality and reduced the size and price of US scanners. In these settings the use of US as a tool to rapidly solve defined relevant clinical questions and to guide diagnostic and therapeutic procedures is of particular interest in gynecology and obstetrics, emergency medicine and infectious diseases. However, not rarely, US machines but no skilled sonographist are available. Therefore, the focused use of US is increasingly important: by performing a focused exam the physician does not attempt to obtain a complete status of the whole abdomen but seeks to quickly answer a defined question, e.g. whether or not an ascites is present. This approach is useful also for epidemiological surveys in remote rural areas.. Focused US has been successfully used to identify extrapulmonary tuberculosis (TB) in HIV-infected patients. In sub-Saharan Africa for example, pericardial and unilateral pleural effusion were predominantly caused by TB and highly associated with HIV infection. Morbidity due to cystic echinococcosis and schistosomiasis have been assessed using internationally standardized disease-focused US protocols.
US training should be provided to the health care professional working on the front lines treating patients. This may be the general physician in the district hospital, who often has little or no experience with imaging technology. In the same way as obstetrical US is frequently performed by midwives, other medical professionals like nurses or X-ray technicians and field workers are potential candidates to perform the exams. Focused US courses may pose an alternative approach to increase the availability and utility of US at least for the diagnosis of the most locally prevalent and important conditions. In the advent of increasingly available internet access and faster connections also in geographically remote settings the use of telemedicine solutions should be explored to support US training in areas where direct supervision in scarce or absent. Recommendations, protocols and standards for supervising the focused use of US protocols are being established. Using shorter courses and training more health care workers will make US available to patients who otherwise would not have any access to the benefit provided by this technology.

OP13 Einführung von problemorientierten Ultraschall in der Kinderheilkunde in resourcenarmen Settings wie Mosambik Ein Erfahrungsbericht

Pfeiffer A*. Universidade Catolica de Mocambique, Beira*
Die technische Entwicklung hat dazu geführt, dass in den auch in armen Ländern immer häufiger Ultraschallgeräte zur Verfügung stehen. Bisher beherrschen aber nur wenige Ärzte diese diagnostische Möglichkeit. Point of care Untersuchung sind in der Notfallmedizin Standard, einige konkrete Fragestellung können auch vom noch wenig Geübten beantwortet werden. In den meisten Krankenhäusern in Mosambik stehen weitere diagnostische Möglichkeiten wie Laboruntersuchungen oder andere bildgebende Massnahmen oft nicht, nicht im richtigen Moment oder nur in unzureichender Qualität zur Verfügung.

In der klinischen Praxis sind Dyspnoe sowie Ödeme (mit oder ohne Dyspnoe) häufige Symptome, deren Ursache oft rein klinisch nicht eindeutig zu diagnostizieren ist. Diese diagnostische Unsicherheit führt dazu, dass wichtige therapeutische Interventionen oft nicht oder mit zeitlicher Verzögerung eingeleitet werden, was oftmals die Überlebenschancen einschränkt.
Die Kenntnis des intravaskulären Füllungszustandes beeinflusst wesentlich die Volumengabe beim schwerkranken Kind. Wo eine Messung des zentralvenösen Drucks nicht möglich ist, kann die Beurteilung der unteren Hohlvene und der Kontraktilität des Herzens die Flüssigkeitstherapie deutlich verbessern.
Andere selten lebensbedrohliche Symptome wie Hämaturie und Ikterus sind bei unzureichendem Labor oft schwierig abzuklären und werden daher immer wieder unzureichend behandelt.
Vor diesem Hintergrund wurde ein Trainingsprogramm entwickelt, das Ärzte in begrenzter Zeit dazu befähigt, häufige Ursachen dieser Symptome sonographisch zu diagnostizieren.
Diese fokussierte Ultraschalluntersuchung beinhaltet eine grobe Beurteilung der folgenden Strukturen: Harnblase mit Beurteilung der Präsenz freier Flüssigkeit, Nieren (Echodichte und Mark-Rindendifferenzierung), Leber mit Gallenwegen, Vena cava inferior, Herz (Kontraktilität, Ventrikelgrösse, Perikarderguss) und Lunge (Pleuraerguss, A- und B - Linien, Lungeninfiltrat)
Dieser extrem vereinfachte Ultraschall erlaubt eine schnelle richtungsweisende Untersuchung zur Einordnung des Krankheitsbildes.
Nach vier Theorieeinheiten (Ultraschalltechnik und Artefakte, Sonoanatomie und pädiatrische Besonderheiten, Ultraschall der Lunge sowie Einführung in die problemorientierte, fokussierte Ultraschalluntersuchung) und einer Einheit zur praktischen Handhabung des Ultraschallgeräts sowie Schnittführung werden mindestens acht Untersuchung pro Woche unter Aufsicht durchgeführt. Im Verlauf von zwei Monaten sollen häufige, wichtige Erkrankungen diagnostiziert oder ausgeschlossen werden können.
An Beispielen wird die problemorientierte Vorgehensweise veranschaulicht.
Referenzen:
S Sippel, et al: Review article: Use of ultrasound in the developing world. International Journal of Emergency Medicine 2011, 4:72
Blaivas M et al.: Change in differential diagnosis and patient management with the use of portable ultrasound in a remote setting. Wilderness Environ Med 2005, 16(1):38-41.
Spencer JK, Adler RS: Utility of portable ultrasound in a community in Ghana. J Ultrasound Med 2008, 27(12):1735-1743.
Steinmetz JP, Berger JP: Ultrasonography as an aid to diagnosis and treatment in a rural African hospital: a prospective study of 1,119 cases. Am J Trop Med Hyg 1999, 60(1):119-123.
Sachita Shah, et al: Development of an ultrasound training curriculum in a limited resource international setting: successes and challenges of ultrasound training in rural Rwanda, Int J Emerg Med (2008) 1:193–196
Colin F. Royse, et al: Physician-Performed Ultrasound: The Time Has Come for Routine Use in Acute Care Medicine.Anesth Analg 2012;115:1007–28
Lei Chen, et al: Use of bedside ultrasound to assess degree of dehydration in children with gastroenteritis, Acad Emerg Med. 2010 October ; 17(10): 1042–1047
Marc Feissel et al: The respiratory variation in inferior vena cava diameter as a guide to fluid therapy.Intensive Care Med (2004) 30:1834–1837
J. Matthew Brennan et al: Handcarried Ultrasound Measurement of the Inferior Vena Cava for Assessment of Intravascular Volume Status in the Outpatient Hemodialysis Clinic. Clin J Am Soc Nephrol 2006 1: 749 –753
Eric Piette, Raoul Daoust: Basic concepts in the use of thoracic and lung ultrasound Curr Opin Anesthesiol 2013, 26:20–30

Sy46 **Cesarean Section in Regions with Limited Resources**

Wacker J. *Frauenklinik Bruchsal*

One of the topics of the DTG conference in1989 in Hamburg was the problem of safe delivery by caesarean section in remote rural areas in Africa for fetal indications such as impending asphyxia of the fetus. In the meantime the safety of caesarean section has improved even in district hospitals due to advanced surgical techniques and better training for the surgical support staff.
The rate of caesarean section in subsaharian countries is nevertheless below 5 % and therefore lower than the necessary rate estimated by the WHO or the very high rate in industrialised countries i.e. Germany (>30%). In the following lecture I would like to present 10 suggestions concerning necessary changes in the management of labour in rural district hospitals:

1. Revaluation of clinical and surgical medicine in the developing world
2. Higher wages for doctors, midwives and surgical staff in rural areas
3. Standardization of surgical and obstetric procedures
4. Implementation of standards concerning transfer of labouring women to an obstetric unit
5. Integration of the TBA`s (traditional birth attendands) in the obstetric unit of the hospital
6. Free access to the hospital services for pregnant women, especially for caesarean section.
7. Family planning after caesarean section with special concern to “spacing “
8. Use of a partogram during labour to identify obstructed labour
9. Improvement of the cooperation between doctors and midwives
10. Improvement of the pediatric services and care in the context of caesarean section for fetal indication

Conclusion Technical preconditions in industrialized and developing countries differ widely due to the unequal disparity of wealth. Nevertheless it is possible to achieve similar indications for caesarean section as in Europe and North America by implementation of the above proposed measures. A rate of caesarean section of >30% also needs to be revised if not only because also in industrialized countries financial resources are limited.

Sy47 Schistosomiasis of the reproductive tract, an overview

Richter J, Holtfreter MC. *Tropenmedizinische Ambulanz; Klinik für Gastroenterologie, Hepatologie und Infektiologie, Heinrich-Heine-Universität Düsseldorf*

Schistosomiasis usually affects the intestinal or the urinary tract. Especially in S. haematobium (h.)infections the reproductive tract is frequently involved. In women and girls, especially the lower reproductive tract is involved, pathology including papillomata and ulcerations of vulva, and ulcerations and “sandy patches” occurring in the vagina and cervix uteri. The upper reproductive tract pathology includes uterine masses, salpingitis, pelvic inflammation and vagino-vesical fistula. Clinical consequences include coital discomfort, stigmatisation, psychological stress induced by lesions of the lower reproductive tract inter-preted as an STD, facilitation of the transmission of STD’s, primary or secondary infertility as well as life-threatening complications including acute abdomen and ruptured ectopic pregnancy. In pregnant women, schistosomiasis is a risk factor for low birth weight and prematurity.
Definite diagnosis of schistosomiasis of the reproductive tract is obtained by taking a guided biopsy which is not feasible in endemic regions. Parasitological investigations of urine and stools are negative in up to one fifth of women with genital schistosomiasis. Practical control approaches to estimate the burden of genital schistosomiasis may take advantage of the investigations of men, where genital schistosomiasis can be diagnosed by non-invasive means, i.e. microscopy of the ejaculate. Mass treatment of schistosomiasis in endemic areas should comprise not only children and adolescents but also adults.

Sy48 Placental Schistosomiais in a Thuringian traveler: A case report

Schleenvoigt B [1,2,3], Gajda M [4], Baier M [5], Groten T [6], Oppel-Heuchel H [7], Grimm MO [7], Pfister W [5], Pletz M. [2]
[1] Universitätsklinikum Jena, Jena, [2] Zentrum für Infektionsmedizin und Krankenhaushygiene, Universitätsklinikum Jena, Jena, [3] Institut für medizinische Mikrobiologie, Universitätsklinikum Jena, Jena, [4] Institut für Pathologie, Universitätsklinikum Jena, Jena, [5] Institut für medizinische Mikrobiologie, Universität Jena, Jena [6] Klinik für Gynäkologie und Geburtshilfe, Universität Jena, Jena, [7] Klinik für Urologie, Universität Jena, Jena

We report a case of placental schistosomiais in a Thuringian traveler. The patient presented with painless macrohaematuria in the 21st week of pregnancy. As travel history was unknown transurethral resection was performed to rule out neoplasia. In resection material taken from bladder wall *Schistosoma (S.) haematobium* eggs were detected and the patient was treated with Praziquantel in the 22nd week of pregnancy. After 42nd weeks of gestation and normal vaginal delivery placenta was sent for histopathological investigation. A single *S. haematobium* egg was found in placental material. Placental schistosomiasis was previously described in 1972 by R. Renaud. Since then, to the best of our knowledge, this is the first microscopic evidence confirming the involvement of human placental tissue in infection with *S. haematobium.*

Sy49 Klinischer Verlauf von 61 Frauen mit Mamma-Karzinom in Aira, West-Äthiopien. Eine prospektive Kohortenstudie zum Gesamt-Überleben und klinisch-pathologischen Prognosefaktoren

Eber P [1], Wakuma T [2], Thomssen C [3], Hauptmann S [4], Kantelhardt E [3, 1] *Martin-Luther-Universität Halle-Wittenberg, Halle (Saale), [2] EECMY Aira Hospital, Aira [3] Klinik und Poliklinik für Gynäkologie am Universitätsklinikum Halle (Saale), Halle (Saale), [4] Institut für Pathologie Düren, Düren*

