SANTIAGO DE CHILE

NOVEMBER 13·14·15, 2016

19th Immunocompromised Host Society Symposium

14th Forum on Fungal Infection in the Clinical Practice

FACULTAD DE MEDICINA
PONTIFICIA UNIVERSIDAD
CATÓLICA DE CHILE

FACULTAD DE MEDICINA
UNIVERSIDAD DE CHILE

PROGRAM

www.ichs-infocus-2016-chile.com

SPONSORS

Diamond

Pfizer

Gold

MSD

GILEAD
Advancing Therapeutics.
Improving Lives.

TECNOFARMA

Silver Plus

TEVA PHARMACEUTICALS

LABORATORIOCHILE®
CALIDAD GLOBAL PARA TI

Bronze

amplyx

Nuestros hijos
Niños con Cáncer

CIDARA THERAPEUTICS

VIAMET

MATINAS BIOPHARMA

PSI ON-TIME PROJECT DELIVERY WORLDWIDE

MiraVista DIAGNOSTICS

Associates of Cape Cod, Inc.
Your Endotoxin & Glucan Experts

Roche

SCYNEXIS®

CONTENTS

WELCOME

Santiago, noviembre de 2016

Estimados amigos,

*Les damos la más cordial bienvenida, en la ciudad de Santiago de Chile, al **19th Symposium de la International Immunocompromised Host Society** y al **14th InFocus Latinoamerica**, evento científico del que Uds. han decidido ser parte.*

El Simposio de ICHS es una de las reuniones más importantes en el campo de las infecciones en pacientes inmunocomprometidos a nivel mundial e Infocus es el evento de mayor prestigio latinoamericano en el área de las infecciones fúngicas. El primero suele realizarse en Europa y por primera vez se está llevando a cabo en Latinoamérica, por lo que la selección de nuestro país nos plantea un especial desafío. En cambio para InFocus, se trata de la tercera oportunidad en que Santiago es su sede, luego de haber conseguido organizar eventos muy exitosos en las dos oportunidades previas.

Sin duda esta actividad tiene un gran interés académico, reflejado en el excelente programa científico que ha convocado una alta audiencia con asistentes de toda América Latina y del resto del mundo, lo que es un reflejo del creciente interés de la comunidad médica en mejorar las prácticas en la prevención, diagnóstico y manejo de patología infecciosa en niños y adultos inmunocomprometidos.

Agradecemos la confianza que ICHS e InFocus han depositado en nosotros, esperamos que esta estadía en Chile sea siempre recordada por Uds., que pasen unos agradables días en nuestro país, que se sientan como en casa y que saquen el máximo provecho de nuestra agenda científica y social, que hemos preparado con mucha dedicación.

Agradeciéndoles su presencia en nuestro país, los saludan afectuosamente,

Dr. Ricardo Rabagliati · Chile
Director

Dr. M. Elena Santolaya · Chile
Directora

Organizers

Local Directors

Dr. Ricardo Rabagliati
Chile

Dr. M. Elena Santolaya
Chile

International Directors

Dr. Thomas Patterson
USA

Dr. Arnaldo Colombo
Brazil

Scientific Committee

Dr. Teresa Bidart
Dr. Inés Cerón
Dr. Marcela Ferres
Dr. Mónica Lafourcade
Dr. Marcela Rabello
Dr. Luis Thompson
Dr. Juan Pablo Torres
Dr. Marcela Zubieta

ICHS Executive Committee

Thomas Patterson, MD, F.A.C.P. · President, ICHS
Dimitrios Kontoyiannis, MD, ScD,FACP,FIDSA · President Elect, ICHS
Monica Slavin, MD · Vice President, ICHS
Georg Maschmeyer, MD · ICHS Past President

ICHS International Council

Peter Donnelly, MD
Hermann Einsele, MD
Robert Finberg MD
Hans Hirsch, MD
Clarisse Machado MD
Vicki A. Morrison, MD
Maria Elena Santolaya, MD

Supporters

FACULTAD DE MEDICINA
UNIVERSIDAD DE CHILE

API

SLIPE

SOCHINF

FACULTAD DE MEDICINA
PONTIFICIA UNIVERSIDAD
CATÓLICA DE CHILE

Speakers

Dr. José María Aguado, Spain

Professor of Medicine at the Universidad Complutense de Madrid and Head of the Infectious Diseases Unit of the Hospital Universitario 12 de Octubre in Madrid. Institute of Transplantation, University of Pittsburgh, Pennsylvania, USA. Past-Chairman of the Study Group of Infection in Compromised Patients (ESGICH) of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID). Coordinator of the Program of Transplant Infections of the National Network of Infectious Diseases (REIPI).

Dr. David Andes, USA

Professor of Medicine and Medical Microbiology and Immunology
Head Division of Infectious Diseases
University of Wisconsin

Dr. Eduardo Arathoon, Guatemala

School of Medicine: Universidad de San Carlos de Guatemala
Internal Medicine training: Wayne State University, Michigan
Infectious Diseases: Stanford University, California, with emphasis in Clinical Mycology

Dr. Elvira Balcells M., Chile

Clinician specialist in infectious diseases whose primary research focuses on the epidemiology of tuberculosis, tuberculosis transmission and susceptibility among vulnerable population. Dr. Balcells is currently working on clinical research projects in Chile and she is an Associate Professor in the Department of Infectious Diseases at Pontificia Universidad Católica de Chile.

Dr. Fabianne Carlesse, Brazil

Pediatrician and Infectious diseases specialist
Head of Infection Control of Oncology Pediatric Institute- GRAACC- Federal University of Sao Paulo- Sao Paulo Brazil
Specialist on Infections in Immunossupressed hosts.

Dr. Arunaloke Chakrabarti , India

Professor and Head, Department of Medical Microbiology at the premier Institute in India. He is also head the WHO collaborating center and National Mycology Reference Laboratory. He is President-Elect of International Society for Human and Animal Mycology. His major contribution is in the field of epidemiology of fungal sinusitis, mucormycosis, sporotrichosis, and hospital acquired fungal infections.

Dr. Arnaldo Lopez Colombo, Brazil

Medical Doctor, Infectious Diseases Specialist. Fellowship in Clinical Mycology at the University of Texas
Professor of Infectious Diseases at Escola Paulista de Medicina_UNIFESP
Senior Advisor of Leading International Fungal Education(LIFE) and Global Action Fund for Fungal Infection(GAFFI)

Speakers

Dr. Rodrigo Cornejo, Chile

MD, MBA, FACP Associate Professor Universidad de Chile. Internal Medicine - Intensive Care Medicine
Chief of critical patients Unit Universidad de Chile. Coordinator of post graduated Medical School-Universidad de Chile. Fellow of the American College of Physicians

Dr. Peter Donnelly, The Netherlands

Professor, Studies in Supportive Care Department of Haematology Radboud University Medical Centre, Nijmegen, the Netherlands. Microbiologist, Coordinator of Studies in Supportive Care. Honorary Professor of the University of Manchester, UK. Chair of the Infectious Disease Group of the European Organization for Research and Treatment of Cancer (EORTC) and for the International Society of Human and Animal Mycology (ISHAM) Working Group – European Aspergillus PCR Initiative (EAPCRI)

Dr. Robert Finberg, USA

Dr. Robert Finberg trained in Immunology at Harvard Medical School and in Infectious Diseases at Brigham and Women's Hospital in Boston. He is currently Professor and Chair of the Department of Medicine at the University of Massachusetts Medical School in Worcester, Massachusetts. His research has focused on treatments of infections in immunocompromised patients and on the pathogenesis and spread of viral illness.

Dr. Jay A Fishman, USA

Professor of Medicine at Harvard Medical School, Director of the Transplant Infectious Diseases and Compromised Host Program at the Massachusetts General Hospital (MGH), and Associate Director of the MGH Transplant Center. Medical school at Johns Hopkins University School of Medicine, internal medicine training and Infectious Disease Fellowship at MGH, and Fellowship in Molecular Biology and Genetics at MGH and Harvard Medical School.

Dr. Beatriz Gómez, Colombia

Dr. Gómez is Professor at the Universidad del Rosario and a Senior Scientist in the Cooperación para Investigaciones Biológicas (CIB) in Colombia. She has a PhD in Medical Mycology from King´s College, University of London. Her interests are in endemic and systemic mycoses, with main focus on Histoplasmosis and Paracoccidioidomycosis.

Dr. Andreas H. Groll, Germany

Professor of Pediatrics, Head of the Infectious Disease Research Programme and Deputy Director of the Department of Haematology/Oncology at the University Children's Hospital in Münster, Germany. Major research interests include infectious complications in the immunocompromised host, particularly invasive fungal infections and the pharmacokinetics and pharmacodynamics of antimicrobial agents.

Dr. Hans Hirsch, Switzerland

MD, MSc, Professor, FMH Infectious Diseases, FMH Internal Medicine, FAMH Medical Microbiology. Research Group: Transplantation & Clinical Virology; Department Biomedicine, University of Basel.
Diagnostic Service: Division of Infection Diagnostics (Haus Petersplatz), Department Biomedicine, University of Basel. Attending consultant: Infectious Diseases & Hospital Epidemiology, University Hospital Basel, Switzerland.

Speakers

Dr. Alvaro Huete, Chile

Abdominal and Thoracic Radiologist
Associate Professor of Radiology
Pontificia Universidad Católica de Chile

Dr. Dimitrios P. Kontoyiannis, USA

MD, ScD, FACP, FIDSA, Frances King Black Endowed Professor and Deputy Head-Research in the Division of Internal Medicine at The University of Texas MD Anderson Cancer Center. He is the president elect of Immunocompromised Host Society (2016-2018).

Dr. Thomas Lehrnbecher, Germany

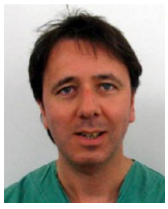
Professor of Pediatrics, Pediatric Hematologist and Oncologist in the Johann Wolfgang Goethe-University, Frankfurt, Germany. Children´s Hospital in Würzburg, Germany. Research focuses on infectious complications in children with cancer, the development of immunotherapeutic strategies against invasive fungal infections in hematopoietic stem cell transplant recipients, and the interaction of host immune cells and fungi.

Dr. Per Ljungman, Sweden

MD. Professor of hematology at Karolinska Institutet and acting director of Allogeneic Stem Cell Transplantation at Karolinska University Hospital, Stockholm, Sweden. His main research interests are viral infections and vaccinations in allogeneic stem cell transplant recipients.

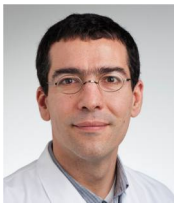
Dr. Clarisse Machado, Brazil

MD, Head of the Virology Laboratory, Institute of Tropical Medicine - University of São Paulo.
Coordinator of the Transplant Infectious Program at the HSCT center - Amaral Carvalho Foundation.
President Elect of the Transplant Infectious Diseases, a section of The Transplantation Society.



Dr. Johan Maertens, Belgium

MD, PhD
University Hospital Gasthuisberg Leuven
Department of Hematology
Leuven, Belgium



Dr. Oriol Manuel, Switzerland

Clinical Immunology, Nephrology, Infectious Diseases
University Hospital of Lausanne
Lausanne, Switzerland

Speakers

Dr. Georg Maschmeyer, Germany

Professor and Director at the Department of Haematology, Oncology and Palliative Care at the Klinikum Ernst von Bergmann, Potsdam, Germany. From 2012 through 2014, he was president of the International Immunocompromised Host Society (ICHS).

Dr. Jacques Meis, The Netherlands

Jacques F. Meis M.D. is a consultant of Medical Microbiology and Infectious Diseases at Canisius Wilhelmina Hospital and a honorary consultant at Radboud University Medical Center in Nijmegen, The Netherlands.

Dr. Vicky Morrison, USA

Vicki A. Morrison, MD. Professor of Medicine, University of Minnesota. Physician, Hematology / Oncology and Infectious Disease, Minneapolis, Minnesota. Member of several national cooperative group committees, including the Lymphoma, Leukemia, and Cancer in the Elderly Committees of the Alliance for Clinical Trials in Cancer / CALGB.

Dr. David Oddo, Chile

MD. Pathologist
Infectious diseases
Associate Professor of Pathology
Faculty of Medicine, School of Medicine. Pontificia Universidad Católica de Chile.

Dr. Luis Ostrosky, USA

Associate Director, Infectious Diseases Fellowship, Director, Laboratory of Mycology Research, Medical Director for Epidemiology, Memorial Hermann Hospital Texas Medical Center. Professor, Vice-Chair - Infectious Diseases. Universidad Nacional Autónoma de México, México. Instituto Nacional de la Nutrición Salvador Zubirán, Mexico. University of Texas- Houston Medical School. Anderson Cancer Center, Houston, Texas

Dr. Thomas Patterson, USA

MD, FACP, FIDSA
Chief, Division of Infectious Diseases. Professor of Medicine
Director, San Antonio Center for Medical Mycology
The University of Texas Health Science Center at San Antonio

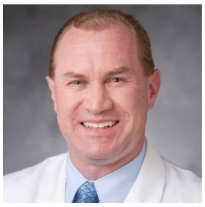
Dr. Flavio Queiroz-Telles, Brazil

MD, PhD, is Associate Professor of Infectious Diseases at the Department of Public Health at the Federal University of Paraná, Curitiba, Brazil and GAFFI / LIFE Ambassador in Brazil.

Speakers

Dr. Monica Slavin, Australia

Professor. Head of the Department of Infectious Diseases (Peter Mac) and Immunocompromised Host Infection Service (RMH). Clinical Research, Epidemiology, Public Health. The University of Melbourne, Victorian Infectious Diseases Service (VIDS)



Dr. William Steinbach, USA

Dr. Steinbach is a Professor of Pediatrics in infectious diseases as well as a Professor in Molecular Genetics and Microbiology at Duke University. His basic, translational, and clinical research covers mold and yeast infections, and he is the founder and director of the 53-site multi-national International Pediatric Fungal Network.

Dr. Luis Thompson, Chile

Professor of Medicine at Universidad del Desarrollo / Clinica Alemana de Santiago.
Infectologist of the Department of Medicine of Clinica Alemana.

Dr. Nora Tiraboschi, Argentina

Chief, Division of Infectious Diseases Hospital of Clinics "Jose de San Martin" and Director of the Graduate Career specialist in Infectious Diseases, Faculty of Medicine, Universidad de Buenos Aires.

Dr. Jose Vidal, Brazil

M.D. PhD Infectious disease specialist from the Emilio Ribas Institute of Infectious Diseases, São Paulo, Brazil, and from the Hospital das Clinicas, Sao Paulo University Medical School, São Paulo, Brazil. Specialized in Neuroinfectology. Doctor in Sciences. Adviser of the Ministry of Health of Brazil

Dr. Claudio Viscoli, Italy

MD, Professor of Infectious Disease at the University of Genoa, and Chief of the Infectious Disease Division of the IRCCS A.O.U. SAN MARTINO-IST in Genoa. He is also Director of the Postgraduate School of Infectious Disease and Tropical of the University of Genova, Italy. He published more than 350 articles on peer-review journals and authored several book chapters and monographs."