Hintergrund Die Inzidenz des Mamma-Karzinoms, dem weltweit häufigsten Tumor der Frau, steigt in Entwicklungsländern in den letzten Jahren an. Das Mamma-Karzinom bei Frauen afrikanischer Abstammung weist meist aggressivere Subtypen auf und die Sterblichkeit ist größer als bei Frauen kaukasischer Abstammung. Es ist der zweithäufigste maligne Tumor der Frau in Äthiopien. Einzige Therapiemöglichkeit auf dem Land ist die Operation. Eine histologische Untersuchung ist kein Standard. Es gibt aus Äthiopien wenige Daten zur Tumorbiologie und zum Überleben der Patientinnen.
Ziel Ziel ist die Darstellung der absoluten Überlebenswahrscheinlichkeit von Frauen mit histologisch diagnostiziertem Mamma-Karzinom aus dem ländlichen Gebiet West-Wollega, Äthiopien und die Frage, welchen Einfluss klinisch-pathologische Prognosefaktoren auf die Überlebenswahrscheinlichkeit der Patientinnen haben.
Methode Die 61 Patientinnen mit histologisch gesichertem Mamma-Karzinom aus den Krankenhäusern in Aira und Gimbi (2010-2012) wurden nach Datenrecherche im Archiv in ihren Häusern aufgesucht und mithilfe eines Fragebogens befragt und körperlich untersucht. Die Auswertung nach Kaplan-Meier erfolgte mithilfe von SPSS 19.
Ergebnisse (vorläufig): Die mediane Nachbeobachtungszeit betrug (0-37,78) 12,84 Monate, das mediane Alter der Patientinnen 45 (19-83) Jahre. 84% wurden mit einer Mastektomie behandelt (n=51). 5% der Patientinnen kamen im Stadium I, 41% mit Stadium 2 und 54% mit Stadium III der Erkrankung (n=59). Es überwogen mit 69% die schlecht differenzierten Grade 3-Tumoren (n=58). 73% der Patientinnen präsentierten sich nodal-positiv, bei 72% war Ki-67 positiv (n=59). 19% der Patientinnen waren Her2-positiv und der Anteil der Triple-negativen Karzinome lag bei 25%, während 64% der Tumore hormonsensibel waren (n=59).

Die mediane Überlebenswahrscheinlichkeit aller Patienten nach Operation betrug 20 Monate. Im Stage III lag es bei 14 Monate, mit Stage I 30 Monate. Die mediane Überlebenswahrscheinlichkeit in der Gruppe der <35-jährigen betrug 10 Monate, bei den 35-55-jährigen 24 Monate. Bei den Nodal-positiven Patientinnen betrug die mediane Überlebenswahrscheinlichkeit 18 Monate, bei Nodal-negativen 30 Monate. Mediane Überlebenswahrscheinlichkeit bei Triple-negativem Mamma-Karzinom betrug 10 Monate. Die mediane Zeit vom Auftreten der Symptome bis zur Präsentation im Krankenhaus lag bei 12 (0,5-60) Monaten.
Diskussion Die Annahme, dass das Triple-negative Mamma-Karzinom in Ostafrika weniger häufig anzutreffen ist als in West-Afrika, aber häufiger als in Europa, bestätigt sich in unseren Daten. Ebenfalls scheinen Frauen in einem jüngeren Alter zu erkranken. Die Erstvorstellung im Krankenhaus erfolgt, übereinstimmend mit anderen Daten aus Äthiopien, zumeist im fortgeschrittenen Stadium. Anlass zum Nachdenken gibt die sehr kurze Post-OP-Überlebenszeit von medianen 1,6 Jahren, die sogar unter der Überlebenszeit liegt, die bei Frauen mit unbehandeltem Mamma-Karzinom in westlichen Ländern beobachtet wurde (2,3-3,3 Jahre).

Sy51 **Verordnung zur arbeitsmedizinischen Vorsorge (ArbMedVV) und G35**

Herbinger KH, Löscher T. *Abteilung für Infektions- und Tropenmedizin, Ludwig-Maximilians-Universität, München*

Am 31.10.2013 trat die Novellierung der ArbMedVV in Kraft, die u.a. die Ziele verfolgt, Rechte und Eigenverantwortlichkeit der beschäftigten Arbeitnehmer (AN) zu stärken und Rechtsunsicherheiten zu beseitigen. In der Praxis ergeben sich jedoch eine Reihe von Fragen und Problemen bezüglich der „Arbeitsaufenthalte im Ausland unter besonderen klimatischen und gesundheitlichen Belastungen“, worauf sich der berufsgenossenschaftliche Grundsatz „G35“ bezieht.
Nach ArbMedVV hat der Arbeitgeber (AG) für alle Beschäftigten einschließlich der nach der Biostoffverordnung gleichgestellten Personen (Studierende, Praktikanten, u.a.) vor und nach entsprechenden Auslandstätigkeiten eine arbeitsmedizinische Pflichtvorsorge (PV) bei einem Arbeits-, Betriebs- oder Tropenmediziner zu veranlassen. Dies gilt unabhängig von der Aufenthaltsdauer für alle Auslandsaufenthalte, bei denen besondere klimatische und gesundheitliche Belastungen bestehen. Die diesbezügliche Gefährdungsbeurteilung obliegt dem AG, ggf. mit Beratung durch den Arzt.
Die PV umfasst in jedem Fall die Beratung über Gesundheitsrisiken und Gesundheitsschutz sowie ggf. die Durchführung von Präventionsmaßnahmen. Ob vor oder nach der Auslandstätigkeit weitere Untersuchungen erforderlich sind, liegt im Ermessen des die PV durchführenden Arztes. Die Vorgaben des der G35 sind hierbei völlig unverbindlich. Impfungen und andere Präventionsmaßnahmen sowie weiterführende Untersuchungen sind für den AN nicht verpflichtend und können nur mit seinem Einverständnis erfolgen.
Nach erfolgter PV erhält der AG lediglich eine Mitteilung darüber, dass der AN daran teilgenommen hat. Inhalte bzw. Ergebnisse der PV (z.B. Impfungen, Untersuchungsergebnisse) dürfen dem AG nur mit ausdrücklicher Zustimmung des AN mitgeteilt werden. Zudem stellt sich die Frage, wie die vom AG zu übernehmenden Kosten der PV unter Berücksichtigung von Berufs- und Gebührenordnung abgerechnet werden können, ohne dass der AG diese Inhalte erfährt?
Laut ArbMedVV ist der Arzt verpflichtet den AG zu informieren, wenn Defizite im Arbeitsschutz zu erkennen sind und schlägt ihm Maßnahmen des Arbeitsschutzes vor, die in der novellierten ArbMedVV erstmalig die Zustimmung des AN bedürfen. Dies betrifft in der Regel jedoch nicht erhöhte Gesundheitsrisiken, die durch berufliche Tätigkeiten des AN im Ausland begründet sind sondern meist durch allgemeine Gegebenheiten (z.B. tropisches Klima, schlechte hygienische Bedingungen, mangelnde medizinische Versorgung) am Aufenthaltsort. Wenn alle Arbeitsschutzmaßnahmen ausgeschöpft sind und wenn der Arzt aus medizinischen Gründen, die ausschließlich in der Person des AN liegen, einen Tätigkeitswechsel (z.B. Verzicht auf Auslandstätigkeit) für erforderlich hält, kann der Arzt dies dem AG nur vorschlagen, wenn der AN dem einwilligt.
Impfungen sind ebenfalls keine geeignete Arbeitsschutzmaßnahme nach Arbeitsschutzrecht, da es keine Impfpflicht gibt. In der novellierten ArbMedVV wurden die Impfungen als Bestandteil der AV in den Paragrafenteil verlagert. Es stellt sich die Frage ist, was kann der Arzt tun, wenn Impfungen aus formaler oder medizinischer Indikation indiziert sind, der AN diese aber verweigert?
Die ArbMedVV regelt, dass PV und Eignungsuntersuchungen grundsätzlich getrennt durchgeführt werden müssen. Der Nachweis der gesundheitlichen Eignung für berufliche Auslandsaufenthalte mit erhöhten Risiken ist jedoch nicht explizit gesetzlich geregelt. Es stellt sich daher die Frage, inwieweit vom AG Eignungsuntersuchungen bei AN veranlasst werden können, deren Inhalte etwa in Arbeitsverträgen oder Betriebsvereinbarungen verankert sind. Dies würde der Prävention wie der rechtzeitigen Erkennung von Gesundheitsproblemen dienen, die bei Auslandstätigkeiten mit erhöhten Risiken eine erhebliche Rolle spielen können.

Sy63 Centre-based management of Echinococcosis

Junghanss T. *Section Clinical Tropical Medicine, Department of Infectious Diseases, University Hospital, Heidelberg, Germany*

The setting and impact of the Centre for patients with Echinococcosis at Heidelberg University Hospital is presented. ID / TM physicians, radiologists, abdominal and thoracic surgeons, gastroenterologists and parasitologists work closely together to stage patients and to tailor currently available treatment options to the needs of the individual patient.

Sy64 Imaging in Alveolar and Cystic Echinococcosis: the key to diagnosis and treatment decision

***Stojkovic M**, Section Clinical Tropical Medicine, Department Infectious Diseases, University Hospital Heidelberg*

Imaging techniques play a central role in diagnosing and staging Cystic (CE) and Alveolar Echinococcosis (AE). The broad range of differential diagnoses is presented. Advantages and disadvantages of the imaging modalities US, MRI and CT are presented and pitfalls in the interpretation are highlighted.

Sy65 Anaphylactic shock ensuing therapeutic puncture of an Echinococcus cyst

***Richter J.** Tropenmedizinische Ambulanz; Klinik für Gastroenterologie, Hepatologie und Infektiologie; Heinrich-Heine-Universität, Düsseldorf*

Cystic echinococcosis (CE) is a widespread zoonosis. For treating single Echinococcus cysts during the last decades therapeutic puncture of the cyst, aspiration, injection of a scolicide and re-aspiration (PAIR) has been established as a minimal-invasive alternative method to surgery. A recent review on the complications of therapeutic cyst punctures has shown that dangerous complications occur much less frequently than commonly assumed. A case is described where an allergic acute bronchospasm and arterial hypotension led to a life-threatening shock immediately after echinococcus cyst puncture. Fortunately, the situation could be managed by an experienced and well equipped anaesthesiology team. Life threatening allergic phenomena after puncture of echinococcus cysts may occur less frequently than generally assumed; nevertheless, they must be taken into account and precautions must be taken to manage serious adverse events.

Sy71 Old and new human and animal retroviral infections – is there a risk that other retroviruses become endemic in humans?

***Münk C, Häussinger D.** Klinik für Gastroenterologie, Hepatologie und Infektiologie, Heinrich-Heine-Universltät Düsseldorf*

The discovery of HTLV-1 and HIV-1 induced diseases in humans led to intense research focus on human retroviruses, as well as increased interest in their non-human counterparts. It is well known that retroviruses moved from one species to another, but in most cases these were very ancient events. The lentivirus HIV-1 and the delta retrovirus HTLV-1 have close relatives among many old world primates, SIV and STLV respectively. Multiple interspecies transmissions between humans and simians, and between different simian species must have occurred in the past. In present age, humans likely got infected by SIVcpz around 1900/1920 evolving to HIV-1, and by SIVsmm around 1940 generating HIV-2. In addition, only simian foamy retroviruses are detected in a small number of humans as a consequence of dead-end zoonosis. Retroviruses of the gamma retrovirus group such as the Gibbon Ape leukemia virus (GALV) or the Porcine Endogenous Retrovirus (PERV) are not found in humans, despite intensive contact to monkeys and pigs. The retroviral evolution is driven by rare inter-species transmission events and subsequently by cellular factors called dependency- and restriction-factors. We will summarize the current view on the inter-species transmission of ancient and modern retroviruses and discuss the risk of new human retroviruses.