Dr. Thomas Weitzel, Chile

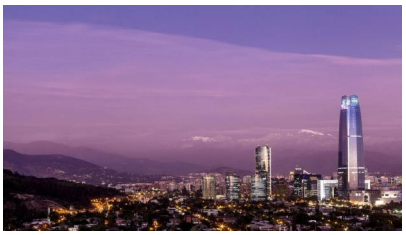
Medical studies in Göttingen and Kiel Germany, working in Hamburg and Berlin before moving to Chile in 2007. Microbiologist, infectious disease specialist and Tropical Medicine and Parasitology. University professor currently working in German Development Clinic.

Venue

Sheraton Santiago Hotel and Convention Center

Address: Avda. Santa María 1742, Providencia – Santiago
Ph +56 222 33 50 00

15 minutes from the **Pedro de Valdivia** subway station (Line 1)



www.sheratonsantiago.com

Official Hotels

HOTEL W SANTIAGO ★★★★★

Isidora Goyenechea 3000, Las Condes, Santiago
Ph +56 227 70 00 00
www.wsantiagohotel.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

HOTEL INTERCONTINENETAL ★★★★★

Avenida Vitacura 2885, Las Condes, Santiago
Ph +56 223 94 20 00
www.intercontisantiago.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

HOTEL GRAND HYATT SANTIAGO ★★★★★

Av. Kennedy 4601, Las Condes, Santiago
Ph +56 229 50 12 34
www.santiago.grand.hyatt.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

HOTEL MARINA LAS CONDES ★★★★

Av. Alonso de Córdova 5727, Las Condes, Santiago
Ph +56 225 99 40 00
www.bestwestern.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

HOTEL DIEGO DE VELAZQUEZ ★★★

Guardia Vieja 150, Providencia, Santiago
Ph +56 222 34 44 00
www.bestwestern.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

HOTEL NERUDA ★★★

Av. Pedro de Valdivia 164, Providencia, Santiago
Ph +56 226 63 31 53
www.bestwestern.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

HOTEL ATTON EL BOSQUE ★★★★

Roger de Flor 2770, Las Condes, Santiago
Ph +56 229 47 36 00
www.elbosque.atton.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

HOTEL ATTON VITACURA ★★★★

Vitacura 3201, Vitacura, Santiago
Ph +56 229 44 78 00
www.vitacura.atton.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

HOTEL ATTON LAS CONDES ★★★★

Alonso de Córdova 5199, Las Condes, Santiago
Ph +56 224 22 79 00
www.lascondes.atton.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

1.HOTEL SHERATON SANTIAGO ★★★★★

Avda. Santa María 1742, Providencia – Santiago
Ph +56 222 33 50 00
www.sheratonsantiago.com
CHECKIN 3:00 P.M. CLT
CHECKOUT 12:00 P.M. CLT

Restaurants

RESTAURANT AQUÍ ESTA COCO

Calle la Concepción 236, Providencia, Santiago
Ph +56 224106200 Mob. +56 942525649
www.aquiestacoco.cl

RESTAURANT MIGUEL TORRES

Isidora Goyenechea 2874 Las Condes, Santiago
Ph +56 222 36 44 83
www.migueltorres.cl

Rest. Como Agua Para Chocolate

Constitución 88, Providencia, Santiago
Ph +56 227 77 87 40
www.comoaguaparachocolate.cl

RESTAURANT LA CUISINE

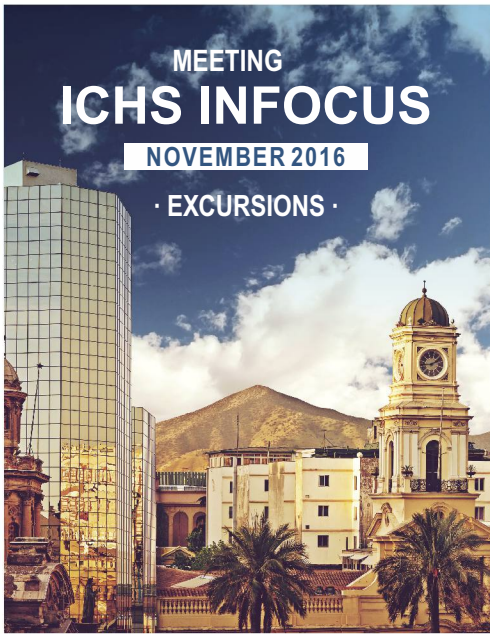
General Flores 218, Providencia, Santiago
Ph +56 229 52 61 20
www.restaurant-la-cuisine.cl

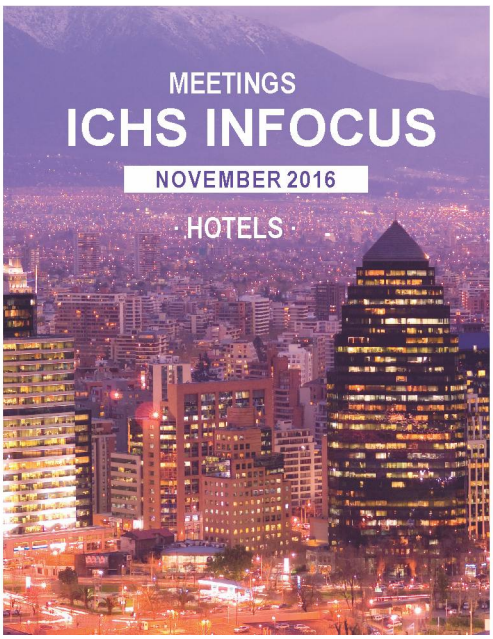
RESTAURANT BARANDIARAN

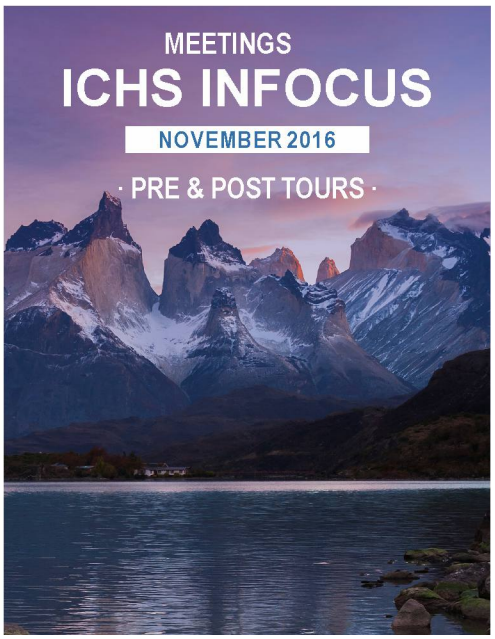
Manuel Montt 315, Providencia, Santiago
Ph +56 222 36 68 54
www.barandiaran.cl

Visit Chile

To organize your trips by Chile:





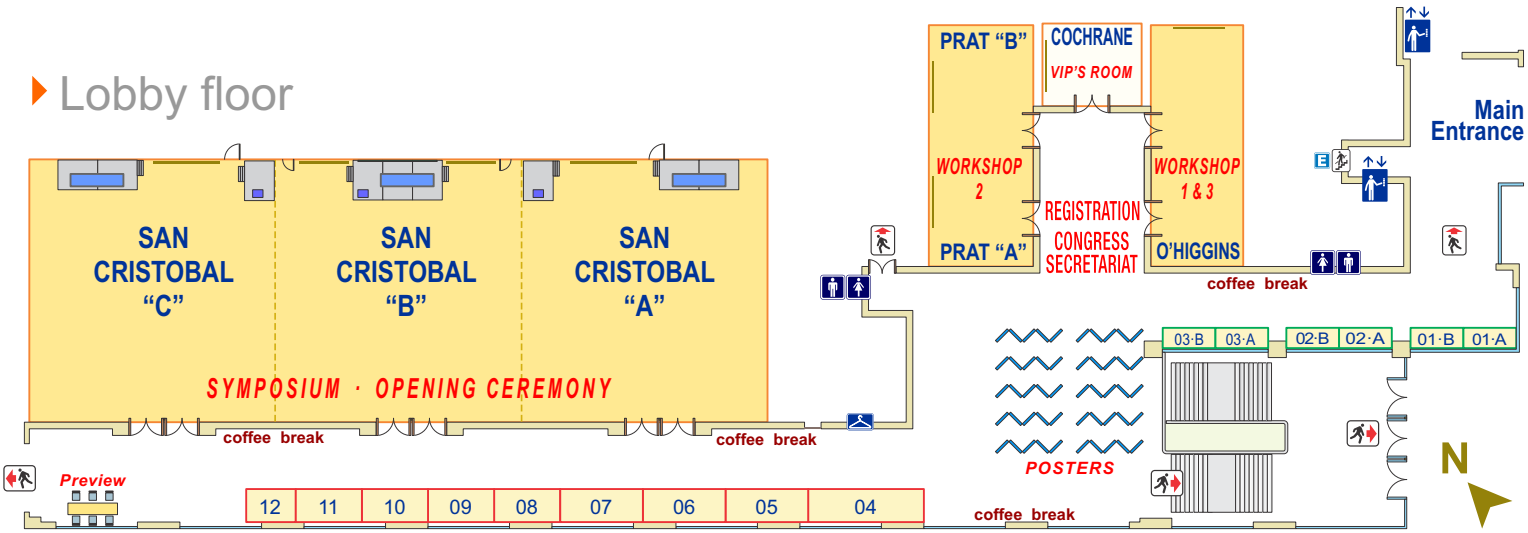


COCHA
ASI DA GUSTO VIAJAR

Phone +56 224 64 13 00
www.cocha.com

ATACAMA DAY · **Sunday 13**

Lobby floor



Program Overview

FOYER

08:30 - 18:00	**Registration**

	O'HIGGINS ROOM	PRAT A+B ROOM
09:00 - 10:00	Diagnostic Workshop **1**	
10:00 - 11:00		Diagnostic Workshop **2**
11:00 - 12:00	Diagnostic Workshop **3** Pfizer	

Maximum 40 people for each session. Pre-registration is required. Spanish or English sessions, without translation.

SAN CRISTOBAL A+B+C ROOM

11:30 - 12:00	Coffee Break
12:00 - 13:30	**ASTELLAS / TECNOFARMA SPOSORED SYMPOSIUM**
13:30 - 15:30	**PFIZER SPONSORED SYMPOSIUM 1** · Box Lunch
15:30 - 16:00	Coffee Break
16:00 - 17:30	**GILEAD SPONSORED SYMPOSIUM 2**
17:30 - 18:00	Break
18:00 - 19:30	**Opening Ceremony / Opening Lecture**
19:30 - 20:30	**Welcome Reception**

Scientific Program · **Sunday** · November 13, 2016

08:30 - 18:00 **Foyer**
Registration

09:00 - 10:00 **O'Higgins Room** — Chair: ***Dr. Teresa Bidart***, Chile
Diagnostic Workshop 1*
Imaging for diagnosis and follow up of fungal infections
Dr. José María Aguado, Spain
Dr. Fabianne Carlesse, Brazil
Dr. Álvaro Huete, Chile

10:00 - 11:00 **Prat A+B Room** — Chair: ***Dr. Marcela Rabello***, Chile
Diagnostic Workshop 2*
Skin lesions during systemic infection in trasplanted and oncological patients
Dr. Oriol Manuel, Switzerland
Dr. Luis Ostrosky, USA

11:00 - 12:00 **O'Higgins Room** — Chair: ***Dr. Mónica Lafourcade***, Chile
Diagnostic Workshop 3*
Identifying fungal agents (Supported by Pfizer)
1. In the mycology laboratory — ***Dr. Nora Tiraboschi***, Argentina
2. In the anatomopathological laboratory — ***Dr. David Oddo***, Chile

*: Maximum 40 people for each session. Pre-registration is required. Spanish or English sessions, without translation.

11:30 - 12:00 **Foyer**
Coffee break

12:00 - 13:30 **San Cristobal A+B+C Room**
ASTELLAS / TECNOFARMA SPOSORED SYMPOSIUM
Invasive Candidiasis: New Borders
TECNOFARMA Medical Director Opening — ***Dr. Ricardo Tuane***, Chile
1. Candidemia: Emerging Disease in Chile & LATAM — ***Dr. Luis Thompson***, Chile
2. Current role of echinocandins in the treatment of candidemia — ***Dr. Alessandro Pasqualotto***, Brazil
3. Interactive discussion of clinical cases — ***Dr. Alessandro Pasqualotto***, Brazil; ***Dr. Luis Thompson***, Chile

13:30 - 15:30 **San Cristobal A+B+C Room** — Chair: ***Dr. Arnaldo Lopez Colombo***, Brazil
PFIZER SPONSORED SYMPOSIUM 1 · Box Lunch
Pathways for diagnosis and management of invasive fungal diseases
1. Triggers for driving treatment of at-risk patients with invasive fungal disease — ***Dr.J. Peter Donnelly***, The Netherlands
2. Treatment and timing in invasive fungal diseases: focus in *Candida* and *Aspergillus* — ***Dr. Johan Maertens***, Belgium

15:30 - 16:00 **Foyer**
Coffee break

Scientific Program · **Sunday** · November 13, 2016

16:00 - 17:30 **San Cristobal A+B+C Room** Chair: ***Dr. Ricardo Rabagliati***, Chile

GILEAD SPONSORED SYMPOSIUM 2

Current Challenges in the Management of Fungal Infections

1. The challenge of *Candida* antifungal resistance in Latin America. ***Dr. Arnaldo Colombo***, Brazil
2. The global landscape of Aspergillosis resistance to triazole. ***Dr. Jacques F. Meis***, The Netherlands
3. How to manage refractory cryptococcal meningitis. ***Dr. José E. Vidal B.***, Brazil

17:30 - 18:00 Break

18:00 - 19:30 **San Cristobal A+B+C Room** Chair: ***Dr. Juan Pablo Torres***, Chile

Opening Ceremony

Opening Lecture

A major 21st century issue:
Increasing antimicrobial resistance and the absence of therapeutic options.
From the bench to the bedside of immunocompromised patient ***Dr. Claudio Viscoli***, Italy

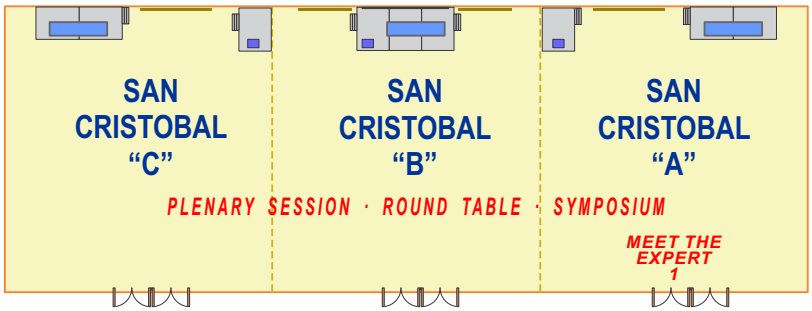
19:30 - 20:30 **Sheraton Hotel**

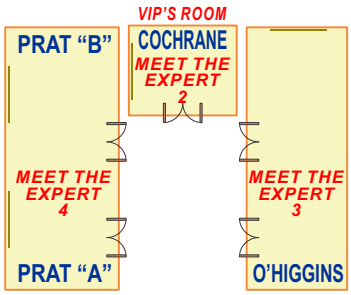
Welcome Reception

Salar Aguas Calientes, San Pedro de Atacama

Photo: Turismo Chile

EASTER ISLAND DAY · **Monday 14**





Program Overview

	SAN CRISTOBAL "A"	COCHRANE ROOM	O'HIGGINS ROOM	PRAT A+B ROOM
08:00 - 08:45	Meet the Expert 1	Meet the Expert 2	Meet the Expert 3	Meet the Expert 4

Meet the Expert: Maximum 40 people in each room. Pre-registration is required. Spanish or English sessions, without translation.

	SAN CRISTOBAL A+B+C ROOM
09:00 - 10:00	Plenary Session 1
10:00 - 10:30	Coffee Break

	SAN CRISTOBAL "A" ROOM	SAN CRISTOBAL "B" ROOM	SAN CRISTOBAL "C" ROOM
10:30 - 11:45	ROUND TABLE	ROUND TABLE INFOCUS	SPECIAL LECTURE
11:45 - 13:00	SPECIAL LECTURE	ROUND TABLE INFOCUS	ROUND TABLE INFOCUS

	SAN CRISTOBAL A+B+C ROOM
13:15 - 14:30	PFIZER SPONSORED SYMPOSIUM 3 · Box Lunch

	SAN CRISTOBAL "A" ROOM	SAN CRISTOBAL "B" ROOM
14:45 - 16:00	ROUND TABLE	ROUND TABLE INFOCUS
16:00 - 17:00	Coffee & Poster View	

	SAN CRISTOBAL A+B+C ROOM
17:00 - 18:00	Plenary Session 2
18:00 - 19:15	MSD SPONSORED SYMPOSIUM 4

20:00	Departure from Sheraton Hotel (Lobby) to Official Dinner. **Registration Required**
20:15 - 23:00	Official Dinner · Vista Santiago Restaurant

Scientific Program · **Monday** · November 14, 2016

08:00 - 08:45 **San Cristobal "A" Room**
Chair: ***Dr. Fatima de Abreu***, Venezuela
Meet the Expert 1
How do I treat aspergillosis in neutropenic patients?
Dr. Flavio Queiroz-Telles, Brazil
Dr. Johan Maertens, Belgium

08:00 - 08:45 **Cochrane Room**
Chair: ***Dr. Mónica Lafourcade***, Chile
Meet the Expert 2
How do I manage TB in solid organ transplant patient?
from pre and post-transplant scenarios
Dr. José María Aguado, Spain
Dr. Elvira Balcells, Chile

08:00 - 08:45 **O'Higgins Room**
Chair: ***Dr. Juan Pablo Torres***, Chile
Meet the Expert 3
Pre-transplant evaluation: Only serology?
Only molecular biology? or sometimes both?
Dr. Jay Fishman, USA
Dr. Oriol Manuel, Switzerland

08:00 - 08:45 **Prat A+B Room**
Chair: ***Dr. Marcela Zubieta***, Chile
Meet the Expert 4
Vaccination of transplant population:
How do I define the best schedule in my institution?
Dr. Clarisse Machado, Brazil
Dr. Per Ljungman, Sweden

09:00 - 10:00 **San Cristobal A+B+C Room**
Chair: ***Dr. Thomas Patterson***, USA
Dr. María Elena Santolaya, Chile
Plenary Session 1
Antifungal therapy in hematological cancer and HSCT.
Monotherapy or combined drugs?
Dr. Dimitrious Kontoyiannis, USA

10:00 - 10:30 **Foyer**
Coffee break

10:30 - 11:45 **San Cristobal "A" Room**
Chair: ***Dr. Juan Pablo Torres***, Chile
Dr. Clarisse Machado, Brazil
Round Table
Respiratory viruses in hematological patients
1. Clinical relevance, diagnosis and therapy in hematological patients. 30 min ***Dr. Per Ljungman***, Sweden
2. Influenza: Evolution, New Drugs, and Vaccine Strategies. 30 min ***Dr. Robert Finberg***, USA

10:30 - 11:45 **San Cristobal "B" Room**
Chair: ***Dr. Luis Thompson***, Chile
Dr. Jorge Finquelievich, Argentina
Round Table Infocus
Epidemiology, clinical scenarios and therapy
in immunocompetent vs. immunocompromised host.
1. Candidiasis 20 min. ***Dr. Arnaldo Colombo***, Brazil
2. Aspergillosis 20 min ***Dr. Claudio Viscoli***, Italy
3. Fusariosis 20 min ***Dr. Flavio Queiroz-Telles***, Brazil

10:30 - 11:45 **San Cristobal "C" Room**
Chair: ***Dr. Marcela Ferres***, Chile
Dr. José María Aguado, Spain
Special Lecture
Cytomegalovirus, "the stone guest"
1. What´s new in the risk assessment of infection and disease. 45 min ***Dr. Oriol Manuel***, Switzerland

Scientific Program · **Monday** · November 14, 2016

11:45 - 13:00 **San Cristobal "A" Room**
Chair: ***Dr. Vicki Morrison***, USA
Dr. Marcela Ferres, Chile

Special lecture

Polyomavirus diseases in different immunocompromised hosts: Inherited, acquired or iatrogenic immunodeficiency. 45 min. — ***Dr. Hans Hirsch***, Switzerland

---

11:45 - 13:00 **San Cristobal "B" Room**
Chair: ***Dr. Maribel Dolande***, Venezuela
Dr. Alessandro Pasqualotto, Brazil

Round Table Infocus
Cryptococcosis

1. Why people still die of cryptococcal meningitis? 30 min — ***Dr. Jose Vidal***, Brazil
2. What are the new challenges with the *C gatti* emergence? 30 min — ***Dr. Flavio Queiroz-Telles***, Brazil

---

11:45 - 13:00 **San Cristobal "C" Room**
Chair: ***Dr. M. Elena Santolaya***, Chile
Dr. Thomas Lehrnbecher, Germany

Round Table Infocus
Pediatric Mycology

1. Candidemia in the intensive care unit: NICU and PICU 20 min — ***Dr. William Steinbach***, USA
2. Antifungal prophylaxis for cancer: drugs and dosing 20 min — ***Dr. Fabianne Carlesse***, Brazil
3. Antifungal PK/PD and dosing in neonates and children 20 min — ***Dr. Andreas Groll***, Germany

---

13:15 - 14:30 **San Cristobal A+B+C Room**

PFIZER SPONSORED SYMPOSIUM 3 · Box Lunch
Pneumococcal infections in the immunocompromised host. Which is the best strategy for prevention?

1. Welcome and Introduction — ***Dr. María Elena Santolaya***, Chile
2. Epidemiology of pneumococcal disease among the immunocompromised host in Latin America — ***Dr. Cecilia Dignani***, Argentina
3. Vaccination role in the immunocompromised patient: Which is the ideal schedule — ***Dr. Carlos Pérez***, Chile

---

14:45 - 16:00 **San Cristobal "A" Room**
Chair: ***Dr. Fatima de Abreu***, Venezuela
Dr. Elvira Balcells, Chile

Round Table
Virus and parasites challenges

1. Zika, chikungunya and dengue virus. What is the threat for transplant and other immunocompromised patients? 30 min — ***Dr. Clarisse Machado***, Brazil
2. From protozoa to helminths - what is the risk for immunocompromised patients? 30 min — ***Dr. Thomas Weitzel***, Chile

---

14:45 - 16:00 **San Cristobal "B" Room**
Chair: ***Dra. Mónica Lafourcade***, Chile
Dr. Flavio Queiroz-Telles, Brazil

Round Table Infocus
New Techniques in Medical Mycology

1. The role of *Aspergillus* PCR 30 min — ***Dr. Peter Donnelly***, The Netherlands
2. Update in invasive *Candida* diagnosis: β-D-glucan, manan antimanan, T2 30 min — ***Dr. Thomas Patterson***, USA

16:00 - 17:00 **Foyer**

Coffee & Poster View

Scientific Program · **Monday** · November 14, 2016

17:00 - 18:00 **San Cristobal A+B+C Room**

Chair: ***Dr. Juan Pablo Torres***, Chile
Dr. Marcela Ferres, Chile
Dr. Inés Cerón, Chile

Plenary Session 2
Challenging clinical cases:
Latin-American residents consult an experts panel.
4 short cases discussion for an experts' panel from
USA, Europe, Brazil, Oceania, Asia and Latin America

Dr. Johan Maertens, Belgium
Dr. Arnaldo Colombo, Brazil
Dr. Monica Slavin, Australia
Dr. Luis Ostrosky, USA
Dr. Arunaloke Chakrabarti, India
Dr. Thomas Lehrnbecher, Germany

18:00 - 19:15 **San Cristobal A+B+C Room**

MSD SPONSORED SYMPOSIUM 4
Optimizing Antifungal Strategies to Improve Patient Survival

Welcome and Opening Remarks — ***Dr. Thomas Patterson***, USA

1. Matching AF Strategies in Patients with Hematologic Malignancies — ***Dr. Oliver Cornely***, Germany
2. Antifungal Prophylaxis in Daily Clinical Practice — ***Dr. Dimitrios P. Kontoyiannis***, USA
3. Current & Future Strategies for Treating Resistant *Candida* & *Aspergillus* Infections — ***Dr. Donald Sheppard***, Canada

20:00 **Hotel Sheraton Lobby**

Departure for the Official Dinner **Registration Required**
A bus will leave from the Sheraton Hotel. Please be a few minutes prior to the pick-up at the Lobby.

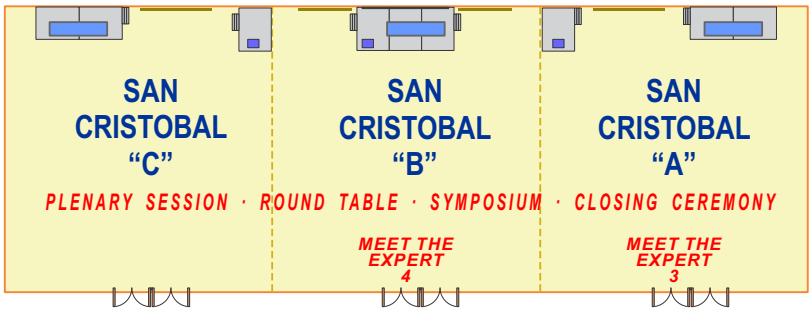
20:15 - 23:00 **Vista Santiago Restaurant** Metropolitan Park, San Cristobal Hill.

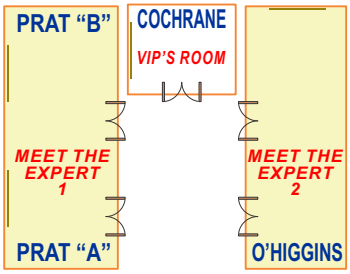
Official Dinner


Moai Rano Raraku, Easter Island

Photo: Turismo Chile

PATAGONIA DAY · Tuesday 15





Program Overview

	PRAT A+B ROOM	O'HIGGINS ROOM	SAN CRISTOBAL "A"	SAN CRISTOBAL "B"
08:00 - 08:45	Meet the Expert 1	Meet the Expert 2	Meet the Expert 3	Meet the Expert 4

Meet the Expert: Maximum 40 people in each room. Pre-registration is required. Spanish or English sessions, without translation.

	SAN CRISTOBAL A+B+C ROOM
09:00 - 10:00	Plenary Session 3
10:00 - 10:30	Coffee Break

	SAN CRISTOBAL "A" ROOM	SAN CRISTOBAL "B" ROOM	SAN CRISTOBAL "C" ROOM
10:30 - 11:45	ROUND TABLE	ROUND TABLE INFOCUS	SPECIAL LECTURE
11:45 - 13:00	ROUND TABLE	ROUND TABLE INFOCUS	ROUND TABLE

	SAN CRISTOBAL B+C ROOM
13:15 - 14:30	MSD SPONSORED SYMPOSIUM 5 · Box Lunch

	SAN CRISTOBAL "A" ROOM	SAN CRISTOBAL "B" ROOM	SAN CRISTOBAL "C" ROOM
14:45 - 16:00	ROUND TABLE	ROUND TABLE INFOCUS	TEVA SPONSORED SYMPOSIUM
16:00 - 17:00	Coffee & Poster View		

	SAN CRISTOBAL A+B+C ROOM
17:00 - 18:00	Plenary Session 4
18:00 - 19:10	CLOSING CEREMONY AND BEST POSTERS AWARDS

Scientific Program · **Tuesday** · November 15, 2016

08:00 - 08:45 **Prat A+B Room** — Chair: ***Dr. Marcela Rabello***, Chile

Meet the Expert 1

How do I treat mucormycosis?

Dr. Dimitrios Kontoyiannis, USA
Dr. Arunaloke Chakrabarti, India

08:00 - 08:45 **O'Higgins Room** — Chair: ***Dr. Juan Pablo Torres***, Chile

Meet the Expert 2

How do I study lung infiltrates in neutropenic patients?
BAL and biopsy or not BAL/not biopsy?

Dr. Georg Maschmeyer, Germany
Dr. Monica Slavin, Australia

08:00 - 08:45 **San Cristobal "A" Room** — Chair: ***Dr. Luis Thompson***, Chile

Meet the Expert 3

How to manage severe sepsis in neutropenic patients?

Dr. Rodrigo Cornejo, Chile
Dr. Luis Thompson, Chile

08:00 - 08:45 **San Cristobal "B" Room** — Chair: ***Dr. Inés Cerón***, Chile

Meet the Expert 4

How to achieve an antimicrobial and antifungal stewardship
in a center that care hematological and transplant patients

Dr. Luis Ostrosky, USA
Dr. Arnaldo Colombo, Brazil

09:00 - 10:00 **San Cristobal A+B+C Room** — Chair: ***Dr. Arnaldo Colombo***, Brazil
Dr. Ricardo Rabagliati, Chile

Plenary Session 3
Transplantation and Microbioma

Dr. Jay Fishman, USA

10:00 - 10:30 **Foyer**

Coffee break

10:30 - 11:45 **San Cristobal "A" Room** — Chair: ***Dr. Inés Cerón***, Chile
Dr. Jay Fishman, USA

Round Table

Biomarkers of Infection and Immunosuppression · ECMID Symposium

1. A global score for identifying transplant recipients
   at high risk of infection 30 min — ***Dr. José Maria Aguado***, Spain
2. Genetic polymorphisms as biomarkers of risk of infection
   after solid organ transplantation 30 min — ***Dr. Oriol Manuel***, Switzerland

10:30 - 11:45 **San Cristobal "B" Room** — Chair: ***Dr. Teresa Bidart***, Chile
Dr. Monica Slavin, Australia

Round Table Infocus

Antifungal drugs of the same class: are all the same?