Sy82 Migration and the Political Determinants of Health

***Knipper M.** Institut für Geschichte der Medizin. Justus-Liebig-Universität Gießen*

“Migration” is an essential part of human societies and history. The perception of migration and the definition of “migration status” change over time, according to social, economic and political dynamics. This presentation looks specifically on the political determinants of the health of migrants, combining the perspectives of medical history and medical anthropology.

Sy83 Migrants and health in Germany: barrier to access in a high income country

***C. Zöllner.** Institute of Public Health. University of Heidelberg*

Migrants in Germany theoretically have access to healthcare. The country has ratified several international treaties which recognize the right to health. However a number of national recommendations and rules limit migrants' right to healthcare in Germany. Going to the doctor or to the hospital is consequently not straightforward for the migrant population. In particular, undocumented migrants can risk deportation if they seek treatment in a hospital. Several civil society organizations are therefore involved in migrant-specific projects to ensure a minimum access to healthcare in the country. This presentation will give an overview of the situation of migrants and health in Germany and current solutions in the country-specific context.

Sy84 If you don´t take a temperature you can´t find a fever – The problem of unrecognized infections in children migrating to Europe from low income countries (LICs)

Vogel M. *Uniklinikum Heidelberg, Heidelberg*

Introduction: The published epidemiology of infectious diseases (IDs) and data on the interaction between health services and migrating children from LICs speak in favour of considerable unmet health needs. The IDs diagnosed after arrival pose a risk mainly to the migrant children and their communities and not or to a minor degree to the population of the host country. Materials and Methods: Literature search and assessment of published data Results: Migration from LICs to Europe has increased in the process of globalization. In migrants, including children, WHO data documents a higher prevalence of virtually all IDs in LICs compared to high income countries (HICs). Since the spectrum of IDs in migrants depends on their region of origin, there is no "one size fits all" approach. Access of migrant children to the health system of the receiving HICs may be restricted; and even those entitled to health services consult them less than native citizens. Those consulting the health system often find providers lacking specific training or information resources to adequately address their specific needs. A literature search for terms representing childhood, migration and infectious diseases locate the bulk of research on the topic in „classical" immigration countries such as the USA, Canada and Australia. Here standardized diagnostic approaches are also being tested. European countries constitute important destinations for worldwide migration. Measured by the number and type of publications little attention is being paid to the improvement of health of immigrant children from LICs.
Conclusion: The access to health care of children migrating from LICs to Europe and the ability of health care providers to meet their specific needs are unsatisfactory.

Referenzen:
Health challenges of young travelers visiting friends and relatives compared with those traveling for other purposes. Han P, Yanni E, Jentes ES, Hamer DH, Chen LH, Wilson ME, Macleod WB, Ooi WW, Kogelman L, Karchmer AW, Barnett ED. Pediatr Infect Dis J. 2012 Sep;31(9):915-9.
Vaccination status and prevalence of enteric viruses in internationally adopted children. The case of Parma, Italy. Veronesi L, Virdis R, Bizzoco S, Colucci ME, Affanni P, Paganuzzi F, Riccò M, Capobianco E, Tanzi ML. Acta Biomed. 2011 Dec;82(3):208-13.
Post-arrival health screening in Karen refugees in Australia. Paxton GA, Sangster KJ, Maxwell EL, McBride CR, Drewe RH. PLoS One. 2012;7(5):e38194. doi: 10.1371/journal.pone.0038194. Epub 2012 May 31.

OP22 Assessment of Integrated Disease Surveillance and Response System after two years of Implementation in Northern Ghana

Adokiya MN 1, 2, Mueller O 1 *1 Institute of Public Health, University of Heidelberg, Germany, Heidelberg**,** 2 University for Development Studies, School of Medicine & Health Sciences, Ghana, Tamale,*

Background There are many challenges particularly on data quality, duplication and use of health information for decision making and policy formulation at the sub-national levels of health system in SSA. The integrated disease surveillance and response (IDSR) strategy was designed by the Africa Regional Office for the World Health Organization in 1998 to address these gaps. In 2002, Ghana adopted the strategy. In April 2012, Ghana developed and implemented the District Health Information Management System II (DHIMS2). The objective of this study was to assess the functioning of the system using selected disease examples.
Methods This is an observational study using mixed methods. 24 key informant interviews (6 district/region interviews and 18 health facility interviews) were conducted. IDSR data for 2012 and 2013 were downloaded from the DHIMS2 network for the Kassena Nankana Municipal (KNM), Kassena Nankana West (KNW) district and Upper East Region (UER).
Results:(1) Timeliness improved at the district and regional levels - KNM: 28.57% to 87.30%; KNW: 2.60% to 43.23%; UER: 36.67% to 73.83%; (2) Completeness showed a mixed pattern - KNM: 100.00% to 98.41%; KNW: 59.38% to 100.00%; UER: 97.07% to 98.13%; and (3) Content completeness slightly increased - KNM: 11.13% to 13.53%; KNW: 11.87% to 13.53%; UER: 29.20% to 32.53%. Qualitative interviews revealed challenges such as little interest for disease surveillance, inadequate resources, ill-equipped laboratories, rare supervision and irregularly feedback to health facilities at the sub-national level.
Conclusions DHIMS2 has improved availability of IDSR reports at the sub-national level. There was considerable impact on the timeliness and completeness of IDSR reports, however, the content of the reports were often blank. This needs urgently to be addressed by the health system.

OP23 **Klinische Symptomkomplexe und mikrobiologische Diagnosen bei Kindern mit Fieber in Ghana**

Kreuels B 1, 2, 3, Krumkamp R 1, Sarpong N 4, Gyau K 4, Frank C 1, Jäger A 1, Sothmann P 1, Bosu B 4, Marks F 5, Owusu-Dabo E 4, May J 1, *3 1 Bernhard Nocht Institut für Tropenmedizin, Hamburg, 2 Universitätsklinikum Hamburg-Eppendorf, Hamburg, 3 Deutsches Zentrum für Infektionsforschung (DZIF), Standort Hamburg-Lübeck-Borstel, Hamburg 4 Kumasi Center for Collaborative Research, Kumasi, 5 International Vaccine Institute, Seoul*

Einleitung In vielen afrikanischen Ländern konnte die Malariainzidenz durch erfolgreiche Bekämpfungsmaßnahmen in den letzten Jahren deutlich gesenkt werden. Zunehmend stehen daher andere Infektionserkrankungen bei Kindern im Vordergrund. Um diese zu diagnostizieren, sind häufig aufwändigere Labormethoden notwendig, so dass bislang wenige

Daten zu spezifischen Ursachen vorliegen. Ziel dieser Studie war es, Symptomkomplexe und Infektionserreger bei Kindern mit Fieber in Ghana zu untersuchen.
Methoden Über zwölf Monate (Januar-Dezember 2012) wurden alle Kinder (<15 Jahre), die sich ambulant mit Fieber im St. Michael's Hospital in Pramso (Ghana) vorstellten, rekrutiert. Bei allen Kindern wurde eine strukturierte Anamnese erhoben, sowie ein Differentialblutbild, ein dicker Tropfen und eine Blutkultur angefertigt. Über neun Monate (April-Dezember 2012) wurden zudem Serumproben mittels Zellkultur und PCR auf virale Erreger untersucht und wenn möglich, eine Urinuntersuchung durchgeführt.
Ergebnisse Von insgesamt 2.743 Kindern mit Fieber litten 1.655 (60,3%) gleichzeitig unter Husten, 583 (21,2%) hatten Diarrhoe und 524 (19,2%) hatten ein Exanthem. Insgesamt konnte bei 1.001 Kindern (37,7%) eine Malariaparasitämie nachgewiesen werden. Bei 77 Kindern wurde eine Bakteriämie als mögliche Fieberursache gefunden. Wichtigste Erreger [34 % (n=26) der positiven Kulturen] waren hierbei die nicht-typhoiden Salmonellen, gefolgt von Salmonella enterica serovar Typhi (n=20; 26 %). Eine signifikante Leukozyturie zeigte sich bei 74 Kindern (2,7%). Virale Erreger im Serum wurden bei <1% der Kinder nachgewiesen.
Schlussfolgerungen Unsere Daten zeigen wie erwartet ein häufiges Vorkommen von gastrointestinalen und respiratorischen Infektionen bei Kindern mit Fieber in Ghana. Malariaparasiten sind zwar häufig nachweisbar, allerdings sind viele Fieberfälle nicht auf eine Malaria zurückzuführen. Bei einem erheblichen Anteil der Fieberfälle konnte kein Erreger identifiziert werden, was die Wichtigkeit einer weiteren Verbesserung der diagnostischen Möglichkeiten in afrikanischen Ländern verdeutlicht.

OP24 Häufung gastrointestinaler Koinfektionen bei Ghanaischen Kindern mit Diarrhoe

Krumkamp R 1, 2, Schwarz NG 1, Kreuels B 1, 2, Sarpong N 3, Acquah S 3, Loag W 1, Owusu-Dabo E 3, Tannich E 1, 2, May J 1, 2
1 Bernhard-Nocht-Institut für Tropenmedizin, Hamburg; 2 Deutsches Zentrum für Infektionsforschung, Hamburg; 3 Kumasi Center for Collaborative Research, Kumasi

Hintergrund Gastrointestinale Infektionen sind wichtige Ursachen von Morbidität und Mortalität in Entwicklungsländern. Häufig handelt es sich um multiple Infektionen, mit verschiedenen Viren, Bakterien und Parasiten. Allerdings können gastrointestinale Koinfektionen auch asymptomatisch verlaufen. Wenig ist darüber bekannt ob Infektionserreger das Vorkommen anderer Organismen beeinflussen und ob Koinfektionen das Risiko für eine klinische Symptomatik und die Schwere der Erkrankung verändern.
Methode In den Jahren 2007/2008 wurden für eine krankenhausbasierte Fall-Kontroll Studie Stuhlproben von Kindern (< 13 Jahre) mit und ohne Diarrhoe im ländlichen Ghana gesammelt. Erreger wurden mittels PCR identifiziert. Erreger, die in über 5% der untersuchen Proben vorkamen, wurden in die Analyse eingeschlossen. Um zu untersuchen, ob Koinfektionen häufiger auftreten als statistisch erwartet, wurde mittels eines Risk Ratios (RR) und dem dazugehörigen 95%-Konfidenzintervall (KI) das Auftreten von Erregern mit und ohne einer weiteren Infektion verglichen. Um zu ermitteln, ob Diarrhoe gehäuft bei Koinfektionen auftritt, wurde das „relativ erhöhte Risiko aufgrund einer Interaktion" (RERI: Relative excess risk due to interaction) berechnet.
Ergebnisse 548 (45,7%) Proben von Kindern mit und 651 (54,3%) von Kindern ohne Durchfall wurden in die Studie eingeschlossen. Die am häufigsten beobachteten Erreger waren Giardia lamblia (n=455; 40,0%), Shigella spp. (n=326; 27,2%) und Campylobacter jejuni (n=237; 19,8%). Koinfectionen mit G. lamblia kamen bei folgenden Erregern, im Vergleich zu Infektionen ohne diesen Erreger, häufiger vor: Entamoeba dispar (RR=1,6; KI:1,3-1,9), C. jejuni (RR=1,4; KI: 1,2-1,6) und Norovirus (RR=1,3; KI: 1,0-1,5). Koinfektionen, bei denen häufiger Diarrhoe-Episoden auftraten, waren Rotavirus-G. lamblia-Infektionen (RERI=6,5; KI:-14,3-27,4) und Rotavirus-Shigella spp.-Infektionen (RERI=20,4; KI-39,6-80,4).
Diskussion Die Studie zeigt, dass der verbreitete, aber in endemischen Regionen meist apathogene Erreger G. lamblia mit dem Auftreten von weiteren Pathogenen assoziiert ist. Bei einer Infektion mit Rotavirus besteht ein hohes Risiko für Durchfall, das durch Koinfektionen mit anderen Erregern zusätzlich erhöht wird. Durch das häufige Auftreten von gastrointestinalen Koinfektion sind Interaktionen zwischen Erregern von klinischer Relevanz, was in weiteren größeren Studien untersucht werden sollte

OP25 Prevalence of intestinal protozoa in paediatric patients in a referral hospital in Northern Tanzania

Janzen A 1, Kalluvya S 2, Majinge CM 2, Stich A 1, Kasang C 3, Fuss A 3, Müller A 1 *1 Missionsärztliche Klinik, Würzburg*
2 Bugando Medical Centre, Mwanza, 3 Missionsärztliches Institut, Würzburg
Introduction
Intestinal protozoa contribute to the burden of diarrheal diseases in childhood in low income countries. Among them Entamoeba histolytica is believed to play a significant role as Entamoeba cysts are frequently detected in wet mount faecal preparations. Reliable data based on modern diagnostic tools allowing differentiating between pathogenic and non-pathogenic Entamoeba species are scanty from Tanzania.