1. Lipid amphotericin 20 min. — ***Dr. Georg Maschmeyer***, Germany
2. Echinocandins 20 min — ***Dr. Dimitrios Kontoyiannis***, USA
3. Triazoles 20 min — ***Dr. Claudio Viscoli***, Italy

10:30 - 11:45 **San Cristobal "C" Room** — Chair: ***Dr. Juan Pablo Torres***, Chile
Dr. Andreas Groll, Germany

Special Lecture

**Antimicrobial optimization for immunocompromised patients:
from PK/PD to improve tisular concentration in the target** 45 min — ***Dr. David Andes***, USA

Scientific Program · **Tuesday** · November 15, 2016

11:45 - 13:00 **San Cristobal "A" Room**
Chair: ***Dr. Marcela Zubieta***, Chile
Dr. Per Ljungman, Sweden

Round Table
Vaccines in the immunocompromised setting

1. Immune reconstitution after HSCT and vaccine response 30 min — ***Dr. Vicki Morrison***, USA
2. Live vaccines: When the infection risk exceeds the vaccine risk? 30 min — ***Dr. Clarisse Machado***, Brazil

11:45 - 13:00 **San Cristobal "B" Room**
Chair: ***Dr. Arnaldo Colombo***, Brazil
Dr. Fernando Riera, Argentina

Round Table Infocus
Fungal infections in Intensive Care Unit

1. *Aspergillus* in the ICU 20 min — ***Dr. Johan Maertens***, Belgium
2. Intra-abdominal candidiasis 20 min — ***Dr. Arnaldo Colombo***, Brazil
2. Antifungal drugs de-escalation strategies 20 min — ***Dr. William Steinbach***, USA

11:45 - 13:00 **San Cristobal "C" Room**
Chair: ***Dr. Luis Thompson***, Chile
Dr. Rinaldo Poncio Méndes, Brazil

Round Table
Endemic fungal infections (API Symposium)

1. Histoplasmosis: It is time to move to a pre-emptive therapy? 20 min — ***Dr. Eduardo Arathoon***, Guatemala
2. There are clinical and epidemiological differences between *P brasiliensis* vs. *P lutzii*? 20 min — ***Dr. Beatriz Gómez***, Colombia
3. The new paradigm of sporotrichosis 20 min — ***Dr. Arunaloke Chakrabarti***, India

13:15 - 14:30 **San Cristobal B+C Room**

MSD SPONSORED SYMPOSIUM 5 · Box Lunch
Managing the most problematic Gram Negative Bacterial Infections in Immunocompromised patients

Welcome and Opening Remarks — ***Dr. Ellie Goldstein***, USA

1. Antibiotic Use & Global Trends of Gram negative Resistance — ***Dr. Flavia Rossi***, USA
2. Risk Stratification: Identifying the right patient — ***Dr. Isabel Ruiz Camps***, Spain
3. Real World experience with Strategic Options for Management of GNB infections in immunocompromised patients — ***Dr. Ellie Goldstein***, USA

14:45 - 16:00 **San Cristobal "A" Room**
Chair: ***Dr. Marcela Ferrés***, Chile
Dr. Clarisse Machado, Brazil

Round Table
Therapeutic challenges of viral infection in immunocompromised host

1. Posttransplant lymphoproliferative disorders associated to EBV 30 min — ***Dr. Vicki Morrison***, USA
2. Adenovirus: how and when start therapy? 30 min — ***Dr. Per Ljungman***, Sweden

14:45 - 16:00 **San Cristobal "B" Room**
Chair: ***Dra. Mónica Lafourcade***, Chile
Dr. Nora Tiraboschi, Argentina

Round Table Infocus
Antifungal drug resistance in yeasts & moulds

1. Clinical relevance of Biofilms 20 min — ***Dr. David Andes***, USA
2. Hot topics in antifungal resistance 20 min — ***Dr. Thomas Patterson***, USA
3. Hot topics in *Aspergillus* resistance 20 min — ***Dr. Jacques Meis***, The Netherlands

Scientific Program · **Tuesday** · November 15, 2016

14:45 - 16:00 **San Cristobal "C" Room**
Chair: ***Dr. Ricardo Rabagliati***, Chile

TEVA SPONSORED SYMPOSIUM

Invasive Fungal Infections: A Patient Journey to walk

Opening Remarks — ***Dr. Ricardo Rabagliati***, Chile

1. Epidemiology of invasive fungal infections, unusual clinical presentations and their diagnosis — ***Dr. Coleman Rotstein***, Canada
2. Where do the polyenes fit into the treatment algorithms? — ***Dr. John R. Perfect***, USA

16:00 - 17:00 **Foyer**

Coffee & Poster View

17:00 - 18:00 **San Cristobal A+B+C Room**
Chair: ***Dr. Georg Maschmeyer***, Germany
Dr. Luis Thompson, Chile

Plenary Session 4

Top papers in inmunocompromised since 2014 to 2016

1. Children 15 min — ***Dr. Thomas Lehrnbecher***, Germany
2. Adults 15 min — ***Dr. Luis Ostrosky***, USA
3. Microbiology 15 min — ***Dr. Peter Donnelly***, The Netherlands

18:00 - 19:00 **San Cristobal A+B+C Room**
Chair: ***Dr. Ricardo Rabagliati***, Chile
Dr. Thomas Patterson, USA
Dr. Arnaldo Colombo, Brazil
Dr. María Elena Santolaya, Chile

Closing Ceremony and Best Posters Awards

Torres del Paine — Photo: Turismo Chile

Poster 001

Breakthrough fever in pediatric leukemia patients and risk of invasive fungal infections. A 5 years' experience from the Schneider Childrens Medical Center of Israel

Presenter
Salvador Fischer

First Author
Salvador Fischer

Other Authors
Isaac Levi
Isaac Yaniv

Fever in the context of chemotherapy induced neutropenia (F+N) is common in children who are treated for acute leukemia, although infections are confirmed in only 21-25% of these patients. Breakthrough fever (BTF), which is defined as a new episode of fever (>38 C) after an afebrile interval of 48hours) in a patient with neutropenia is considered dangerous it may portend a possible invasive fungal infection(IFI). Evidence based guidelines elaborated by expert panels recommend empiric administration of antifungal therapy for BTF ,but data on the incidence of BTF in children with acute leukemia is sparse. The aim of this study is to study the characteristics of BTF in a cohort of children with acute lymphoblastic and myeloid leukemia. The medical records of all children diagnosed with acute lymphoid or myeloid leukemia at the Scheneider Children's Medical Center in Israel between 2010-2014 were reviewed for episodes of BRF. 139 children were diagnosed with acute lymphoblastic leukemia (ALL) and 29 were diagnosed with Acute Myeloid Leukemia during this period. Sixty-four episodes of BTF occurred, 44 in children with ALL and 20 in patients with AML. An infection was documented in 34% of patients-17(38%) in children with ALL and5 (25%) in children with AML. tree ALL patients and four AML patients have 2 episodes of BTF. Seven patients (11%) sustained IFI – 6 children with ALL (3 episodes of candidiasis and 3 of aspergillosis) and one child with AML (aspergillosis). The incidence of documented infections in patients with BTF in our cohort (34%) is slightly higher than the reported incidence of documented infections in leukemia patients with F+N, and the rate of fungal infections in this special population is high (11%) as compared with that seen in children with fever and neutropenia following chemotherapy(2-7%) .These findings support the current diagnostic and therapeutic practices in leukemia patients with BTF.

Place of Work Schneider Children Medical Center of Israel

Country Israel

Poster 002

Efficacy and safety of Caspofungin in children: Systematic Review and metaanalysis

Presenter
Maria Teresa Rosanova

First Author
Maria Teresa Rosanova

Other Authors
David Bes
Pedro Serrano Aguilar
Leticia Cuellar
Norma Sberna
Roberto Lede

Background: Invasive fungal infections are a major cause of morbidity and mortality in children. Caspofungin is an echinocandin being used as an alternative in the prevention and / or treatment of certain invasive fungal infections in children, even with little evidence on comparative efficacy and safety with standard treatment. **Objectives:** To evaluate the efficacy and safety of caspofungin compared with other antifungal in the prevention and / or treatment of invasive fungal infections in children. **Material and methods:** The initial search strategy aimed to identify randomized controlled trials and systematic reviews by keyword "caspofungin" in patients between 0-18 years. **Results:** Only three publications met the inclusion criteria. Of these, 2 were in children and one in neonates. A higher incidence of adverse effects was not documented for caspofungin and its effectiveness was not inferior to other antifungal comparators. RR 1.47 (95% CI 0.78 to 2.79). **Conclusions:** This systematic review and meta-analysis suggests that caspofungin could be considered an alternative to amphotericin for prevention and treatment of invasive fungal infections in pediatric population. However, given the small number of existing publications, more studies are needed to draw definitive conclusions.

Place of Work Hospital J. P. Garrahan

Country Argentina

Poster 003

Epidemiology and Clinical Impact of Bacteremia in Neutropenic and Nonneutropenic Patients with Cancer and Stem-cell Transplant in the Era of Multiresistance

Presenter
Alberto Angel Carena

First Author
Alberto Angel Carena

Other Authors
Ana Laborde
Inés Roccia Rossi
Graciela Guerrini
Alejandra Valledor
Rosana Jordán
Andrea Nenna
Patricia Costantini
Miguel Dictar
Juan Pablo Caeiro
Fabián Herrera

Background: The characteristics and outcomes of bacteremia in cancer and Stem Cell Transplant (SCT) patients can be different depending if the episode occurs during neutropenia. **Objectives:** To describe and compare the characteristics and outcomes of episodes of bacteremia in patients with cancer and SCT, depending if the episode occur in patients with neutropenia vs without neutropenia. **Methods:** Prospective, multicenter study. Episodes of bacteremia in adults' patients with cancer and SCT were included in 10 centers of Argentina specialized in treating these patients, from July 2014 to January 2016. We compare the patients with neutropenia (G1) vs patients without neutropenia (G2). Categorical variables were analyzed by the Fisher exact test or the Chi-square test as appropriate, and continuous variables were analyzed by the U Mann-Whitney test. The 30-day mortality was examined by the Kaplan-Meier method with the log-rank test and the Cox regression model used to test statistical significance. **Results:** Four hundred and sixty episodes of bacteremia were included, 291 (63,3%) had hematological tumor (HT), 79 (17.2%) had solid tumor (ST) and 90 (19.6%) had received an SCT. Gram Negative rods (GNR) were isolated in 297 episodes (64.6%), being Escherichia coli (20%), Klebsiella spp. (19.3%) and Pseudomonas aeruginosa (8.5%) the most frequent. In 175 (38%) Gram Positive cocci (GPC) were identified, being Coagulase-negative staphylococci (CoNS) (13.3%) and Staphylococcus aureus (SA) (10.7%) the most common. Two hundred and eleven episodes (45.9%) had Multidrug Resistant Bacteria (MDRB), being the most frequent extended spectrum beta-lactamase (ESBL)-producing Enterobacteriaceae (28.4%), multidrug-resistant CoNS (22.3%), carbapenemase (KPC)-producing Enterobacteriaceae (11.8%) and multidrug resistant Acinetobacter spp (9%). From the total of episodes 289 (62,8%) occurred in patients with neutropenia (G1), being 90.7% high risk neutropenia by clinical variables and 84.8% high risk by MASCC score. The median length of neutropenia was 13 days. Comparing both groups, episodes in G1 were more frequently caused by GNR (70.6 vs 54.4%, p=0.0001) and by MDRB (54.3 vs 31.6%, p=0.0001), especially ESBL-producing Enterobacteriaceae (17.6 vs 5.3%, p=0.0001), had more abdominal infections (34.3 vs 15.8%, p=0.0001) and more frequently mucositis was the source of infection (10.8 vs 2.3%, p=0.003), and had higher median Apache II scores (13 vs 12, p=0.0001). Episodes in G2 occurred in older patients (median 55 vs 49 years, p=0.0001), had more ST as underlying disease (33.3 vs 7.6%, p=0.0001), GPC (48.5 vs 31.8%, p=0.0001) and methicillin-resistant SA (7 vs 2.4 %, p=0.017). In G2 urinary tract infection was more frequent than in G1 (18 vs 1,9% p= 0,0001). Empiric antibiotic therapy was appropriate in 72.7 vs 81.3%, (p=0.037) in G1 versus G2 respectively. Empiric carbapenem (43.9 vs 28.7%, p=0.001) and colistin use (21.8 vs 9.4%, p=0.001) was more frequent in G1. Episodes in G1 presented more frequently with shock (23.5 vs 15.2%, p=0.032), breakthrough bacteremia (13.8 vs 5.8%, p=0.008) and higher 7-day mortality (16.6 vs 9.4%, p=0.03). However, 30-day mortality was similar in both groups (G1:22.5 vs G2:18.7%, p=0.225) (Kaplan-Meier). In multivariate analysis risk factors for 30-day mortality (Cox regression) were a high APACHE II score (>24) (HR=3.57, IC95% 1.9-6.6, p=0.0001), a high PITT score (>4) (HR=3.8, IC95% 2.2-6.7, p=0.0001) and having a MDRB bacteremia (HR=2.29, IC95% 1.5-3.6, p=0.0001). The 30-day mortality in patients with MDRB was 27.5% vs 15.7% in non-MDRB (p=0.002).**Conclusions:** The episodes of bacteremia in cancer and SCT patients that occurred during neutropenia had different characteristics and higher severity compared to patients without neutropenia. Despite this, 30-day mortality was similar in both groups. Since MDRB bacteremia was associated with higher mortality, every effort should be done for identifying patients at risk and treating them accordingly.

Place of Work Argentinean Bacteremia in Cancer and SCT Study Group
Country Argentina

Poster 004

Cutaneous Fungal infections in renal transplant recipients: surprising but traitorous.