Methods A single fresh faecal samples of 154 patients admitted to the paediatric wards of the Bugando Medical Centre, Mwanza, Tanzania, were analyzed for the presence of Giardia intestinalis, Entamoeba species and Cryptosporidia using a commercial immunochromatographic rapid assay (RIDA®Quick Combi). Ethanol-preserved stool samples were analyzed by RT-PCR for Giardia intestinalis, Entamoeba histolytica and Entamoeba dispar according to a protocol based on publications by Verweij et al. (1,2) . For DNA extraction the commercial QIAamp DNA Stool Minikit was used.
The patients were admitted for a variety of symptoms including fever (23%, abdominal pain 9,6%, diarrhea 5,5%, vomiting (8,2%), malnutrition (5,5%), other gastrointestinal symptoms (18,5%), cough (11%), anaemia (14,4%), trauma (24%), malaria (14,4%), other symptoms (41,8%). The patients were therefore likely to reflect the average prevalence of parasitic protozoa in the local paediatric population. The mean age was 4,99 years with a range 1 -14 years. the median age was 4 years.
Results Giardia intestinalis infection was detected in 19 / 154 (12,3%) of the patients by the copro-antigen-ELISA but in 42 /154 (27,3%) by RT-PCR. Only 3 /154 (2%) patients were positive for Entamoeba species and all of them proved to be Entamoeba dispar by RT-PCR. No Entamoeba histolytica infection was detected. 6 / 154 stool samples were tested positive for Cryptosporidia by the copro-antigen rapid test. RT-PCR for cryptosporidia was not performed.

Discussion The most frequent intestinal protozoan parasite was Giardia intestinalis. PCR was more than twice as sensivitive as the copro-antigen EIA for the detection of Giardia. No Entamoeba histolytica infection could be detected. All 3 cases identified by the copro-antigen EIA were E. dispar by RT-PCR. These results correspond to the clinical observation that amoebic liver abscesses are very rare in this region. Cryptosporidia were more prevalent than Entamoeba species in our study population.

Referenzen:
1. Real-time PCR for the detection of Giardia lamblia. Verweij JJ, Schinkel J, Laeijendecker D, van Rooyen MA, van Lieshout L, Polderman AM. Mol Cell Probes. 2003 Oct;17(5):223-5.
2. Short communication: Prevalence of Entamoeba histolytica and Entamoeba dispar in northern Ghana.
Verweij JJ, Oostvogel F, Brienen EA, Nang-Beifubah A, Ziem J, Polderman AM. Trop Med Int Health. 2003 Dec;8(12):1153-6.

OP26 Severe *Plasmodium knowlesi* infection imported from Thailand/Myanmar with multiorgan failure

Seilmaier M 1, Hartmann W 2, Berens-Riha N 3, Fenzl T 1, Guggemos W 1, Hesse J 1, Beissner M 3, Harle A 3, Bretzel G 3, Müller G 1, Sack S 1, Wendtner C 1, Löscher T 3
1 Klinikum Schwabing, München; 2 Klinikum Schwabing, München; 3 Department of Infectious Diseases and Tropical Medicine (DITM), University Hospital, Ludwig-Maximilians-University, Munich, München

We describe a severe case of imported Plasmodium knowlesi infection in a 73 year-old German traveller. The patient had been travelling through Myanmar bordering Thailand and Southern Thailand for three weeks in November to December 2013. Delayed presentation of the patient was most likely responsible for a parasitaemia of 3% with severe complications. Microscopy showed different parasite stages including band forms resembling P. malariae parasites. Due to the severe clinical condition and high parasitaemia, P. knowlesie was suspected and the patient was treated with quinine IV in combination with doxycycline. Parasitaemia was cleared rapidly but the renal function deteriorated resulting in intermittent haemodialysis. P. knowlesi mono-infection was later molecularly confirmed.

OP27 Hormonal Contraceptive Use and Irritable Bowel Syndrome in Travellers to South- and Southeast Asia

Gaile M, Nurjadi D, Gabor J, Kremsner P, Zanger P. *Institut für Tropenmedizin, Tübingen*

Background: Irritable bowel syndrome (IBS) is a sequel of travellers' diarrhoea and a common reason for post-travel consultations. Overrepresentation of young women among these patients suggests a role of gonadal hormones. We analysed clinical trial data for an association of sex and hormonal contraceptive (HC) use with incident IBS in returning travellers.
Methods: This study analysis risk factors for new-onset IBS six months after return from abroad - a predefined secondary outcome measure from a randomized, placebo-controlled trial on the preventive use of rifaximin (NTC00979056). Travellers to south or southeast Asia for 6 to 28 days were randomly assigned to 2 x 200 mg rifaximin or placebo per day and completed questions on enteric morbidity every 12 hours while abroad. Irritable bowel syndrome was assessed at enrolment and six months after return using ROME III criteria. Information on HC was collected at baseline. Stools of subjects with chronic gastrointestinal complaints six months after return were examined for parasitic infections. Multivariable logistic regression analysis was used to adjust for a potential effect of the intervention and to assess for confounding. Robust standard errors were used in multiple events per subject analyses.
Results: Of 258 subjects enrolled into the clinical trial, 19 did not return a diary, 9 did not provide a second IBS questionnaire and 24 participants had IBS at baseline and were thus excluded from the analysis. Among the remaining 206 subjects, 16 (7.8%) reported symptoms consistent with new-onset irritable bowel syndrome six months after return. 14 of these 16 individuals provided a stool sample none of which revealed protozoa. As published earlier [1], random allocation to the rifaximin or placebo group while abroad did not have an effect on incident IBS (OR 0.8, 95% CI 0.3-2.3), but was nevertheless adjusted for in all of the analyses of IBS.
Enteric symptoms abroad and IBS: Subjects suffering from IBS six months after return had reported more days of severe diarrhoea (2.2 vs. 0.9, P=0.07), abdominal pain (5.9 vs. 2.9, P=0.01), bloating 4.3 vs. 2.4, P=0.08), and obstipation (1.3 vs. 0.4, P=0.08) during the preceding journey. The risk of post-travel IBS increased with intensity (mild, moderate, severe) of diarrheal episodes abroad (OR 3.7, 1.2-19.4, P=0.02).
HC use and enteric symptoms abroad: Women using HC at baseline reported more days of diarrhoea (5.4 vs. 3.6, P=0.04), severe diarrhoea (2.2 vs. 0.4, P=0.07), and severe gastrointestinal events (2.8 vs. 0.5, P=0.007) when compared to women not taking HC.
Gender, HC use and IBS: Incident IBS was more common among women compared to men (OR 7.9, 1.8-35.9, P=0.007), among women taking HC compared to men (OR 12.3, 2.6-57.9, P=0.001) and among women using HC compared to women not taking this medication (OR 3.6, 0.9-13.7, P=0.07). Adjusting for differences in age provided only a partial explanation of the associations of gender, HC use and IBS.
Conclusions: These findings suggest a role of female gonadal hormones in the pathogenesis of post-infectious irritable bowel syndrome, potentially through altering diarrhoea experience abroad.
Referenzen:
[1] Zanger P, et al. (2013) Effectiveness of rifaximin in prevention of diarrhoea in individuals travelling to south and southeast Asia: a randomised, double-blind, placebo-controlled, phase 3 trial. Lancet Infect Dis.;13:946-5

S4 HIV AND CO-INFECTIONS

Po1 The effect of HIV on Lymphatic Filariasis

Kroidl I 1, 2, Clowes P 3, Maganga L 2, Maboko L 2, Makunde W 4, Hörauf A 5, Löscher T 1, Hölscher M 1, 2, 6, Saathoff E 1, 6 *1 LMU München, 2 National Institute of Medical Research–Mbeya Medical Research Center, Mbeya,3 National Institute for Medical Research -Mbeya Medical Research Center, Mbeya, 4 National Institute of Medical Research–Tanga Medical Research Center, Tanga, 5 Department of Microbiology, Immunology and Parasitology, University of Bonn, Bonn, 6 German Center for Infection Research (DZIF), München*

Background Co-infections of Lymphatic filariasis (LF) and HIV are seen in several countries, however the influence of HIV on the debilitating manifestations of LF, such as elephantiasis and hydrocele, have not been widely studied.
Objectives: Comparison of LF prevalence, filarial worm burden, response to LF treatment and development of chronic pathologies in HIV positive and negative individuals in a cohort in South-Tanzania.
Methods From 2006 to 2011, a population based survey was conducted in the Mbeya Region, Tanzania. In 2009 and 2011, before and after two treatment rounds with ivermectin and albendazole, 1052 sera were tested with TropBio® Og4C3 ELISA, which detects circulating filarial antigen (CFA), HIV status was determined with SD-Bioline strip test and confirmed with ELISA.
Results In 2009, CFA was detected in 41.6 % of participants aged 15 to 94 years; the HIV prevalence was 15.9%. CFA prevalence was similar in HIV negative and HIV positive individuals, 41% versus 42%, respectively, as was the mean level of CFA, demonstrating similar worm burden in both subgroups. After two years of treatment the prevalence dropped significantly ($p<0.05$) to 32% in HIV negative and 31% in HIV positive individuals. Development of elephantiasis occurred in 16 (3.2%) of HIV negative and 2 (1.6%) of HIV positive participants (RR=1.83, 95%CI= 0.54 to 6.22). Hydrocele was found exclusively in HIV negative individuals, with a prevalence of 1%. Cytokine measurement in unstimulated PBMC demonstrated a higher level of IL-17 in LF- infected individuals with elephantiasis, compared to LF- infected, but clinically healthy individuals.
Conclusions HIV-infection does not influence LF prevalence, worm burden or treatment success. Chronic pathologies (CP) might develop less often in HIV infected individuals. Together with the more "aggressive" cytokine –profile in patients with CP, this could suggest a role of the host immune system in the development of LF sequelae.