Presenter
Anoek A. E. De Joode

First Author
Anoek A. E. De Joode

Other Authors
Greetje A. Kampinga
Sander Van Assen

Background/Introduction: Renal transplantation is now treatment of choice for most patients with renal failure; however, infectious complications related to immunosuppression remain major cause of morbidity and mortality. Although disseminated mold infections are rare, treatment is often prolonged and difficult. Mortality can be as high as > 50%. Clinical presentation is non-specific which often cause an important delay in diagnosis. Nevertheless, due to a growing worldwide use of immunosuppression, a high suspicion for fungal infections, which needs an aggressive diagnostic and therapeutic approach, is warranted. **Goals:** Underscore the need for vigilance in immunocompromised patients since also seemingly harmless cutaneous abnormalities can harbour malicious micro-organisms. **Materials and Methods:** Three consecutive renal transplant recipients were diagnosed with cutaneous fungal infections. Frequent visits were necessary to optimize immunosuppressive and antifungal therapy, adjust medication due to numerous interactions and monitor results and side effects. **Results:**Patient A, female, 70 years old, 3 years after renal transplant and high dose methylprednisolone for rejection, was treated for several months with miconazole for an unusual cutaneous laesion (4.5 x 5.5 cm) on the right wrist. She liked gardening but could not remember a specific trauma. The laesion was tender, guirlande-shaped, crusted and discoloured with multiple nodules and pustules. Patient B, female, 70 years old, 3 months after second renal transplant with anti-thymoglobuline-induction treatment, was seen because of a tender purple fluid-filled plaque (4.5 x 3.5 cm) on the right hand, which arose after bumping the hand to the sink while cleaning it. Patient C, male, 66 years, 1.5 years after renal transplant, standard triple immunosuppression, had a erythematous scaly laesion, with variable plaques, papules and pustules, on his left wrirt for 6 months. He was prescribed miconazole without results. His hobbies were gardening and he kept fish in an aquarium. Skin biopsies were taken for histological examination and cultures. Biopsy of patient A revealed granulomatous tissue changes in upper but also deeper skinlayers; on cultures of a second biopsy a Fusarium petroliphilum (solanii-complex) was found. Biopsied tissue of patient B showed oedematous dermal changes with infiltration of neutrophils, lymphocytes and plasma cells and vascular expansion. By PAS and diastase staining, hyphes and sporules were found; in culture an Alternarium species was isolated. Biopsy of patient C showed a few neutrophils but clear fungal hyphal elements in stratum corneum; cultures showed a Trichophyton rubrum. In patient A, screening for metastatic disease showed no abnormalities. Minimal inhibitory concentrations (MIC, in mg/L) determined by our national reference laboratory (EUCAST method) were as follows Amfotericin B (AmB) 2 voriconazole (VCZ) 4 ; itraconazole (ITZ) 16 ; posaconazole (POS) 16; isavuconazole (ISA) 16, anidula- and micafungin >16. VCZ 200 mg twice daily was started and continued for three months, combined with locally chloorhexidine. Treatment had to be adapted frequently due to unstable trough levels of both VCZ and tacrolimus. Four months afterwards, Fusariose re-appeared. An excision of affected skin followed while being on liposomal amfotericine B, 5 mg/kg (MIC new isolate AmB 0.5; VCZ > 16 mg/l), aiming to apply this for 10 days. However, it was discontinued at day 5 because of decline in kidney function. Patient B was treated with POS 300 mg daily (MIC AmB 0.5; VCZ 2 ; ITZ 0.25 l; POS 0.063l; ISA 0.5; ; anidulafungin 0.031; ; micafungin 0.031 mg/l). On the same day, a debulking surgery was accomplished; five days later a skin transplant followed. Treatment was continued for three months: she is still free of fungal disease. Patient C was treated with itraconazol 100 mg once daily during four weeks and locally olamine –crème (Loprox®). Kidney function and trough tacrolimus levels were not affected and until now he did not have relapse of disease.
Conclusions: Fungul infections are of growing concern for specialists working with immunocopromised hosts. Due to the variable symptoms, the often vicious course of disease, and the numerous interactions between necessary medication, a dedicated multidisciplinary team is needed to warrant an optimal outcome.

Place of Work University of Groningen; University Medical Center, Groningen Country The Netherlands

Poster 005

Evaluation of Two Different Matrix-Assisted Laser Desorption / Ionization Time-Of-Flight Mass Spectrometry Systems for Identification of Anaerobic Bacteria.

Presenter
Abdullah Kilic·

First Author
Abdullah Kilic

Other Authors
Eyup Dogan
Sinem Kaya
Mehmet Ali Saracli
Mehmet Baysallar

Background: Anaerobic bacteria are the most important members of the bacterial flora of human skin and mucous membranes. Anaerobic bacteria are also known as important agents of brain, lungs, pelvis and abdominal infections especially in immunocompromised patients. To apply of timely and appropriate antimicrobial therapy, anaerobic bacteria must be identified at the species level. **Goals:** Aim of the study was to evaluate the performance of two commercial MALDI-TOF MS (Bruker MS [Bruker Daltonics, Billerica, MA, USA] and the VITEK MS [bioMerieux, Marcy l'Etoile, France]) systems in anaerobic bacteria isolated from various clinical samples. **Materials and methods:** A total of 60 anaerobic bacteria isolated from various clinical specimens isolated between January 2011 and December 2014 were included in the study. Microorganisms were defined by colony morphology, Gram stain, API 20 (bioMerieux) and / or the ANC VITEK 2 card (bioMerieux). The isolates were stored in 10% skim milk solution at -80ºC. Isolates were sub-cultured onto Brucella blood agar plates and were defined by Bruker MS and VITEK MS. Microorganisms which were identified with the same name at the genus and / or species level by any two of the three systems (Bruker MS, VITEK MS and API 20 or VITEK 2 ANC) were considered to be defined correctly. **Results:** 55 out of 60 clinical anaerobic isolates were identified with the same name at genus and / or species level by at least two systems. VITEK MS identified correctly 51 isolates (92.7%) at species level and 43 isolates (87.7%) at genus level. Bruker MS identified correctly 53 isolates (96.3%) at species level and 47 isolates (95.9%) at genus level. API 20 and / or the VITEK 2 ANC card identified 50 isolates (90.9%) at species level and 44 isolates (89.7%) at genus level of the 55 clinical isolates. Propionibacterium species were found to be the most frequently identified anaerobic bacteria (50.9%) from clinical samples by the three commercial methods. **Conclusions:** In conclusion, MALDI-TOF MS is a fast, simple and cheap method for the identification of anaerobic bacteria in the clinical microbiology laboratory except for the cost of installation, and it is expected to replace conventional methods for identification of anaerobic bacteria in clinical microbiology laboratories.

Place of Work Gulhane Military Medical Academy, 06010, Etlik, Ankara

Country Turkey

Poster 006

Invitro Antimicrobial Activity of Doripenem, Imipenem and Meropenem against Ertapenem-Resistant *Klebsiella pneumoniae*.

Presenter
Abdullah Kilic

First Author
Abdullah Kilic

Other Authors
Eyup Dogan
Sinem Kaya
Gurkan Mert
Mehmet Baysallar

Background: Klebsiella pneumoniae is an important nosocomial pathogen. Carbapenem resistance among K. pneumoniae has dramatically increased worldwide over the past ten years especially in immunocompromised patients. **Goals:** The aim of this study was to investigate the presence of doripenem, imipenem and meropenem resistance in a total of non-duplicated 93 ertapenem resistant K. pneumoniae strains recovered from various clinical samples between 2002 and 2015. **Materials and methods:** Identification of isolates was performed by MALDI-TOF-MS (Bruker MS [Bruker Daltonics, Billerica, MA, USA]. Antibiotic susceptibility of isolates was performed by Etest (Oxoid, Thermo Fisher Scientific, Basingstoke, UK) and was interpreted by the Clinical and Laboratory Standards Institute (CLSI). Molecular characterization of blaOXA-48, blaNDM-1, blaKPC, blaIMP and blaVIM was performed by PCR on clinical isolates. **Results:** All isolates were resistant to ertapenem (Minimum inhibitory concentrations [MICs] ranged 4 - 32 µg/mL). MICs for imipenem, meropenem and doripenem ranged from 0.025 to 0.32 µg/mL, 0,38 to 32 µg/mL, and 0.25 to 32 µg/mL, respectively. Among the three studied carbapenems, imipenem was the most active against the ertapenem resistant K. pneumoniae strains (18,2%). Six ertapenem resistant K. pneumoniae strains (6,4%) were found to be susceptible to meropenem and doripenem. **Conclusions:** Imipenem showed the best in vitro activity against the ertapenem resistant K. pneumoniae other than meropenem and doripenem. Our results suggest that carbapenems other than ertapenem may still be effective against these strains and laboratory testing for non-susceptibility to other carbapenems should be performed routinely and monitored carefully.

Place of Work Gulhane Military Medical Academy, 06010, Etlik, Ankara

Country Turkey

Poster 008

A New Murine Model of Cutaneous Aspergillosis in a Large Cutaneous Defect.

Presenter
Dimitrios Kontoyiannis

First Author
Alexander Tatara

Other Authors
Nathaniel Albert
Antonios Mikos
Dimitrios Kontoyiannis

Introduction: Cutaneous aspergillosis is a clinically challenging condition to resolve, resulting in large necrotic ulcers with poor innate regenerative capacity. In order to better understand this disease process, as well as build a platform for developing improved therapeutic strategies, we have created a novel murine model of cutaneous aspergillosis featuring a skin defect. This model recapitulates the impaired wound healing and chronic Aspergillus infection seen in immunocompromised patients. **Goals:** The objective of this work was to produce a mammalian model of cutaneous aspergillosis in a large dermal wound, wherein the sustained infection inhibits normal wound healing as seen in human pathophysiology. **Materials and Methods:** BALB/c mice immunosuppressed by an established cyclophosphamide and corticosteroid protocol (Ben-Ami et al., Blood 2009) were inoculated with subcutaneous injections of either saline or 1.75x106 conidia/mL A. fumigatus Af293. 72 hours later, a full-thickness surgical wound of 5 mm was created with a sterile biopsy punch and the wound was re-inoculated at the same dosage. Every 3 days, the size of the wound bed was measured. Mice were euthanized at Day 9 (n=5 per group, performed in duplicate) and Day 18 (n=5 per group). After euthanasia, the wound bed was harvested subjected to histologic analysis for host inflammation and presence of fungi. **Results:** As early as day 9, wound area was (compared to the initial wound) was significantly reduced in non-infected animals (-39.0%, p=0.017) but not significantly different in the infected group (-13.5%, p=0.55). Viable A. fumigatus could still be recovered from the wound bed at least two weeks after the initial infection. Histology revealed the presence of hyphae and inflammation in infected wound beds at time of euthanasia. In this work, we have successfully created a murine model of chronic cutaneous aspergillosis infection of a large tissue defect with impaired wound healing. Unlike previous work (Ben-Ami et al., Blood 2009), this model allows for **1)** real-time longitudinal tracking of gross tissue healing of a large cutaneous Aspergillus-infected wound, **2)** chronic cutaneous aspergillosis, and **3)** the ability to test novel local therapies for fungal-infected wound beds in the future. Our model reproducibly recapitulates the chronic wound bed observed in difficult clinical cases of disease and may act as a platform for translating therapies in the future.

Place of Work The University of Texas MD Anderson Cancer Center

Country USA

Poster 009

2016 AWARD NOMINEE ICHS-INFOCUS

Changes in Resistance Patterns to *Aspergillus*-Active Triazoles in Patients with Hematological Malignancies

Presenter
Dimitrios Kontoyiannis

First Author
Alexander Tatara

Other Authors
Nathaniel Albert
Antonios Mikos
Dimitrios Kontoyiannis

Introduction: Triazole resistance is a growing concern with the widespread use of these agents in patients with hematological malignancies. In this study, we screened for triazole resistance in 290 Aspergillus unselected clinical isolates recovered from respiratory sources in patients with hematological malignancies at MDACC, collected from 1999-2015. In vitro resistance patterns were evaluated before and after 2002, the time when new Aspergillus-active triazoles (voriconazole (VRC), posaconazole (PCZ)) were introduced at the University of Texas MD Anderson Cancer Center. **Goals: T**he objective of this work was to determine if there have been changes in resistance to Aspergillus-active triazoles since the introduction of VRC and PCZ, and if any changes in resistance are species- and/or triazole-dependent. **Materials and Methods:** Clinical isolates (A. flavus, A. fumigatus, A. terreus, and A. niger) from 1999-2002 (n=183) and 2003-2015 (n=107) recovered from patients with hematological malignancy at MDACC were screened for resistance against itraconazole (ITRA), VRC, and PCZ using the four-well multidish method (Van der Linden et al., Mycoses 2009). MIC was confirmed in resistant species by broth microdilution antifungal susceptibility testing (CLSI M38-A2). MIC breakpoints for resistance were defined by EUCAST standards. Isolates were labeled as pan-susceptible if they were resistant to no drugs, mono-resistant if resistant to one drug, multi-resistant if resistant to two drugs, and pan-resistant if resistant to all three triazoles. Changes in Aspergillus resistance after 2002 were compared by species. **Results:** When comparing isolates before and after 2002, statistically significant decreases were observed in the amount of pan-susceptible isolates of A. fumigatus (90/97 (92.8%) vs. 41/53 (77.4%), p = 0.0097) and A. niger (17/21 (81.0%) vs. 5/15 (33.3%), p = 0.0061). Likewise, the prevalence of multi-resistant isolates statistically significantly increased for A. fumigatus (3/97 (3.1%) vs. 8/53 (15.1%), p = 0.0170) and A. niger (2/21 (9.5%) vs. 10/15 (66.7%), p = 0.0008) over this time period. No statistically significant changes in isolate resistance were observed for A. flavus or A. terreus and no pan-resistance in any species was observed. Since the widespread use of triazoles, rates of multi-resistant Aspergillus isolates have significantly increased in hematological patients our institution as a species-specific phenomenon. As PCZ and VRC are first-line choices for prophylaxis and treatment for invasive aspergillosis respectively, this change in resistance patterns might have therapeutic implications. Further studies are needed to capture the clinical correlates of resistance and its genomic determinants.

Place of Work The University of Texas MD Anderson Cancer Center

Country USA

Poster 010

Real-world use of Posaconazole extended release tablets in Patients with Hematologic Malignancy

Presenter
Dimitrios Kontoyiannis

First Author
Frank Tverdek

Other Authors
Sang Taek Heo
Samuel Aitken
Bruno Granwehr

Background: Posaconazole (PCZ) is the preferred mold-active azole for prophylaxis against invasive fungal infection (IFI) in patients with hematologic malignancy (HM). An extended release tablet formulation of PCZ with improved pharmacokinetics versus the suspension has recently become available, but clinical data are limited. **Goals:** The purpose of this study was to examine the real-world pharmacokinetics and prophylactic effectiveness of PCZ tablets in patients with HM. **Methods:** This is a retrospective cohort of adult inpatients (≥18 years) with HM who received ≥3 days of PCZ tablets from 12/2013 to 10/2015 for primary IFI prophylaxis. Clinical information and concomitant drug use data were collected and correlated with low PCZ serum levels (<700ng/mL). Rates of IFIs, defined according to EORTC/MSG criteria, were assessed. Only the first inpatient prophylaxis episode was assessed for patients with multiple episodes. **Results:** 279 patients (mean age 56.3 ± 17.8 y; 56% male) were included. 93.2% had leukemia or myelodysplastic syndrome, 19.7% had prior hematopoietic stem cell transplant (HCT), and 80.7% had active malignancy. 62 patients had PCZ levels obtained with a median (IQR) value of 1380 ng/mL (859 – 1890). 17.8% of levels were low. Among 12 patients with two PCZ levels obtained without dose modification, the median (IQR) variability was 65.4% (28.8 – 156.8). Patients with low levels were younger compared to those with high levels (mean 45.0 ± 17.7 vs 59.4 ± 14.0 y, p = 0.038). Classification and regression tree (CART) analysis showed that patients age <41 y were more likely to have low levels than those ≥41 y (50.0% vs 10%, p = 0.001, OR 9.0 [95% CI 2.1 – 38.8]). Body weight and body mass index did not correlate with low PCZ levels. Probable IFIs occurred in 5 patients (2%), all with levels >700ng/ml. **Conclusions:** We describe the largest series of PCZ tablet prophylaxis to date. PCZ tablets were effective as prophylaxis with 2% probable breakthrough IFIs that occurred exclusively in patients with levels >700ng/mL. Careful assessment of epidemiology for PCZ resistant or tolerant fungi and PCZ therapeutic drug monitoring targets are warranted.

Place of Work University of Texas MD Anderson Cancer Center

Country USA

Poster 011

Does presence of *Candida* worsen pain and Dysphagia in patients receiving Radiotherapy for Locally Advanced Head and Neck Cancers? An observational Study.

Presenter
Sushmita Ghoshal Chakrabarti

First Author
Sushmita Ghoshal Chakrabarti

Other Authors
Shivaprakash Rudramurthy
Rajit Ratan Pandita
Shreya Singh
Deepika Saha
Meenu Chandra
Arunaloke Chakrabarti

Background: Patients of locally advanced head and neck cancers complain of pain and dysphagia which often worsens due to radiation induced mucositis. **Goals:** The present observational study was conducted to evaluate the role of *Candida* in worsening of radiation induced symptoms. **Materials and Methods:** During the period of March – May 2016, consecutive patients of locally advanced head and neck cancers being treated with radical radiation were enrolled for this study. These patients were treated with conventional 2-D external beam radiotherapy 60 -66 Gy/ 30 – 33# over 6 – 6.5 weeks. Patients were evaluated weekly to monitor radiation reactions including mucositis using CTCAE criteria. To detect the presence of fungal colonization of the oral cavity, estimated oral rinse specimens were taken from all the patients just before starting radiation and on a weekly basis thereafter. A fixed amount of specimen was processed for isolation of yeast along with colony count. All yeasts isolated were identified. Statistical analysis was done using SPSSv17 and Pearson's Correlation to evaluate any relation between severity of symptoms and colony count of *Candida*. **Results:** Consecutive 53 patients were enrolled in the study; out of which two could not complete treatment. Among the remaining 51, 30 had primary tumours in the oral cavity and oropharynx. The maximum incidence and severity of mucositis, pain and dysphagia was noted at the completion of three weeks of radiation. Baseline oral rinse specimen revealed Candida colonization in 15 patients. Candida isolation increased to significantly in 30 patients at the end of third week. C. albicans was the commonest specie isolated. The median colony count increased to a maximum of 5 x 103 at the end of third week. At that time, the incidence of Grade 2 or more dysphagia was more in Candida positive patients (53.3% vs. 14.3% p=0.0005). There was no statistically significant correlation between Candida positivity and incidence of grade 2 or more pain (13.3% vs. 14.3% p= 0.616). However, severity of pain had increased twofold or more from baseline in patients whose colony count exceeded the median (38.9% vs. 7.1% p= 0.006). **Conclusions:** Colonization of the oral cavity by Candida species increases with increasing mucositis during the course of radiation for head and neck cancers. The presence of these yeasts is likely to increase the morbidity by worsening symptoms like pain and dysphagia.

Place of Work Postgraduate Institute of Medical Education and Research

Country India

Poster 012

Systemic antifungal use in critically ill patients. An ICU observational study, 2010-2015

Presenter
Fernando Riera

First Author
Fernando Riera

Other Authors
Francisco Govedic
Marcos Marino
Federico Romero
Eugenia Meyer
Cayetano Galletti
Carlos Bergallo

Introduction: There are limited data about the use of antifungal agents (AF) in critically ill patients and treatment trends since the inclusion of the new generation AF. The use of these agents may have a significant influence on the development of new resistances. **Methods:** Observational prospective study of the systemic use of AF in patients admitted to an intensive care units (ICU) in Córdoba register, from 2010 to 2015. The annual use, the indications that led to that use and, the intra-ICU infections, the AF employment related per 1000 patients/day (pd), were observed. **Results:** Of the 2786 DOT per 1000/days of antimicrobial use, prescriptions for AF were 493 dot/1000 pd (17,69%). Fluconazole was the most employed AF 65%, followed by Anfotericin B 29% (lipidic and coloidal) and Echinocandins 6% respectively. The total therapy days were 138.81 DOT p/1000 days, annual average of 12,97. Distribution use it was: Fluconazol 65%, Anfotericin 29% and Echinocandins 6%. An increase in AF use was observed from 10.44 dot in 2010 to 15,63 dot per 1000 patients/days in 2015. An increase in the use of fluconazole was observed and a stable consumption over time for Anfotericin B and echinocandins. As regards the intra-ICU infections, the AF, Fluconazol was ordered empirically in 70% of the indications. Anfotericin B and Echinocandins were used mainly with confirmed diagnosis and not approved for preventive use in the hospital. Regarding the echinocandins, its use began in 2012. Antifungal resistance rate is low and has not yet been detected resistance to Echinocandins **Conclusions:** Assessment consumption of AF in ICU, it is a more important component of antifungal stewarship. Fluconazole is the most used antifungal agent in critically ill patients, and their use is mainly empirical, explained this behavior because the most frequently suspected and diagnosed in icu infection candidemia. Echinocandins have been recently introduced in our environment and still use is low compared to other antifungals and still we not detect resistance.

Place of Work Sanatorio Allende

Country Argentina

Poster 013

Cost Effective Management of Non-Interferon Based Therapy for Chronic Hepatitis C Virus (HCV) in a Free Clinic Setting

Presenter
Marianito O. Asperilla

First Author
David M. Klein

Other Authors
Janan Hishmeh
Raymond Yu
Cindy Neads
Louie Boco

Background: The Charlotte County, Florida, Community Health Assessment 2014 identified 493 Hepatitis C (HCV) cases. Charlotte County is ranked as having the 7th highest incidence for HCV in Florida. HCV is the most common cause of blood-borne infections and it is the most common reason for liver transplants in the United States. Charlotte County has an uninsured population of 19% leading to lack of access to healthcare or inadequate health insurance coverage. Patients could be either treatment naïve or non-naïve. Recent advances in medication with sofosbuvir/ribavirin or ledipasvir/sofosbuvir have confirmed to be successful in eradicating HCV. This study was limited to patients at least 18 years of age who were uninsured and involved an in-depth diagnosis, treatment, and evaluation. This study reports a free clinic's cost effective results of clinical management of 40 patients with HCV using (sofosbuvir/ribavirin for genotype1, 3, & 4 for 24 weeks and sofosbuvir/ribavirin for genotype 2 for 12 weeks or ledipasvir/sofosbuvir for genotype 1, 2, 3, & 4 for 12 weeks). The two-year reporting period (2013-2015) includes assessment prior to, response of, and management of side effects throughout treatment. **Results:** Among the 40 patients, all 40 completed therapy with 37 attaining sustained viral response (SVR) at 12 or 24 weeks (end of therapy). Of the 40 patients, 38 patients had HCV genotype 1, 1 had genotype 2, 1 had genotype 3. 3 of the 38 patients with genotype 1 did not attain SVR with initial treatment were placed on ledipasvir/sofosbuvir for 12 weeks and attained SVR at completion of 12 weeks (end of therapy). Minimal side effects were noted in patients with the treatment of sofosbuvir/ribavirin. Side effects included 1 patient with anemia managed with weekly laboratory monitoring. 1 patient with hyperammonemia managed with rifaximin. 3 patients with headaches were prescribed over the counter medication and headaches sub-sided after the first 2 months of therapy. No side effects were noted in patients treated with ledipasvir/sofosbuvir. Therefore, discontinuation of therapy was not necessary. Within a 24 month period, $50,000 received from county funding was used for laboratory and imaging expenses. Local hospitals and imaging centers donated additional services that exceeded the $50,000 grant funds. Sofosbuvir/ribavirin 24 week medication regimen is an estimated $204,300 while ledipasvir/sofosbuvir 12 week medication regimen is an estimated $113,400. All patients received 100% of their medications through the Patient Assistance Program at Gilead and AbbVie. **Conclusion:** As of 2014, the cost of a liver transplant in the United States estimated at $482,800. The free clinic in Charlotte County, Florida used a cost effective approach through volunteer services, county grants, community involvement, and Patient Assistance Program. This treatment regimen has proven to be less invasive with a success rate of 92.5% sofosbuvir/ribavirin and 100% ledipasvir/sofosbuvir.

Place of Work Virginia B Andes Volunteer Community Clinic

Country USA

Poster 014

Invasive aspergillosis after Hematopoietic Stem Cell Transplantation in Pediatric Patients

Presenter
Ana Cristina Mendonça

First Author
Renata Fittipaldi Guimarães

Other Authors
Victor Gottardello Zecchin
Ana Cristina Mendonça
Virginio C.A. Fernandes Junior
Luiza S.S. Milare
Cintia Monteiro
Adriane S.S. Ibanez
Fabianne A.M.C. Carlesse
Arnaldo Lopes Colombo
Adriana Seber

Introduction: Invasive fungal disease (IFD) is a serious complication in patients undergoing Hematopoietic Stem Cell Transplant (HSCT) with high morbidity and mortality and high cost of prolonged treatment. Although *Candida* spp is the most common etiological agent, the incidence of filamentous fungi is increasing, mainly infections caused by Aspergillus spp. Since 2009, the positive serum galactomannan has helped to classify patients with suggestive radiological image as having probable invasive aspergillosis, without the need to biopsy (EORTC 2008). The published data on aspergillosis in children in Brazil and around the world are extremely scarce. **Objective:** To evaluate the incidence of invasive aspergillosis (IA) according to EORTC 2008 criteria, in children undergoing HSCT. **Methods:** Retrospective cohort study of patients undergoing HSCT from January 2009 to December 2015 in the "Instituto de Oncologia Pediatrica (IOP/Graacc/Unifesp)", Sao Paulo, Brazil. In the review of medical records were analyzed age, sex, donor, underlying disease, infection site, galactomannan level, chest tomography, cultures results and pathology. The criteria of the EORTC 2008 were used to classify the IAs in possible, probable and proved. Patients who had possible IA were excluded from analysis. **Results:** In seven years, it was performed 300 transplants in 274 patients: 153 (51%) allogeneic transplantation: 81 related and 72 unrelated. We identified 38 patients with invasive fungal infection, 13% of all transplantations or 25% of allogeneic HSCT. No patient had undergone autologous HSCT. Of the 38 patients, 17 had possible IFD, with suggestive image but negative galactomannan and 4 patients had not filamentous fungus infection and were excluded from the analysis. Seventeen children (6%) were diagnosed with IA, 9 probable (positive galactomannan) and 8 proved (positive culture). Aspergillus fumigatus was isolated in 5 cases. One patient had co-infection with Aspergillus fumigatus and Zigomiceto. The 17 patients had a mean age of 11 years and most of them (70%) had acute leukemia: AML (6), ALL (5), mixed phenotype leukemia (1), myelodysplastic syndrome (1), aplastic anemia (2), DCG (1) and HLH (1). Ten of the 17 patients underwent unrelated HSCT and among the 7 related transplants, 2 were haploidentical and 3 were second tranplants. The affected sites were lung (15), sinuses (1) and jaw (1). The death rate was 70%, but 4/12 patients also had recurrence of the underlying disease. Four patients are alive between 1 and 3 years after HSCT. **Conclusion:** IA was the most common IFD among patients undergoing allogeneic HSCT, with an incidence of 11%. Highest risk groups are: unrelated, haploidentical or second HSCT, suggesting that prophylaxis against filamentous fungus as well as serially and rigorous research with galactomannan and image should be made in this population, especially considering the lethality of 70% when infections occur.

Place of Work Instituto de Oncologia Pediatrica - IOP/Graacc/Unifesp

Country Brazil

Poster 015

Education program to parents of children with cancer and their impact in the level of knowledge, perception of hospital care and occurrence of adverse events.

Presenter
Verónica De la Maza

First Author
Verónica De la Maza

Other Authors
María Soledad Fernández
Evelyn Vogel
Erica Peña
Macarena Manriquez
Magdalena Castro
Paola Viveros
Juan Pablo Torres

Backgrounds: Parents of children with cancer must receive information related with their child disease for an optimal care. **Goal:** The aim of this study was to determine the effect of an educational program to parents of children with recently diagnosis of cancer in the level of knowledge, perception of hospital care and occurrence of adverse events. **Materials and methods:** Experimental, prospective and multicenter study in parents with children with recently diagnosis of cancer in two reference children´s hospitals in Santiago, Chile. In one center, parents received and educational intervention (experimental group) and the second center did not received intervention (control group). We evaluated the level of knowledge of child disease at day 1, 10 and 90, perception of hospital care at day 1 and 120 and occurrence of adverse events during one year. **Results:** A total of 72 parents were enrolled between June 2014–November 2015 (36 in each group). At day 1, both group had the same number of correct answers, but at day 10 we observed a significant increase in correct answers in the experimental group ($p < 0.001$). At day 90, a trend toward a higher number of correct answers was observed in the experimental group. Perception of hospital care was similar in both hospitals; days of hospitalization because of fever (without neutropenia and not related with chemotherapy) was significantly higher in the control group ($p<0.002$) as same as a trend toward a higher number of central venous catheter infection episodes. **Conclusion:** Our results suggest that an educational program by the nurse to parents of children with cancer, increase the level of knowledge at the beginning of the disease and lower adverse events might be observed in this group. Implementation of systematic educational programs should be considered for parents of children with cancer in hospitals delivering care of this susceptible population.

Place of Work Facultad de Medicina. Departamento de Pediatría y Cirugía Infantil Oriente

Country Chile

Poster 016

2016 AWARD NOMINEE ICHS-INFOCUS

Roles of Plasma Soluble Cluster of Differentiation 14 (sCD14) in Predicting Bacteremia and Documented Infection in Hematological Patients with Febrile Neutropenia

Presenter
Methee Chayakulkeeree

First Author
Methee Chayakulkeeree

Other Authors
Ampon Pornngarm
Phatharajit Phatharodom

Introduction: Febrile neutropenia is a serious complication in hematological patients receiving chemotherapy with a mortality rate up to 30%. Documented infection in these patients was found in only 20-30% and the rest was categorized as neutropenic fever of unknown origin (FUO). Plasma soluble CD14 (sCD14), a novel inflammatory biomarker for diagnosis of bacterial sepsis, has been controversial for use in diagnosis and predicting outcomes in febrile neutropenic patients. **Goals:** We aimed to evaluate the roles of plasma sCD14 in association with bacteremia, documented infection and outcomes in patients with febrile neutropenia. **Materials and methods:** This prospective cohort study enrolled chemotherapy-treated hematological patients admitted to Siriraj Hospital, Thailand, during July 2014-February 2015. All patients had an oral temperature >38.5°C or two consecutive readings of >38.0°C for 2 hours and an absolute neutrophil count <500 cells/mm3, or expected to fall below 500 cells/mm3. Clinical and microbiological data and treatment outcomes were collected. Plasma sCD14 were measured at day 1, 2, 3 after the onset of fever. Levels of plasma sCD14 were analyzed. **Results:** A total of 63 patients were enrolled with 90 episodes of febrile neutropenia. Median age was 43 (19-64) years and 42.9% were male. The most common underlying disease was acute myeloid leukemia (58.7%), followed by non-Hodgkin lymphoma (27.6%) and acute lymphoblastic leukemia (15.9%). Documented infection was found in 54.4% and bacteremia was found in 28.9% with the most common pathogen was Escherichia coli (27.3%), followed by Klebsiella pneumoniae (23.6%). There were 16.7% of patients had unfavorable outcomes. A total of 81 febrile neutropenic episodes had plasma sCD14 level at day 1 (CD-d1), day 2(CD-d2) and day 3 (CD-d3) for analysis. The median CD-d1, CD-d2 and CD-d2 of patients with documented infection versus FUO were 440 vs. 347 pg/mL (p 0.079), 533 vs. 414 pg/mL (p 0.005) and 563 vs. 452 pg/mL (p 0.028), respectively. The median CD-d1, CD-d2 and CD-d2 of patients with versus without bacteremia were 466 vs. 366 pg/mL (p 0.129), 568 vs. 445 pg/mL (p 0.014) and 612 vs. 477 pg/mL (p 0.055), respectively. The median CD-d1, CD-d2 and CD-d2 of patients with favorable and unfavorable outcomes were 436 vs. 299 pg/mL (p 0.193), 481 vs. 373 pg/mL (p 0.631) and 508 vs. 497 pg/mL (p 0.947), respectively. **Conclusions:** Plasma sCD14 measured at day 2 and 3 after febrile neutropenia is associated with documented infection whereas only plasma sCD14 measured at day 2 is associated with the presence of bacteremia. There was no correlation between treatment outcomes and the levels of plasma sCD14 at day 1, 2 or 3.