Po2 High prevalence of cervical cancer and high grade squamous intraepithelial lesions (HSIL) in HIV infected and non-infected women from Mbeya, Tanzania

Kroidl A 1, 2, Lennemann T 1, 3, Mcharo R 3, Torres L 4, Nsojo A 3, Mwabusila J 3, Kowuor D 3, Rwegoshora F 4, Bauer A 1, 3, Chachage M 3, Mwinuka N 3, Hölscher M 1, 2, Geldmacher C 1, 2, Maboko L 3 *1 Department of Infectious Diseases and Tropical Medicine, Medical Center of the University of Munich (LMU), München, 2 German Center for Infection Research (DZIF), partner site Munich, 3 NIMR-Mbeya Medical Research Centre (MMRC), Mbeya, 4 Mbeya Referral Hospital (MRH), Mbeya*

Background Cervical cancer (CC) is the most frequent cancer in women from sub-Saharan Africa caused by persistent infection with high risk Human Papilloma Virus (HR-HPV) types. HIV infection is linked to a 9-fold increased incidence for CC and persisting infection with multiple HR-HPV types. In the era of Highly Active Antiretroviral Therapy (HAART), little is known about the influence of HIV and HAART on HPV-specific immune response. In Africa CC screening is scaled out by visual inspection with acetic acid (VIA) for cervical lesion identification and cryotherapy where indicated. Cytological or virological diagnostics is not commonly available. Increased identification of high risk lesions or CC imposes challenges for patient management.
Methods The 2H study is an ongoing prospective case-control study in HIV+ve and HIV-ve females attending CC Screening in Mbeya, Tanzania. Objectives are to describe concordance of different screening methods (VIA, cytology, virology), the prevalence of HR-HPV types in relation to High grade Squamous Intraepithelial Lesions (HSIL)/CC (cases) versus Low grade Squamous Intraepithelial Lesions (LSIL) /normal cytological findings (controls) and the influence of HIV and HAART on HPV-specific immune response.
Results Out of so far 158 screened woman, 82 (52%) HIV positive with 79% on antiretroviral treatment, HSIL/CC was overall detected in 17 (10.8%), LSIL in 5 (3.2%), and cervicitis in 29 (18.4%) cases. The prevalence of HSIL/CC in HIV positive patients was 8.5% (mean age 44 years, mean CD4 count 441 cells/µl), the prevalence in HIV negative patients was 13.2% (mean age 52 years). Macroscopic suspicion of cancer or VIA positivity identified HSIL/CC in 9/17 (53%) cases and missed HSIL/CC diagnosis in 3 (18%) cases, with remaining cases of equivocal findings finally confirmed by cytology/histology. HR-HPV 16, 18 or 45 was detected in 11/15 (73%) patients with HSIL/CC. In univariate analysis older age was associated with a greater risk of HSIL/CC (RR 1.08, p=<0.001), however, this was not seen for other known risk factors (age of first sexual intercourse, HIV infection, current or nadir CD4 count). First immunological and updated clinical data will be presented.

Conclusions: In this ongoing study first results show a high prevalence of HSIL/CC detected in Tanzanian women at higher ages, however, prevalence rates are not greater in HIV infected as compared to not infected patients and seem not to be related to severe immunosuppression. The frequent HR-HPV types linked to HSIL/CC are mainly those described from other regions of the world.

S5 TUBERCULOSIS

Po3 Comparison of the diagnostic use of MTB LAM-ELISA and LAM strip tests in Childhood Tuberculosis

Kroidl I 1, 2, Clowes P 3, Mtafya B 4, Rojas-Ponce G 4, Ntinginya N 4, Maboko L 4, Kalomo M 5, Reither K 6, 7, Löscher T 1, Saathoff E 1, 8, Hölscher M 1, 9, 8, Rachow A 1, 8 1 LMU München, München, 2 National Institute of Medical Research–Mbeya Medical Research Center, Mbeya, 3 National Institute for Medical Research -Mbeya Medical Research Center, Mbeya, 4 National Institute of Medical Research–Mbeya Medical Research Programme, Tanzania, Mbeya, 5 Mbeya Referral Hospital, Paediatric Department, Mbeya, 6 University of Basel, Basel, 7 Swiss Tropical and Public Health Insitute, Basel, 8 German Center for Infection Research (DZIF), München, 9 National Institute for Medical Research–Mbeya Medical Research Center, Mbeya

Background/Objectives Diagnosis of tuberculosis is usually established by the detection of mycobacteria through smear microscopy or culture. Both methods rely on the presence of mycobacteria in the sample. Due to the paucibacillary nature of the disease in children, detection of acid-fast bacilli often fails and diagnosis can be difficult. Lipoarabinomannan, a cell wall component of mycobacteria, is released into the urine of TB patients. Advantages of LAM detection in urine include the ease of sample collection and test performance, especially when using the new lateral strip test. In this study we compared the diagnostic performance of the MTB-LAM-ELISA and the new LAM lateral strip test in children with suspected tuberculosis.
Methods In a prospective study with a follow-up of at least 12 months, 133 TB suspected children were enrolled and subsequently assigned to predefined diagnostic subgroups, based on microbiological and clinical findings. Sensitivity and specificity of the MTB-LAM-ELISA and the LAM strip test at time of diagnosis were assessed in comparison to mycobacterial culture and/or clinical TB diagnosis as reference standard.
Results. Sputum culture confirmed the diagnosis of tuberculosis in 18 (13.5%) of 133 children. The LAM-ELISA detected 8 (44%, 95% confidence interval (CI): 21.5-69.2%), the LAM-Strip 5 (28%, 95% CI: 9.7%–53.5%) of these cases on the first day of the study. The sensitivity of both tests was higher in HIV positive compared to HIV negative children, with 70% (7/10) (95%CI:34.8-93.3) versus 13% (1/8) (95%CI: 0.3%-48.2%) for the LAM-ELISA and 50% (5/10) (95%CI:18.7-81.3) versus 0% (0/8) (95%CI: 0.0%-33.6%) for the LAM strip test, respectively. In terms of specificity, no child where TB could be reliably excluded had a positive LAM test.
Conclusion In this paediatric cohort both tests demonstrated an acceptable sensitivity in HIV positive TB infected children. For HIV negative children, the sensitivity was extremely poor. The MTB-LAM-ELISA detected considerably more TB cases than the easier to use LAM strip test.

Po4 Diagnostic value of Interferon-gamma release assays in Childhood Tuberculosis

Kroidl I 1, 2, Podola L 2, Clowes P 3, Geldmacher C 1, 4, Ntinginya N 5, Kalomo M 6, Rachow A 1, 4, Reither K 7, Hölscher M 1, 4, 8, Maboko L 9, Löscher T 1, Saathoff E 1, Kroidl A 1, 4 *1 LMU München, 2 National Institute of Medical Research–Mbeya Medical Research Center, Mbeya, 3 National Institute for Medical Research - Mbeya Medical Research Center, Mbeya, 4 German Center for Infection Research (DZIF), München, 5 National Institute of Medical Research–Mbeya Medical Research Programme, Mbeya, 6 Mbeya Referral Hospital, Paediatric Department, Mbeya, 7 University of Basel, Basel, 8 National Institute for Medical Research-Mbeya Medical Research Center, Mbeya, 9 National Institute of Medical Research–Mbeya Medical Research Programme, Tanzania, Mbeya*

Background Interferon-gamma release assays (IGRA) are used to detect latent or active tuberculosis infection, measuring immune responses against Mycobacterium tuberculosis specific antigens. However, in patient groups where the direct detection of acid-fast bacilli in sputum often fails, such as children or HIV infected individuals, the use of these methods might contribute to a more timely diagnosis of TB.
Methods Sensitivity and specificity of Quantiferon-TBC-Gold and an in-house-TB-ELISPOT were evaluated in a prospective study with a minimum follow-up of 12 months. 157 children aged six month to 13 years with suspected tuberculosis were assigned to predefined diagnostic subgroups, based on microbiological and clinical findings.
Results Sputum culture confirmed the diagnosis of tuberculosis in 25 (15.9%) of 157 children. The Quantiferon-TBC-Gold detected 20 (80.0%),(95% confidence interval (CI): 65.1%–97.1%), the ELISPOT 19 (78.8%),(95% CI: 59.7%–94.8%) of these cases on the first day of the study. The sensitivity of Quantiferon-TBC-Gold was higher in HIV negative compared to HIV positive children, with 90% (95%CI: 55.5-99.7) versus 69% (95%CI: 38.6-90.9) respectively. For 23 cases tuberculosis could be reliably excluded and the TST was negative Quantiferon-TBC-Gold tested positive in none of the children of this group, the ELISPOT tested positive only once. In the group of 63 children with possible TB, 10 children, who improved without mycobacterial treatment showed a positive Quantiferon-TBC-Gold. This would be defined as “latent TB”. For the Quantiferon-TBC-Gold, indeterminate results were more often seen in HIV positive than in HIV negative children, 12.4 % versus 3.9 % respectively (RR 3.2 (95% CI 0.9-11.3). Indeterminate results were associated with mortality, as 28.6 % of

children with indeterminate results at presentation died, but only 8.7% of children with valid IGRA-results (RR 3.4, 95% CI 1.2-9.8)($p<0.05$), which was mainly explained by the HIV-positive status.
Conclusions. Both IGRAs demonstrated a good sensitivity in paediatric patients assigned to clearly defined clinical groups. Specificity is difficult to calculate, when latent TB cannot be excluded. Indeterminate results of immune biomarkers such as IGRAs should be monitored carefully as they are associated with enhanced mortality and a valid result could contribute to a more timely diagnosis and treatment of TB.

S6 HOST – PARASITE INTERACTIONS

Po5 Effect of antihelminthic treatment on immune responses to seasonal influenza vaccine in geohelminth-infected individuals

Brückner S 1, Adnandji MS 2, Berberich S 3, Bache E 3, Fernandes J 3, Schweiger B 4, Loembe M 3, Engleitner T 1, Agenika A 3, Kremsner P 1, Esen M 1
1 Institut für Tropenmedizin, Tübingen, 2 Centre de Recherche Medicale de Lambaréné (CERMEL), Lambaréné
3 Centre de Recherche Medicale de Lambaréné (CERMEL), 4 Robert Koch Insitut, Berlin

Infection with helminthes is considered as a neglected tropical disease and is a major public health problem especially in the tropics. The influence on cognitive and physical development as well as on the immune system is tremendous. Recent studies showed that individuals infected with helminthes have a reduced antibody response to vaccination. To confirm this we conducted a placebo-controlled double-blind trial in Lambaréné, Gabon from January 2012 to November 2012. One hundred and four schoolchildren aged 6-10 were enrolled. All participants were vaccinated with the seasonal influenza vaccine (season 2011/2012), which is not part of the Gabonese expanded program on immunisation (EPI). Four weeks after a single-dose antihelminthic treatment (albendazole 400mg) children were vaccinated. Haemagglutination- (HA-) titer against the three vaccine strains, were assessed by haemagglutination inhibition at d0 (baseline), d28 and d84. Additionally differences in the development of memory-B-cells represented by antibody secreting cells (ASC) at d0 and d84 were assessed by B-cell ELISpot assay established for this vaccine. We could show that HA- titers and ASC increased significantly following the vaccination in both groups.

S8 MALARIA

Po6 Molecular markers of antimalarial drug resistance in southern Ethiopia over time: regional surveillance from 2004 to 2013

Heuchert A 1, Abduselam N 2, Zeynudin A 2, Eshetu T 2, Löscher T 1, Wieser A 3, Pritsch M 1, Berens-Riha N 1
1 Department of Infectious Diseases and Tropical Medicine (DITM), University Hospital, Ludwig-Maximilians-University, Munich, 2 Jimma University, Jimma, 3 Max-von-Pettenkofer-Institut, Munich

Background Drug resistance is one of the main reasons of antimalarial treatment failures and impedes malaria containment strategies. As single nucleotide polymorphisms (SNPs) have been found to correlate with antimalarial drug resistance, the surveillance strategy includes continuous monitoring of known molecular markers and detection of new mutation patterns. With the introduction of artemisinine-based combination therapy (ACT), selection of specific patterns have been observed world-wide.
Methods From March to June 2013, whole blood was collected on filter paper from 338 microscopically malaria positive patients in Jimma area, southern Ethiopia. Plasmodium falciparum, P. vivax and mixed infections were included. SNPs were investigated by conventional or real-time PCR, restriction fragment length pattern (RFLP) analysis or sequencing. Results were compared to molecular patterns from Ethiopian isolates in 2004, 2006 and 2008/9.
Results In P. falciparum, mutations in the pfcrt, pfmdr and Ca(2+)-ATPase (SERCA) gene were investigated. Whereas the mutation in the pfcrt gene at codon 76K was still found in 100.0% of all samples (mixed infection included), the pfmdr1 86T mutations fell to 1.2% (2/163) in 2013 compared to 9% in 2008/9 and 86% in 2006. The pfmdr1 184F mutation dominated with 100.0% (172/172) in 2013. The SERCA 431K mutation dropped from 58.3% in 2006 to 33.3% in 2009 and 18.8% (9/48) in 2013.
First sequencing data of the pvmdr gene from Ethiopia revealed a prevalence of the mutations 976F and 1076L in72.7% (16/23) and 100.0% (19/19), respectively. Sequencing of the recently reported PF3D7_1343700 kelch propeller domain ('K13-propeller') is underway.
Conclusion Since the introduction of artemether-lumefantrine (AL) in Jimma, Ethiopia, in 2006, the prevalence of SNPs associated with these drugs has increased. Continuous molecular and clinical surveillance is of paramount importance.