Place of Work Department of Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University

Country Thailand

Poster 017

2016 AWARD NOMINEE ICHS-INFOCUS

Efficacy and Safety of Pre-emptive versus Empirical Antifungal Therapy in Children with Cancer, Fever and Neutropenia

Presenting
María Elena Santolaya

First Author
María Elena Santolaya

Other Authors
Ana Álvarez
Carmen Avilés
Juan Tordecilla
Milena Villarroel
Marcela Zubieta
Verónica De la Maza
Romina Valenzuela
Marcela Rabello
Mauricio Farfán
Juan Pablo Torres

Background: Current recommendations propose to begin empirical antifungal therapy at day five of fever in patients with chemotherapy-associated neutropenia. **Goal:** The aim of this study was to determine efficacy and safety of pre-emptive versus empirical antifungal therapy in children with cancer, persistent fever and neutropenia. **Materials and methods:** Prospective, multicenter, randomized study. Children presenting with persistent high risk febrile neutropenia (HRFN) (fever and neutropenia at day 4 of evolution) at five hospitals in Santiago, Chile, were evaluated with a clinical/microbiological/ molecular/imaging study and randomized into a current empirical antifungal management (group A) versus pre-emptive antifungal therapy (group B).The pre-emptive group received antifungal therapy only if the persistent fever and neutropenia was accompanied by clinical/microbiological/molecular or imaging predefined criteria. End point were days of fever/ hospitalization/ antifungal use, resolving uneventfully/ developing IFI/need for intensive care unit (ICU) and death. **Results:** A total of 945 FN episodes was evaluated between June 2012-December 2015. Of them, 462 (49%) were HRFN episodes and 118 (13%) had persistent fever and neutropenia. A total of 92 children were randomized, 45 to group A and 47 to group B. Days of antifungal use were 10 vs 5, P=0.002, with similar days of fever and hospitalization, similar frequency of resolving uneventfully (93%-89%), developing IFI (13%-17%), need for ICU (27%-19%) and death (9%-9%). **Conclusions:** Pre-emptive antifungal therapy was as safe and effective as empirical antifungal therapy in children with cancer and HRFN. The reduction of antifungal use, based on stringent diagnostic criteria should favor the adoption of evidence-based management strategies in this population. **FONDECYT 1120800**

Place of Work Pediatrics, Faculty of Medicine Universidad de Chile, Santiago, Chile
Pediatrics, Hospital San Juan de Dios, Santiago, Chile
Pediatrics, Hospital Roberto del Río, Santiago, Chile
Pediatrics, Hospital San Borja Arriarán, Santiago, Chile
Pediatrics, Hospital Exequiel González Cortés, Santiago, Chile
Pediatrics, Hospital Dr. Luis Calvo Mackenna, Santiago, Chile

Country Chile

Poster 018

Severe Chronic Norovirus Disease in Transplant Recipients: Clinical Features of an Under-Recognized Syndrome

Presenter
Robin Avery

First Author
Robin Avery

Other Authors
Bonnie Lonze
Edward Kraus
Robert Montgomery
Kieren Marr

Background: Norovirus infection has been reported as a cause of severe chronic diarrhea in transplant recipients, but this entity remains under-recognized in clinical practice, leading to diagnostic delays. Transplant clinicians should become familiar with this syndrome in order to facilitate early detection and management. **Methods:** Demographic, clinical and outcomes variables were summarized from a series of transplant recipients with positive stool norovirus RT-PCR assays at Johns Hopkins in 2013-14. Factors associated with longer duration of symptoms were compared using random forest analysis. **Results:** 31/193 (16%) of transplant recipients who were tested for norovirus had positive stool RT-PCR's. Symptoms included diarrhea (100%), nausea/vomiting (58%), abdominal pain (52%), and wasting (35%). Acute kidney injury occurred in 23%, and persisted in 21% after 6 mos. Median duration of diarrheal symptoms was 4 months (<1 – 20) and 11/31 (35.4%) of patients had relapses after improvement. Wasting, incompatible kidney transplant status, and plasmapheresis were associated with longer durations. Treatments included nitazoxanide (in 74%), reduction of immunosuppression (58%), and intravenous immunoglobulin (32%). Five patients died, but no deaths were attributed to norovirus. **Conclusions:** It is important for clinicians to recognize that norovirus can cause severe chronic diarrhea in transplant recipients. In this series, receipt of an HLA and/or ABO-incompatible kidney transplant and plasmapheresis were associated with longer symptom duration.

Place of Work Johns Hopkins

Country USA

Poster 019

Fusarium infections, in Cordoba Hospitals

Presenter
Fernando Riera

First Author
Juan Caeiro

Other Authors
Federico Romero
Silvia Carrizo
Florencia Spesso
Lorena Ravera
Sabrina Penco
C. Boisseau
Claudio Abiega
Claudia Sotomayor
Paula Icely

Introduction: Disseminated Fusarium infections have increased in frequency in immunocompromised patients. Mortality is high despite antifungal treatment. Species frequently isolated are Fusarium solani, F. oxysporum and F. moniliforme. We report 5 cases of patients with fusariosis in hospitals of Córdoba City Argentina in last 3 years. **Objectives:** To describe the clinical and epidemiological characteristics of patients with fusariosis in Córdoba hospitals in the last 3 years. For which we collect the medical records of patients of 4 hospitals, with diagnosed of disseminated fusarium infection. **Description:** 5 patients, 3 adults and 2 children (7 to 60 years old). Four had hematologic diseases at baseline without response or relapse of them, child had marrow aplasia. All patients had disseminated nodular skin lesions with necrotic center; 2 with nail involvement and cellulite on the back foot. Biopsy of skin lesions showed filamentous fungi. In 2 cases fusarium was isolated in blood cultures. In all patients the duration of neutropenia it was greater than 10 days and had received antibiotics as treatment. The treatment was voriconazole in 2 patients and 2 patients voriconazol + Amphotericin. 3 patients die. **Comments:** Fusarium disseminated infections, affects immunocompromised hosts especially patients with prolonged neutropenia. Mortality can reach 100%. The gateway is usually air and through skin lesions or nails, 2 patients in this series. Blood culture is positive about 40% of cases. The culture allows diagnostic confirmation of the disease, since the histopathology can't differentiate it from the other Hyalohyphomycosis. As biomarkers (unavailable in this cases) beta-glucan would be useful, but is not specific to this infection, the galactomannan is usually negative. The recommended treatment for this infection is Voriconazole (except of F.solani) and liposomal Amphotericin B preferably. Posaconazole may be considered for the rescue. We can infer that the frequency of this infection is increased in our area so we have high index of clinical sopecha in neutropenic patients with skin lesions and begin immediate treatment.

Place of Work Sanatorio Allende

Country Argentina

Poster 020

Coccidioidomycosis, Cases Series, Cordoba, Argentina

Presenter
Francisco Govedic

First Author
Fernando Riera

Other Authors
Francisco Govedic
Federico Romero
Marcos Marino
Silvia Carrizo
Claudia Paiva
Carlos Bergallo

Background: Coccidioidomycosis is endemic mycosis of the desert areas of Argentina (Catamarca) produced by C. posadasii. The actual incidence in Argentina is unknown but studies show increased frequency. More than 60% of primary infections are asymptomatic; in the rest, the typical presentation is characterized by nonspecific symptoms similar to influenza sometimes with skin manifestations ("Valley Fever"). Acute pulmonary primary infection is often indistinguishable from bacterial community-acquired pneumonia. Extrapulmonary coccidioidomycosis, is serious and can affect meninges, bones, joints and skin. The diagnosis is based on culturing liquids and tissues, histopathology and serology. The most commonly used antifungal agents are amphotericin B, fluconazole and itraconazole. **Objectives:** Report a series of cases assisted in the Sanatorio Allende of Córdoba and evaluate their clinical characteristics. **Material and Methods:** 9 patients (7 males and 2 female), 7 and 2 from Catamarca travelers to endemic area are reported. Three immunocompromised patients (2 renal transplant 1 steroid use prolonged), all affected by severe forms, 2 died. Pulmonary involvement was evident in 8 patients at diagnosis, presenting as subacute course pneumonia unresponsive to antibiotics. The radiological presentation was cavitated pneumonia in 4 patients and 2 micro nodular pneumonia. 4 patients had disseminated forms (peritoneal, meningeal, skin and bone). Histopathology permitted the diagnosis in 6 patients, the cultures were positive in 4 patients, 5 patients had antibodies. The treatments were Amphotericin B in severe forms and fluconazole. **Conclusions:** coccidioidomycosis is endemic mycosis increasing in our country, possibly related to population growth and increased immunocompromised patients in the endemic region. It is an underdiagnosed condition that can cause serious and deadly forms in immunocompromised patients. You should always be suspected in patients with pneumonia living in endemic areas or travel to them.

Place of Work Sanatorio Allende

Country Argentina

Poster 021

Anidulafungin in children: Experience from a tertiary pediatric hospital in Argentina

Presenter
Maria Teresa Rosanova

First Author
Maria Teresa Rosanova

Other Authors
Claudia Sarkis
Florencia Escarrá
Carolina Epelbaum
Norma Sberna
Rosa Bologna
Roberto Lede

Introduction: Invasive fungal infection (IFI) is an increasing health problem, and it is associated with high morbidity and mortality. New therapeutic options such as echinocandins and among these anidulafungin have been used in the adult population but in pediatric patient's experience is scarce. **Objective:** The aim of this descriptive study is to present our experience in the use of anidulafungin in a pediatric population. **Material and Methods:** In the setting of a public tertiary-care pediatric hospital, between January to June 2016, 55 patients (p) received anidulafungin as prophylaxis and/or treatment in proven, probable or possible IFI. Among other clinical and biochemical parameters, transaminases, billirrubin, creatinine levels and white blood cells counts were monitored at the beginning and at the end of treatment in all patients. **Results:** Anidulafungin was administered intravenously in a loading dose of 3 mg/k/day followed by 1.5 mg/k/day for a median of 14 days (IQR 7-22 d). Patient median (Md) age was 114 months (IQR 32-168m). All patients had underlying diseases being bone marrow transplantation (29 p; 53%), liver transplantation (9 p, 16%) and other hematologic-oncologic disorders (7 p, 13%) the most common. Indications of anidulafungin were as treatment in 27 p (49%) and as a prophylaxis in 28 p (51%). In 10 p, IFI was proven being *Candida albican*s the most common fungus isolated. In bone marrow transplant recipients, median values at the onset and at the end of treatment for the biochemical mentioned parameters were: transaminases, 29.5UI and 32 UI (p 0.44); bilirubin 0.35 and 0.30 (p: 0.20); creatinine, 0.52 and 0.60 (p: 0.67). White blood cell count showed great variability because of underlying disease but the difference was not significant between the onset and at the end of drug administration Md 2810 cel/mm 3 and 5160 cel/mm3, respectively (p: 0.07). In the whole series none patient had an adverse event or died of causes related to the mentioned drug. **Conclusions:** Our series suggests that anidulafungin is an option for the prophylaxis or treatment of fungal infection in pediatric population.

Place of Work Hospital J. P. Garrahan

Country Argentina

Poster 022

2016 AWARD NOMINEE ICHS-INFOCUS

Disseminated Fusariosis in Immunocompromised Children – Analysis of Recent Cases Identified in the Global FungiScope Registry

Presenter
Thomas Lehrnbecher

First Author
Angela Hassler

Other Authors
Adrian Lieb
Danila Seidel
Simone Cesaro
Johann Greil
Nikolay Klimko
Sofya Khostelidi Galina Solopova
Dilara Ogunc
Luisa Durán Graeff
Oliver A. Cornely
Maria J.G.T. Vehreschild

Background: Disseminated fusariosis is an orphan disease with high morbidity and mortality in immunocompromised patients, and there is a paucity of data in particular in pediatric patients. **Goals:** We collected data on disseminated fusariosis in children in order to expand our very limited knowledge on the disease in the pediatric population. **Patients and Methods:** Patients were identified from the FungiScope™ registry, which was searched for invasive infection due to Fusarium in children. Inclusion criteria for the registry comprise positive cultures or histopathological or molecular genetic evidence of invasive fungal disease and associated clinical symptoms and signs of invasive infection (ClinicalTrials.gov NCT01731353). **Results:** We identified ten children with a median age (range) of 8.5 years (0-13) who were diagnosed with disseminated Fusarium infection between 2006 and 2014. All but one patient suffered from de novo or relapsed acute leukemia, one from Shwachman-Diamond-Syndrome, which required chemotherapy (n=7) or allogeneic hematopoietic stem cell transplantation (HSCT, n=3). Antifungal prophylaxis was given to eight patients [fluconazole (n=5), voriconazole (n=2), and itraconazole (n=1)]. In nine patients, symptoms of disseminated fusariosis were fever, skin lesions, and subcutaneous abnormalities. Two patients suffered from dyspnea, and destruction of the soft palate and bilateral loss of vision occurred in one patient each. In seven patients, the pathogen was cultured from blood, in two from deep soft tissue and on from palate. After definite diagnosis, all children were treated with voriconazole which was given to eight children as combination therapy, either with a lipid formulation of amphotericin B or with an echinocandin. Surgery was performed in three cases, and granulocyte transfusions and/or hematopoietic growth factors were given in four patients each. After two weeks of treatment, partial response was seen in three patients, whereas stable disease and deterioration was described in four and three children, respectively. Overall survival was 50%. **Conclusions:** This is to the best of our knowledge one of the largest series of children with disseminated fusariosis reported to date which adds direct pediatric-specific evidence on how to manage this opportunistic infection.