Po7 Evidence for significant influence of host immunity on changes in differential blood count during malaria

Berens-Riha N 1, Kroidl I 1, Schunk M 1, Alberer M 1, Beissner M 1, Pritsch M 1, Kroidl A 1, Fröschl G 1, Hanus I 1, Bretzel G 1, von Sonnenburg F 1, Nothdurft HD 1, Löscher T 1, Herbinger KH 1
1 Department of Infectious Diseases and Tropical Medicine (DITM), University Hospital, Ludwig-Maximilians-University, Munich

Background Malaria has been shown to change blood counts. Recently, a few studies have investigated the alteration of the peripheral blood monocyte-to-lymphocyte count ratio (MLCR) and the neutrophil-to-lymphocyte count ratio (NLCR) during infection with Plasmodium falciparum. Based on these findings this study investigates the predictive values of blood count alterations during malaria across different sub-populations.
Methods Cases and controls, who were admitted to the Department of Infectious Diseases and Tropical Medicine from January 2000 through December 2010, were included in this comparative analysis. Blood count values and other variables at admission controlled for age, gender and immune status were statistically investigated.
Results The study population comprised 210 malaria patients, infected with P. falciparum (68%), P. vivax (21%), P. ovale (7%) and P. malariae (4%), and 210 controls. A positive correlation of parasite density with NLCR and neutrophil counts, and a negative correlation of parasite density with thrombocyte, leucocyte and lymphocyte counts were found. The MLCR discriminated best between malaria cases and controls ($P < .001$), whereas the neutrophil-to-monocyte count ratio (NMCR) reliably predicted severe malaria. However, an interaction with semi-immunity was observed; ratios were significantly different in semi-immune compared to non-immune patients ($P < .001$).
Conclusion Malaria causes typical alterations of the differential blood count, whereas these changes were less pronounced in patients with semi-immunity. The ratios might constitute easily and generally applicable surrogate biomarkers for immunity.

S11 GLOBAL HEALTH

Po8 Innovative Online Library for Global Health and Humanitarian Relief

Butenop J, Maider S, *Missionsärztliches Institut Würzburg, Würzburg*

Health workers active in global health and humanitarian assistance around the world can act effectively if they have access to the necessary tools. The lack of access to such tools costs lives, as was proven in various scientific investigations, cumulating in the following observation: “It is a shameful fact that […] people are still dying because their healthcare workers don’t have access to the information they need”. This is even more valid in situations of crisis or catastrophe, when chaos prevails and real-time access to technical information is vital. MEDBOX aims at closing this gap by collating quality, open-access, practical documents such as clinical guidelines, assessment checklists or textbooks on one homepage. The challenge is to better apply what we know already by allowing easy access to what is available. In addition, MEDBOX generates innovative generic checklists and survey tools for humanitarian practitioners for all aspects of work. These tools can be adjusted to any given setting and tailored for specific needs. With the provision of specialized toolboxes such as the Cholera Toolbox or the Typhoon Haiyan Toolbox, MEDBOX allows real-time access for humanitarian practitioners to operationally relevant practical tools. With most disasters happening without international attention, the direct access through MEDBOX will improve the quality of health action especially at local/national levels. The vision is to contribute to quality patient care, increased efficiency, standardisation and accountability of health action in humanitarian work, and enhance quality assurance, capacity building and learning especially on local or national level.

Referenzen:
The PLoS Medicine Editors (2013): Focusing the Spotlight on Lack of Access to Health Information. PLoS Med 10(4): e1001438. doi:10.1371/journal.pmed.1001438
Barbour V (2011): HIFA2015 Conference: lack of access to healthcare information is lethal. Blog, URL: http://blogs.plos.org/speakingofmedicine/2011/05/12/hifa2015-conference-lack-of-access-to-healthcare-information-is-lethal/
www.pakresponse.info and www.haiti.humanitarianresponse.info
Wardlaw T et al. Pneumonia: the leading killer of children. Lancet 2006;368:1048-50.
UNICEF. State of the World’s Children 2012. URL: http://www.unicef.org/sowc2012/pdfs/SOWC%202012-Main%20Report_EN_13Mar2012.pdf
Nolan T et al. Quality of hospital care for seriously ill children in less-developed countries. Lancet 2001;357(9250):106-10
Health Information for All by 2015, URL: http://www.hifa2015.org/
Pang T, Gray M, Evans T (2006). A 15th grand challenge for global public health. The Lancet, 367(9507), 284-286
Kersten R et al. (2013): Too complicated for the field? Measuring quality of care in humanitarian aid settings. Global health action
Pakenham-Walsh N, Bukachi F (2009): Information needs of health care workers in developing countries: a literature review with a focus on Africa. Hum Res Health, 7:30 doi:10.1186/1478-4491-7-30

S12 NEGLECTED MYCOBACTERIAL INFECTIONS

Po9 Treatment Outcome of BUD Patients in Togo – a Pilot Study

Arens N [1], Piten E [2], Wiedemann F [3], Gadah D [4], Badziklou K [5], Beissner M [1], Amekuse K [3], Maman I [5], Helfrich K [1], Bidjada B [5], Kobara B [6], Banla Kere A [5], Löscher T [1], Bretzel G [1], Nitschke J [1, 3] *[1] Department of Infectious Diseases & Tropical Medicine (DITM), University Hospital, Ludwig-Maximilians-University, Munich, Germany.[2] Centre Hospitalier Regional Maritime (CHR Maritime), Tsévié, Togo, [3] German Leprosy and Tuberculosis Relief Association – Togo office (DAHWT), Lomé, Togo, [4] Handicap International, Lomé, Togo.[5] Institut National d'Hygiène (INH), Ministère de la Santé, Lomé, Togo.[6] Programme National de lutte contre l'Ulcère de Buruli, la Lèpre et le Pian (PNLUB-LP), Lomé, Togo.*

Background Buruli ulcer disease (BUD) caused by Mycobacterium ulcerans involves the skin, adipose tissue and sometimes the bone. If left untreated severe functional limitations may occur due to extensive fibrous scarring leading to joint contractures. Standardized antimycobacterial treatment consists of rifampicin (RMP) and streptomycin for eight weeks; oral regimens combining RMP and clarithromycin are currently under evaluation by the WHO. Several studies on treatment outcome of BUD patients were conducted in West Africa suggesting up to 25% of BUD patients with functional limitation hampering daily activities following surgical and/or antimycobacterial treatment. Data on treatment outcome from Togolese BUD patients however were lacking. Therefore, a pilot project on post-treatment follow-up of BUD patients was conducted by DAHWT and DITM from October 2012 through May 2013 in region Maritime.
Methodology/Principal Findings Following the design of study forms and ICFs in line with WHO and previous study forms, and approval of the National Buruli Ulcer Control Programme (PNLUB-LP), 20 field trips to 56 villages and 29 USPs in five districts (Zio, Yoto, Ave, Vo, Golfe) of region "Maritime" were undertaken by a study team consisting of staff from DAHWT, DITM and CHR Tsévié. Out of 177 laboratory confirmed patients eligible for the study (inclusion criterion: more than six months elapsed since completion of treatment), 109 patients (61.6%) could be retrieved in USPs or their home villages respectively for clinical examination. Whereas the lesions of 88 out of these 109 patients (80.7%) were completely healed without any complications, 21 patients (19.3%) had healing disorders: 14 patients (12.8%) presented with various degrees of functional limitations (grade I, n=8; grade II, n=3 and grade III, n=3; one patient with a secondary lesion [0.9%] and one patient with a secondary and multiple lesions [0.9%]), seven patients (6.5%) had a prolonged healing process up to 26 months due to secondary (n=4 [3.7%]) and multiple lesions (n=3 [2.8%]) without functional limitations. Patients with disabilities were subjected to further diagnostic procedures to identify adequate treatment options. Microbiological analysis of clinical samples from patients with secondary lesions did not reveal M. ulcerans DNA in any of the lesions, Staphylococcus aureus was isolated from two patients (one of them MRSA), in four cases the etiology of secondary lesions remained unclear.
Conclusion/Significance Based on the findings of this study the implementation of standardized, regular post-treatment, short- and long-term follow-up programmes for BUD patients in collaboration with PNLUB-LP are envisaged under the supervision of DAHWT. These procedures would allow early detection of various forms of complications of BUD and timely medical, surgical or physiotherapeutical interventions to prevent long-term sequelae at the highest possible extent for individual BUD patients.

Referenzen:
Schunk M, Thompson W, Klutse E, Nitschke J, Opare-Asamoah K, Thompson R, et al. (2009) Outcome of Patients with Buruli Ulcer after Surgical Treatment with or without Antimycobacterial Treatment in Ghana. Am. J. Trop. Med. Hyg., 81(1), pp. 75–81
Kibadi K, Boelaert M, Fraga AG, Kayinua M, Longatto-Filho A, et al. (2010) Response to treatment in a prospective cohort of patients with large ulcerated lesions suspected to be Buruli Ulcer (Mycobacterium ulcerans disease). PLoS Negl Trop Dis. 6;4(7):e736.
Phanzu DM, Suykerbuyk P, Imposo DB, Lukanu PN, Minuku JB, Lehman LF, et al. (2011) Effect of a control project on clinical profiles and outcomes in buruli ulcer: a before/after study in Bas-Congo, Democratic Republic of Congo. PLoS Negl Trop Dis. 5(12):e1402.
Ackumey MM, Kwakye-Maclean C, Ampadu EO, de Savigny D, Weiss MG. (2011) Health services for Buruli ulcer control: lessons from a field study in Ghana. PLoS Negl Trop Dis. 5(6):e1187.
Agbenorku P, Donwi IK, Kuadzi P, Saunderson P. (2012) Buruli ulcer: treatment challenges at three centres in Ghana. J Trop Med. 371915.

Po10 Application of Molecular Tools for the Identification of Silent Transmitters of Leprosy in Togo

Bauer M [1], Wöstemeier A [1], Amekuse K [2], Hegnion K [3], Maman I [4], Amedifou C [2], Mengele C [1], Helfrich K [1], Wagner M [1], Kobara B [3], Wiedemann F [2], Halatoko WA [4], Badziklou K [4], Banla Kere A [4], Löscher T [1], Bretzel G [1], Beissner M [1] *[1] Department of Infectious Diseases & Tropical Medicine (DITM), University Hospital, Ludwig-Maximilians-University, Munich, Germany, [2] German Leprosy and Tuberculosis Relief Association – Togo office (DAHWT), Lomé, Togo, [3] Programme National de lutte contre l'Ulcère de Buruli, la Lèpre et le Pian (PNLUB-LP), Lomé, Togo,[4] Institut National d'Hygiène (INH), Ministère de la Santé, Lomé, Togo.*

Background With more than 230.000 reported new cases per year leprosy still represents a considerable challenge for health systems in more than 90 countries worldwide. While the pathogenesis has not yet been completely elucidated, transmission of the causative pathogen, Mycobacterium leprae, is considered to mainly occur by nasal droplet infection from human-to-human. Only an estimated 5% of infected persons develop clinical signs of leprosy. Untreated leprosy patients with active disease therefore merely represent the peak of the iceberg in the chain of infection, whereas asymptomatic, infected household contacts (HHC) of patients by far constitute the largest reservoir of transmission ("silent transmitters"). Therefore, recent expert recommendations suggest a three-pillar strategy to curb the incidence of leprosy, consisting of early diagnosis and treatment of patients, tracing and preventive treatment of close contacts, as well as strict disease surveillance. Accordingly, the objective of this study was to evaluate novel molecular tools for the identification and discrimination of infected/non-infected leprosy contacts enabling targeted interventions towards enhanced leprosy control in Togo.
Methodology/Principal Findings Following development of standard operating procedures and project-specific clinical research forms comprising routine documentation parameters as recommended by the WHO, training workshops on case finding, recruitment and sample collection were conducted by DAHWT in Togo. Nasal swabs of clinically suspected MB patients were subjected to diagnostic M. leprae DNA-specific RLEP qPCR and M. leprae RNA-specific 16S rRNA RT-qPCR, and 16 laboratory confirmed patients (14 harboring viable M. leprae) were recruited as index cases. Subsequently nasal swabs of 135 corresponding household contacts (max. 11 HHC per case) were subjected to RLEP qPCR and the RNA assay. Seven HHC (5.2%) carried M. leprae on their nasal mucosa, in one HHC also the RNA assay was positive. For the other six DNA positive HHC RNA extraction and reverse transcription were verified by positive GAPDH qPCR results; the number of detected genome equivalents however was below the limit of detection of the RNA assay. HHC who carried M. leprae were clinically monitored by leprosy controller teams. One of the RLEP qPCR positive HHC progressed to clinical leprosy and antimycobacterial chemotherapy was administered without any delay.
Significance/Conclusion This study is the first approach employing DNA- and RNA-based molecular assays for the identification of silent transmitters in an African setting. For altogether 6/16 (37.5%) index cases secondary infections among HHC were detected. Although the number of index cases and corresponding contact persons included in this pilot study is low, our results suggest a strong correlation between bacillary load of index cases and likelihood to transmit the disease, thus allowing prioritization of screening procedures and adequate allocation of resources. Laboratory confirmation of clinically suspected leprosy patients and screening of HHC including application of molecular diagnostic tests are envisaged to become part of routine leprosy control activities in Togo.

Referenzen:
Scollard DM, Adams LB, Gillis TP, Krahenbuhl JL, Truman RW, and Williams DL. (2006) The Continuing Challenges of Leprosy. Clin Microbiol Recv. p. 338–381 Vol. 19, No. 2
Martinez AN, Lahiri R, Pittman TL, Scollard D, Truman R, Moraes MO, et al. (2009) Molecular determination of Mycobacterium leprae viability by use of real-time PCR. J Clin Microbiol. 47(7):2124-30.
Martins A, Miranda A, de Oliveira M, Bührer-Sékula S, Martinez A. (2010) Nasal mucosa study of leprosy contacts with positive serology for the phenolic glycolipid 1 antigen. Braz J Otorhinolaryngol. 76(5):579-87.
Martinez AN, Ribeiro-Alves M, Sarno EN, Moraes MO. (2011). Evaluation of qPCR-based assays for leprosy diagnosis directly in clinical specimens. PLoS Negl Trop Dis. 5(10):e1354.
Beissner M, Symank D, Phillips RO, Amoako YA, Awua-Boateng NY, Sarfo FS, et al. (2012) Detection of viable Mycobacterium ulcerans in clinical samples by a novel combined 16S rRNA reverse transcriptase/IS2404 real-time qPCR assay, PLoS Negl Trop Dis.;6(8)

Po11 Application of Molecular Tools for the Laboratory Confirmation of Leprosy – A pilot study from Togo

Wöstemeier A 1, Amekuse K 2, Bauer M 1, Maman I 3, Hegnion K 4, Wagner M 1, Helfrich K 1, Mengele C 1, Wiedemann F 2, Badziklou K 3, Kobara B 4, Banla Kere A 3, Löscher T 1, Bretzel G 1, Beissner M 1

1 Department of Infectious Diseases and Tropical Medicine (DITM), University Hospital, Ludwig-Maximilians-University, Munich, Germany.
2 German Leprosy and Tuberculosis Relief Association – Togo office (DAHWT), Lomé, Togo.
3 Institut National d'Hygiène (INH), Ministère de la Santé, Lomé, Togo.
4 Programme National de lutte contre l'Ulcère de Buruli, la Lèpre et le Pian (PNLUB-LP), Lomé, Togo
Background: Leprosy, caused by Mycobacterium leprae, is an infectious disease of the skin and the nerves and still represents a considerable challenge for health systems in more than 90 countries. Diagnostic laboratory tests are available but hardly used in endemic countries, and clinical diagnosis distinguishing between paucibacillary (PB-) and multibacillary (MB) leprosy is considered sufficient to initiate multi-drug treatment. Transmission of M. leprae mainly occurs by nasal droplets from human-to-human through untreated patients and asymptomatic, infected household contacts (HHC). In accordance with current expert recommendations for enhanced disease control suggesting strict disease surveillance, early case detection and treatment, as well as screening and treatment of HHC, the objective of this study was to establish a combination of molecular assays to confirm leprosy cases and to identify carriers of viable M. leprae among untreated patients and their HHC in endemic areas.
Methodology/Principal Findings: Following development of standard operating procedures and project-specific clinical research forms, a novel system for active case finding was introduced in Togo by DAHWT accompanied by extensive training measures. A M. leprae DNA detection test (RLEP qPCR) and a RNA-based viability assay (16S rRNA RT-qPCR) for the analysis of swab samples from nasal and buccal mucosa were developed and validated at DITM. The analytical sensitivities of the RLEP

qPCR and the 16S rRNA RT-qPCR assays were determined as lower limit of detection (0.1 and 3 genome equivalents, respectively), both tests were 100% M. leprae specific. Out of 49 clinically diagnosed MB (n=45) and PB (n=4) patients, 34 MB patients (75.6%) were laboratory confirmed by RLEP qPCR. The 16S rRNA RT-qPCR proved the presence of viable M. leprae in nasal swab samples of 15 out of the 34 laboratory confirmed MB patients (44.1%). These carriers of viable M. leprae were recruited as index cases for a concurrent pilot study on identification of silent transmitters of leprosy among household contacts. Analysis of the diagnostic RLEP qPCR results revealed that analysis of two nasal swabs per patient instead of one increased the diagnostic yield for up to 37.5%. M. leprae DNA positive but RNA negative samples revealed a bacillary load below the limit of detection of the RNA assay. A human GAPDH mRNA qPCR was applied as quality control measure for RNA extraction and reverse transcription.
Significance/Conclusion: This study is the first approach employing DNA- and RNA-based molecular assays for the laboratory confirmation of clinically diagnosed leprosy patients and the identification of carriers of viable M. leprae in Africa. The RLEP qPCR confirmed 76% of clinically suspected MB patients and is envisaged to be installed as routine diagnostic tool in Togo. In our study 44% of the laboratory confirmed MB cases harbored viable bacilli. The analytical sensitivity of the RNA-assay is however 30 times lower than of the DNA-assay, furthermore our cross-sectional study design provides only a snap shot. Therefore, longitudinal studies may be required to determine the true prevalence of carriers of viable M. leprae among MB patients.
Referenzen:
Scollard, DM, Adams LB, Gillis TP, Krahenbuhl JL, Truman RW, et al. (2006) The Continuing Challenges of Leprosy. Clin Microbiol Recv. p. 338–381 Vol. 19, No. 2
Martinez AN, Lahiri R, Pittman TL, Scollard D, Truman R, Moraes MO, et al. (2009) Molecular determination of Mycobacterium leprae viability by use of real-time PCR. J Clin Microbiol. 47(7):2124-30.
Banerjee S, Sarkar K, Gupta S, Mahapatra PS, Gupta S, Guha S, et al. (2010) Multiplex PCR technique could be an alternative approach for early detection of leprosy among close contacts— a pilot study from India. BMC Infect Dis. 24; 10:252.
Martins A., Miranda A, de Oliveira M., Bührer-Sékula S., Martinez A. (2010) Nasal mucosa study of leprosy contacts with positive serology for the phenolic glycolipid 1 antigen, Braz J Otorhinolaryngol. 76(5):579-87.
Beissner M, Symank D, Phillips RO, Amoako YA, Awua-Boateng NY, Sarfo FS, et al. (2012) Detection of viable Mycobacterium ulcerans in clinical samples by a novel combined 16S rRNA reverse transcriptase/IS2404 real-time qPCR assay, PLoS Negl Trop Dis.;6(8)

S21 NEMATHELMINTHIC INFECTIONS

Po12 Loa loa - does it deserve to be neglected?

Metzger W, Mordmueller B *Eberhard Karls Universität Tübingen*

It is estimated that more than ten million people in ten countries of Western and Central Africa are infected with Loa loa filarial nematodes. Like most other infectious diseases, loiasis covers a wide spectrum of symptoms. Severe complications have been reported, however most publications present anecdotal observations, typically in travellers.
The massive use of filaricidal drugs within eradication programmes of Onchocerca volvulus and Wuchereria bancrofti led to the observation that concomitant Loa loa infection increases the risk for severe treatment-associated, life-threatening complications, which launched initiatives to map the risk for loiasis. Consequently, insight about the epidemiology of Loa loa has advanced notably, but somehow paradoxically, its impact on the individual as well as on the community level is not well studied.
We searched the literature to identify research needs and propose topics that can be addressed by future research programmes. We included all publications with “Loa loa” or “loiasis” in the title. Non-English publications were included as far as they were indexed in PubMed. Because some non-English, and some earlier literature, used different spelling, the terms “loaiasis” and “Filaria loa” were added to the search.
In the absence of appropriate studies, Loa loa is commonly judged a harmless nematode, and loiasis as a separate entity does not belong to the list of neglected tropical diseases to be controlled or eradicated in global campaigns. We advocate reorientation of research efforts towards a patient-centric view of loiasis and, as a first step, to determine the disease burden in DALYs (Disability Adjusted Life Years) of this chronic infection and to answer the question if loiasis should be included into future control programmes.
Referenzen:
Metzger WG, Mordmüller B.
Loa loa – does it deserve to be neglected? Lancet Infectious Diseases 2013 Dec 11. [Epub ahead of print].

Po13 Fallbericht: Renitente Brandenburger Larva migrans cutanea bei einem Kleinkind

Friedrich-Jänicke B, Barreto Miranda I. *Institut für Tropenmedizin und Internationale Gesundheit, Charité - Universitätsmedizin Berlin, Berlin*

Ein zwölf Monate altes, gesundes, 11 kg schweres Mädchen wurde im Oktober 2013 ambulant vorgestellt. Es hatte im Juli am Parsteiner See in Brandenburg im Sand gesessen. Zehn Tage später bemerkten die Eltern am Gesäß eine kleine Papel, von der aus sich in den folgenden Tagen mit großer Geschwindigkeit ausgeprägte, besonders nachts stark juckende, gangartige Hautveränderungen am Rücken entwickelten. In einer Hautklinik wurde die Diagnose Larva migrans gestellt und zunächst mit

1,5 mg Ivermectin behandelt. Nach Auskunft der Mutter wurde die volle Dosis vermutlich nicht eingenommen. Da die Larve unbeeinträchtigt weiterwanderte, erfolgte eine Woche später eine erneute Ivermectin-Gabe durch die Mutter. In der Nacht nach der Einnahme sei das Kind sehr unruhig gewesen und habe viel geschrien.
Da sich keine Besserung einstellte, wurde das Kind in unserer Ambulanz vorgestellt. Bei der Untersuchung zeigten sich ausgedehnte frische und ältere Spuren einer kutanen Larva migrans an Bauch, Rücken und Gesäß. In mehreren Stuhluntersuchungen einschl. Baermann-Test wurden keine Parasiten nachgewiesen. Da Ivermectin bei einem Körpergewicht unter 15 kg nicht zugelassen ist, nach der letzten Gabe schlecht vertragen wurde und bisher offensichtlich wirkungslos war, erfolgte eine systemische Behandlung mit Albendazol 200 mg über drei Tage. Diese blieb ebenfalls ohne Erfolg, die Larve wanderte weiter in Richtung Arm und Schulter. Mutter und Kind waren durch den nicht zu beeinflussenden Juckreiz zunehmend beeinträchtigt und wegen der weiteren Ausbreitung mit Richtung auf das Gesicht beunruhigt, so dass schließlich eine topische Therapie mit Albendazol 1,2 g, Vaselinum album ad 12,0g dreimal täglich über zehn Tage durchgeführt wurde. Darunter kam es innerhalb weniger Tage zum Stillstand, die Läsionen waren noch einige Tage gerötet und verschwanden innerhalb einer guten Woche vollständig.
Diskussion: Die Therapie einer Larva migrans bei Kleinkindern ist schwierig geworden seit Thiabendazol nicht mehr verfügbar ist. Ivermectin ist erst ab 15 kg Körpergewicht zugelassen, Albendazol von der WHO für andere Indikationen ab zwölf Monaten empfohlen [1], in Deutschland als Eskazole® aber erst ab sechs Jahren zugelassen. Über eine lokale Therapie mit Albendazol-Creme gibt es bisher nach unserer Kenntnis erst zwei Fallberichte [2]. In der inzwischen erschienenen Leitlinie der Deutschen Dermatologischen Gesellschaft [3] wird über einzelne erfolgreiche Behandlungen berichtet.
In unserem Fall hat offensichtlich erst die topische Albendazoltherapie zu einem raschen und endgültigen Erfolg geführt. Ein verzögerter Therapieerfolg durch die vorangegangene orale Therapie ist nicht sicher auszuschließen, der zeitliche Verlauf spricht allerdings dagegen.
Bei Kleinkindern erscheint uns daher auch bei ausgeprägtem Beschwerdebild eine primär lokale Therapie mit Albendazol sinnvoll.

Referenzen:
1: Report of the WHO informal consultation on the use of praziquantel during pregnancy/lactation and albendazole/mebendazole in children under 24 months: Geneva, 8-9 April 2002.
2: Caumes E. Efficacy of albendazole ointment on cutaneous larva migrans in 2 young children. Clin Infect Dis 2004; 38:1647–8.
3: Sunderkötter, C., von Stebut, E., Schöfer, H., Mempel, M., Reinel, D., Wolf, G., Meyer, V., Nast, A. and Burchard, G.-D. S1-Leitlinie zur Diagnostik und Therapie der kutanen Larva migrans (Creeping disease). JDDG: Journal der Deutschen Dermatologischen Gesellschaft 2014;12:86–91.

S28 NEWS IN TRAVEL AND MIGRATION MEDICINE

Po14 Detection of Norovirus GI/GII from stool samples on Haemoccult® cards by multiplex PCR for gastrointestinal pathogens

Schlenker N 1, Bauer M 1, Beissner M 1, Helfrich K 1, Mengele C 1, Löscher T 1, Nothdurft HD 1, Bretzel G 1, Alberer M 1
1 Department of Infectious Diseases and Tropical Medicine (DITM), University Hospital, Ludwig-Maximilians-University, Munich, Germany

Background:Travelers` diarrhea (TD) is affecting up to 60% of international travelers to countries with an insufficient hygienic standard. Diagnosis of the etiology of TD is hampered by lack of sufficient and easily accessible laboratory capacity at the travel destinations. Therefore, reliable data on this important topic is lacking. Norovirus is an important agent in the etiology of TD and is found as causative in 10-15% of travelers with TD. Haemoccult® cards (Beckman Coulter®) are a convenient tool for stool sample acquisition and can be easily brought by the traveler to a laboratory in the home country for testing. Modern, commercially available, multiplex PCR assays like the Luminex Gastrointestinal Pathogen Panel® allow the simultaneous detection of TD pathogens, including Norovirus.
Objectives: We evaluated the use of Haemoccult® cards for stool sample collection in combination with the Luminex Gastrointestinal Pathogen Panel® for the detection of Norovirus after a prolonged time interval simulating a travel duration of up to 6 weeks.
Material and Methods: Three Norovirus G I stool samples and three Norovirus G II stool samples were obtained from a reference laboratory (CT values in the range of 11-23). Each sample was spread out on the two application fields of a Haemoccult® card. From each Norovirus sample seven Hamoccult® cards were prepared to allow for duplicate testing every week for six weeks and the baseline evaluation. The sample cards were stored at room temperature. RNA was extracted with the NucliSENS miniMag® DNA/RNA extraction system. The Luminex Gastrointestinal Pathogen Panel® was used in combination with the Luminex MAGPIX® system for detection of RNA/DNA of gastrointestinal pathogens according to the manufacturer`s recommendation.
Results After extraction from the Haemoccult® cards, all three Norovirus G I and all three Norovirus G II samples could be detected reliably at weekly intervals up to the last study time point of 42 days. One of the Norovirus G I samples additionally tested positive for Cryptosporidium. The sample kept on being positive for up to 42 days.
Conclusion Haemoccult® cards stored at room temperature can be used in combination with a commercially available multiplex PCR as a reliable means for testing stool for Norovirus for up to 42 days. The viral RNA proved to be stable on the cards for the whole study duration. Sampling on stool cards may therefore be an effective and convenient system for the conduction of studies concerning the etiology of TD and could be used for example in the evaluation of vaccines or antibiotic prophylaxis against TD.

Po15 High prevalence of ESBL-producing Enterobacteriaceae among returning travellers

Barreto Miranda I 1, Günther S 2, Friedrich-Jänicke B 1, Steiner F 1, Paland M 1, Dieckmann S 1, Harms G 1, Wieler L 2, Ignatius R 1, Mockenhaupt F 1
1 Institute of Tropical Medicine and International Health, Charité – Universitätsmedizin Berlin, Berlin
2 Centre for Infection Medicine, Freie Universität Berlin, Berlin

Multidrug-resistant ESBL-producing Enterobacteriacea (ESBL-PE) are increasing worldwide and may be imported to less affected areas by returning travellers. We assessed the prevalence of ESBL-PE among travellers returning to Berlin, Germany, who presented with diarrhoea or other gastrointestinal symptoms. Returnees from Asia were purposely oversampled. Faecal samples were screened for ESBL-PE by culturing on chromogenic agar followed by species identification, susceptibility testing, and bla CTX-M genotyping. Travel-related parameters were assessed by questionnaire.
In total, 167 travellers were analysed (median age, 30 years; 55% female). Half (52%) of these returned from the Indian subcontinent; the median travel duration and the median time to presentation after travel were 29 days and 10 days, respectively. Overall, 49% of the travellers harboured ESBL-PE, which were Escherichia coli in all but two cases of Klebsiella pneumoniae. The most prevalent ESBL encoding genes belonged to the bla CTX-M-1 group. Carbapenem resistance was not detected. ESBL-PE prevalence was highest in travellers returning from India (69%) and lowest among those returning from South and Central America (18%). Travel duration, travel purpose, and previous antibiotic treatment were not associated with the detection of ESBL-PE. However, the prevalence of ESBL-PE significantly declined with increasing time between travel and presentation (<2 weeks, 62%; 2<4 weeks, 34%; >4 weeks, 28%; P = 0.0002). Travel to India and early presentation after travel independently predicted ESBL-PE carriage. Six months after presentation, 27% (9/33) of initially positive individuals continued to harbour ESBL-PE.
Travellers, particularly those returning from India, may constitute a relevant source of spread of ESBL-PE into the population. Carriage appears to decline over time but persists for at least six months in a substantial proportion of individuals. A travel history may justify ESBL-PE screening and contact isolation precautions for patients admitted to hospital.

Po16 Akute Hepatitis A nach vollständiger, kombinierter Hepatitis A/B-Impfung

Schulze MH 1, Uy A 1, Groß U 1, Jilg W 2, Wenzel J 2
1 Universitätsmedizin Göttingen, Institut für Medizinische Mikrobiologie, Göttingen
2 Universitätsklinikum Regensburg, Institut für Klinische Mikrobiologie und Hygiene, Regensburg

Im Dezember 2012 erkrankte ein 70-jähriger Mann an einer akuten Hepatitis A zirka drei Wochen nach Rückkehr von einer 14-tägigen Ägyptenreise (1). 2004 erhielt der Patient und seine damals 53-jährige Ehefrau durch die Hausärztin eine kombinierte Hepatitis A/B-Impfung identischer Chargennummer nach dem Impfschema: 1. Impfung Tag 0; 2. Impfung 5 Wochen später, 3. Impfung 8 Monate später. Bei dem verwendeten Impfstoff handelte es sich nach Angaben des Paul-Ehrlich-Institutes (PEI) um einen nach Deutschland importierten Impfstoff (sogenannter „Parallelimport“, einem vom Hersteller nicht autorisierten Vertriebsweg). Die Chargen wurden im Vorfeld durch das PEI freigegeben.
Zwischen 2004 und 2012 führte das Ehepaar jährliche Reisen nach Ägypten immer in das gleiche Hotel (Region Makadi Bay) durch. Abgesehen von kurzfristigen Episoden einer leichten Reisediarrhö traten keine weiteren gesundheitlichen Beschwerden während der Urlaubsaufenthalte auf.
Die Eigenanamnese des Patienten ist bis auf eine seit 2003 bekannte arterielle Hypertonie unauffällig. Zum Zeitpunkt der Impfung betrug der Body Mass Index 25,8 (Gewicht 80 kg, Größe 1,76 m).
Bei der Ehegattin wurde aufgrund der Hepatitis A-Erkrankung ihres Ehemannes eine Hepatitis A-Antikörperbestimmung durchgeführt. Es wurden ein ausreichend hoher Titer an Anti-Hepatitis A-Virus-IgG sowie negative IgM-Antikörper festgestellt. Diese serologische Konstellation lässt sich auf eine erfolgreiche Immunisierung oder eine früher durchgemachte Hepatitis A zurückführen.
Die Genotypisierung des vom Patienten isolierten Hepatitis A-Virus ergab den Genotyp 1, Subgenotyp 1b, der sich dem Mittelmeercluster zuordnen lässt. Eine erfolgreiche kombinierte Hepatitis A/B-Impfung hätte in diesem Fall eine Hepatitis A-Erkrankung verhindert.
Hepatitis A-Einzel und -A/B-Kombinationsimpfstoffe sind hoch immunogen und erzeugen nach einer regulär durchgeführten Grundimmunisierung mit einer sehr großen Wahrscheinlichkeit einen langwirksamen Schutz von mehr als 10 Jahren. Risikofaktoren einer abgeschwächten oder in Einzelfällen sogar ausbleibenden Antikörperbildung sind ein fortgeschrittenes Alter, starkes Übergewicht, Alkoholkonsum, die Einnahme nichtsteroidaler Antirheumatika bzw. eine Immunschwäche. In Einzelfällen wurde über ein primäres Impfversagen gegenüber der Hepatitis A und / oder B nach vollständiger Hepatitis A/B-Kombinationsimpfung berichtet (2, 3). Dieses erscheint im Falle des Patienten am ehesten für die Erkrankung an akuter Hepatitis A verantwortlich zu sein.
Die reisemedizinische Beratung sollte vor allem Reisende mit den oben genannten Risikofaktoren über das minimale Risiko eines Impfversagens informieren und auf die Möglichkeit einer Antikörperbestimmung nach durchgeführter Grundimmunisierung insbesondere bei der Verwendung eines Hepatitis A/B-Kombinationsimpfstoffen hinweisen.

Referenzen:
1. MacDonald E et al. Increase in hepatitis A in tourists from Denmark, England, Germany, the Netherlands, Norway and Sweden returning from Egypt, November 2012 to March 2013. Euro Surveill. 2013;18(17):20468.
2. Taliani G et al. Hepatitis A vaccine failure: how to treat the threat. Vaccine. 2003;21(31):4505-6.
3. Bonanni P e al. Primary Hepatitis A vaccination failure is a rare although possible event: results of a retrospective study. Vaccine. 2006;24(35-36):6053-7.

Notizen