Place of Work University of Frankfurt

Country Germany

Poster 023

2016 AWARD NOMINEE ICHS-INFOCUS

A novel assay to assess immune compromise post haematopoietic stem cell transplantation

Presenter
Abby Douglas

First Author
·Abby Douglas

Other Authors
Jackie Yu
Jeff Szer
David Ritchie
Monica Slavin
Joseph Sasadeusz
Kumar Visvanathan

Background: Managing patients post allogeneic haematopoietic stem cell transplantation (HSCT) can be challenging, in particular balancing the effectiveness of immunosuppression with its toxicity. Excessive immunosuppression can be complicated by infection with significant associated mortality while inadequate immunosuppression can result in graft versus host disease (GVHD). An accurate method to assess immune status in the setting of HSCT is lacking. Unlike other commercially available assays which assess the adaptive immune response alone, QuantiFERON Monitor® (QFM) measures interferon gamma (IFN-γ) release from whole blood following incubation with both innate (R848) and adaptive stimulants (CD3). **Aims:** This study monitored stimulated IFN-γ levels in allogeneic HSCT patients over the transplant course, to describe immune recovery post transplantation, and correlate this with episodes of infection and GVHD. **Study Design:** Prospective study. **Methods:** Whole blood samples were collected from 40 allogeneic HSCTs at conditioning then days 10 (neutropenia), 30 (engraftment), 60 (mid post-engraftment phase), 90 (transition between post engraftment and late phase), 120 and 180 (early late phase). IFN-γ levels were measured in plasma after overnight incubation of whole blood samples with the QFM test. The assay levels were correlated to time post HSCT as well as episodes of infection and GVHD. Infection was defined as an illness with a clinically suspected +/- microbiologically confirmed infectious aetiology (not including CMV reactivation) necessitating hospital admission. CMV reactivation was defined as any detectable virus in serum on weekly surveillance. The presence of GVHD was determined by the treating physician, based on clinical and radiographic and/or histologic findings, which required an increase in immunosuppression. Acute GVHD was defined as GVHD diagnosed <100 days post transplant, with chronic GVHD all episodes of GVHD diagnosed thereafter. Cyclosporin and prednisolone were used for routine GVHD prophylaxis. Antifungal, Pneumocystis jiroveci and antiviral prophylaxis was according to unit policy. Fluoroquinolone prophylaxis was not used. **Results:** 40 patients were enrolled in the study. 68% were male and median age was 47 (range 18-69). 58% of patients had matched-related donors and 42% unrelated. Conditioning was myeloablative (33%) or reduced intensity (67%). IFN-γ levels did not vary with sex, donor age, donor source or conditioning regimen but were higher in younger than in older recipients. IFN-γ levels rose steadily over the first 180 days post transplantation. 9/40 and 14/40 patients had acute and chronic GVHD respectively. 63 episodes of suspected or confirmed infection occurred in 38 patients, with 14 viral, 34 bacterial, 2 fungal and 13 culture negative episodes recorded. IFN-γ levels did not appear to vary with acute GVHD. IFN-γ levels appeared to vary between those with and without chronic GVHD although this did not reach statistical significance. IFN-γ levels varied significantly between those with active infection and those without, with higher assay levels in the absence of infection and lower levels during an infective episode (p=0.028) using logistic regression with IFN-γ as a continuous variable. The assay did not vary significantly with CMV reactivation. **Conclusions:** Immune function, as measured by IFN-γ activity, appears to steadily increase over the first 180 days post HSCT likely reflecting immune recovery post-transplant and routine withdrawal of GVHD prophylaxis, suggesting that the assay could be used to monitor a patient's immune recovery and graft function post transplant. Lower assay levels correlated with risk of infection, hence those patients who have lower assay levels could be targeted to continue antimicrobial prophylaxis and undergo closer clinical monitoring, with an increased index of suspicion for emergent infection. Larger studies are needed to determine if there is a relationship between IFN-γ and GVHD. Immune activity post transplant appears to be higher in younger recipients, potentially demonstrating the effects of immune senescence. This assay is promising as a means to demonstrate immune recovery and predict risk of infection and hence tailor immunosuppression and prophylaxis accordingly.

Place of Work Victorian Infectious Diseases Service, Royal Melbourne Hospital Country Australia

Poster 024

Difficulties of revaccination program in hematopoietic stem cell transplantation recipients

Presenter
Paula Moreira da Silva

First Author
Paula Moreira da Silva

Other Authors
Elen Monteiro da Silva
Anderson João Simioni
Mair Pedro de Souza
Vergilio Antonio Rensi Colturato
Clarisse Martins Machado

Introduction. After hematopoietic stem cell transplantation (HSCT), a temporary state of combined immunodeficiency occurs, with gradual recovery of the immunity during the early years of transplantation. The immunodeficiency state places the recipient at an increased risk for a variety of pathogens, some of which may be prevented by immunization. A revaccination program is recommended for all HSCT recipients. Brazil has a national immunization program, which guarantees full and free access for all population. Despite the excellence of the Brazilian revaccination program, several pitfalls have been observed over the years. **Objetives.** To demonstrate the pitfalls encountered in the post HSCT revaccination process, and how a prospective and tailored follow-up developed by a specialized nurse and a transplant infectious disease physician may help to overcome the obstacles. **Methods.** The study was conducted at the HSCT Program of Amaral Carvalho Foundation (ACF), in Jahu (SP, Brazil) from January to December 2014. HSCT recipients (n=122) were categorized into Group 1 (n=72), recipients who had already started the revaccination program and Group 2 (n=50), recipients who were up to start the vaccines. After inclusion, both groups were followed prospectively. Whenever a gap on the program was encountered or a difficulty was reported, interventions and subsequent evaluations were performed. The main reasons for the failures were categorized into the following categories: 1) related to patient compliance; 2) related to HSCT center modifications of previous recommendations; and 3) related to errors of public vaccination centers. **Results.** Problems related to patient compliance were less frequent than those related to HSCT center modifications of previous recommendations, or to errors made by the vaccination center. Eleven patients (15.3%) in Group 1 and 11 in Group 2 (22%) presented pitfalls related to patient compliance (p=0.34). Forty-one patients in Group 1 (56.9%), and 24 in Group 2 (48%) presented pitfalls related to HSCT center modifications of previous recommendations (p=0.33); and 41 (56.9%) and 25 (50%) patients in Groups 1 and 2, respectively, had pitfalls due to errors made by the vaccination center (p=0.44). In total, 105 HSCT recipients (86%) presented at least one problem, 63 (87.5%) in Group 1 and 42 (84%) in Group 2 (p=0.58). Delays in one or more vaccines were frequently observed (86/105, 81.9%). Univariate analysis showed that type of transplant, myeloablative conditioning, GVHD, use of immunosuppressive drugs, clinical complications, adverse reactions and lack of patient compliance did not contribute significantly to vaccine delays. The non-authorization of vaccines by the vaccination center was the only variable that had a significant impact on the delay of the revaccination program. Concerning to the pneumococcal conjugate vaccine, 19 patients in group 1 (26.4%) and 4 (8%) in group 2 (p=0.01), did not get the vaccine because the Brazilian Ministry of Healthy, following the recommendations in the vaccine package insert, does not allow its use in persons older than 5 years. In two patients, one in group 1 (1.4%) and one in group 2 (2%), the vaccination center considered that the PPV23 was enough and did not authorize the PCV (p=0.79). Only four (5.6%) and one (2%) patients in groups 1 and 2, respectively, were given a justification letter on the non-realization of PCV vaccines by the vaccination center (p=0.33). The refusal of pneumococcal vaccine was not uniform, as some centers applied the vaccine without questioning. Advisory intervention was needed in 64% and 46% of Group 1 and Group 2, respectively (p=0.05), and were partially successful in around 70% of the cases. Total resolution was achieved in more than 35% in both groups. **Conclusion.** Although the Brazilian revaccination program is excellent, it needs to be improved and all efforts should be made to guarantee a safe and complete revaccination schedule. HSCT centers should appoint nurses and transplant infectious disease physicians to organize and to monitor the progress of the program.

Place of Work Amaral Carvalho Foundation of Jau

Country Brazil

Poster 025

Cut-off of cytomegalovirus COBAS TAQMAN (CAP/CTM ROCHE) for introduction of ganciclovir pre-emptive therapy in allogeneic hematopoietic stem cell transplant recipients

Presenting
Bárbara Pereira

First Author
Bárbara Pereira

Other Authors
Marina Souza
Lilian Zanetti
Leila Serra
Juliana Moreno
Mair Souza
Vergilio Colturato
Clarisse Machado

Background. The introduction of prophylactic or preemptive therapies has effectively decreased the CMV mortality rates in solid organ or hematopoietic stem cell transplant recipients (HSCT). However, there is no international consensus concerning the use of commercial tests such as pp65 antigenemia detection or viral load quantification by PCR. Besides low reproducibility, cut-off levels defined by in-house assays may vary among different protocols and laboratories. The definition of international cut-offs will enable multicenter comparison that may help establishing observed patterns of CMV infections in different transplant populations and consequently improve CMV management. Following the World Health Organization (WHO) initiative to established first international standard for CMV detection, the demand for more precise, specific, sensitive and reproducible techniques, has increased in the last few years. The real time PCR COBAS Ampliprep/CobasTaqMan (CAP/CTM) was developed and standardized using WHO international standard for CMV, but the cut-off for the introduction of antiviral has not been determined yet. **Methods.** We conducted a retrospective study to compare the sensitivity and specificity of the new CMV CAP/CTM test with the current surveillance technique (pp65 antigenemia) and to determine a cut-off for antiviral introduction. Thirty-eight patients were retrospectively followed from August 2014 through May 2015. Pp65 antigenemia technique were performed using CMV Britetm Turbo Kit. The corresponding plasma samples were stored at -20oC for further viremia investigation using PCR CAP/CTM. The appearance of positive antigenemia was used to determine the cut-off of CMV viral load by ROC curve. All statistical analysis was performed using SPSS software version 19 (SPSS, Chigado, IL, USA.). **Results.** According to the proposed definitions, AG test detected 53 episodes of CMV reactivation in 34 patients (89.5%), with median duration of 9 days, ranging from less than 7 to 25 days. Median time for first antigenemia detection was 42 (28-140) days. Eighteen patients (52.9%) had only one episode of positive antigenemia and 16 (47.1%) had AG recurrences (13 patients had two and 3 patients had three recurrences, respectively. The only variable associated with AG recurrence was CMV viremia detection before day+50. Fifteen of the 25 patients (60%) with CMV viremia before day +50 had AG recurrence in comparison with only one of nine patients (11.1%) who had CMV reactivation after this period (p = 0.019). Donor type (MRD/MUD), donor or recipient CMV serostatus, and acute GVHD were not significantly associated with AG recurrence. The CAP/CTM detected 42 episodes of CMV reactivation in 33 patients (86.8%), with longer duration (median of 35 days) and almost 10 days earlier than the antigenemia test. The median time for first CMV detection by CAP/CTM test was 31.5 (-3 to 110) days. Less episodes of CMV recurrences were detected by CAP/CTM. Twenty-nine patients (87.9%) had one episode of CMV viremia and 4 patients had two episodes (12.1%). Among 29 patients with samples tested by CAP/CTM at the end of GCV therapy, only 7 (24.1%) were negative by PCR. The remaining 22 had a median viral load of 137 IU/mL (ranging from <137 IU/mL to 317 IU/mL). Therefore, the AG test failed in detecting the end of viremia episode. Unsatisfactory correlation between these two techniques were shown by Cohen's kappa coefficient (Table 2) with 0.315 (p<0,001) and also Pearson's correlation with 0.452 (p<0,001). Viral load values between 68.5 UI/ml and 129.9 UI/ml are equivalent to one positive cell detected by antigenemia, according to the maximum Pearson's correlation previously described. Consequently, values higher than 68.5 UI/ml demand antiviral approach and lower values were considered negative. ROC curve analysis was performed and the optimum cut-off value of CMV DNA was also 68.5 UI/ml with 81.5% of sensibility (IC 95% [0.627-0.921]) and 55.1% of specificity (IC 95% [0.503-0.598]). Accuracy of 67.9% was measured by the area under the ROC curve (AUC). **Conclusions.** The real correlation between both tests still dubious. Unlike recent studies PCR method does not provided more sensitive results, furthermore, large number of the results appears as non-quantifiable, therefore invalidate the threshold level as effective predictor of active infection and subsequently disease. The optimum CMV DNA cut-off set in this study is not a quantifiable value (68.5 UI/ml), once is underneath limit of detection (LOD, 137 UI/ml). Therefore, once all patients with minimum viral load detected (positive samples) should be treated, the real impact on antiviral introduction still challenging and unclear.

Place of Work Amaral Carvalho Foundation
University of São Paulo

Country Brazil

Poster 026

2016 AWARD NOMINEE ICHS-INFOCUS

Community and Hospital-acquired Respiratory Virus Infection in patients submitted to Hematopoietic Stem Cell Transplantation

Presenter
Clarisse Machado

First Author
Lucia Helena Testa

Other Authors
Lilian Perilio
Marina Souza
Paula Silva
Elen Adati
Anderson Simioni
Ana Claudia Santos
Talita Saggioro
Mair Souza
Vergilio Colturato
Clarisse Machado

Introduction: Community-acquired respiratory viruses (RV) are the most frequent etiologic agents causing acute respiratory infections (ARI) in humans. These agents have a wide antigenic range, universal distribution, affect people in all age groups, and may cause various clinical syndromes involving both the upper and lower respiratory tract. These respiratory infections are major causes of mortality in patients undergoing hematopoietic stem cell transplantation (HSCT), especially in the period prior to engraftment. These infections may also be acquired in hospitals, possibly transmitted by contact with infected health professionals or patient caregivers, or with contaminated objects or surfaces. Since 2008, a continued education program was started at the HSCT Program of Amaral Carvalho Foundation aiming to improve the control of RV transmission. Patients, caregivers, donors, family members and employees are invited to participate in the activities. **Objectives:** To review the cases of RV infections in patients undergoing HSCT from August 2010 to December 2013, characterize the type of transmission, if community- or hospital-acquired during this period, and determine the morbidity and mortality of RV infections. **Methods:** The study was conducted at the HSCT Service of Amaral Carvalho Hospital, analyzing the charts of HSCT recipients with RV infection diagnosed by immunofluorescent assay or multiplex PCR. Medical data and images from patients admitted to the HSCT and hematology wards, as well as from patients assisted at the outpatient clinic were retrospectively reviewed. Hospital transmission was defined when the interval between hospital admission and the first symptoms was more than five days, or when the interval between patient discharge and the first symptoms was up to five days. **Results:** During this period, 187 patients had 214 episodes of VRI. Thirty-one episodes (14.5%) were considered hospital-acquired. Rates of hospital transmission were similar between HSCT unit (7,9%) and the hematology ward (9,8%). Hospital stay for more than 23 days was associated with hospital transmission (p=0.001) and a significant decrease in this type of transmission was observed in 2013 (p=0.04). VSR was the RV with the highest frequency of progression to pneumonia (42%). **Conclusion:** We conclude that hand hygiene, nasal lavage collection (LN) before hospitalizations for hematopoietic stem cell transplantation (HSCT), contact isolation for patients with positive respiratory virus, active surveillance of symptoms and continuing education for patients, family and healthcare professionals should be continuous for the control of infections in HSCT VR units. Most of these policies have low cost and are highly effective. Caregivers, household contacts and health professionals must comply with the control policies to ensure the safety of patients.

Place of Work Amaral Carvalho Foundation

Country Brazil

Poster 027

Characterizing the role and relationship of CMV Reactivation to Invasive Fungal Disease following Haematopoietic Stem Cell Transplantation (HSCT)

Presenter
Michelle Yong

First Author
Michelle Yong

Other Authors
Michelle Ananda-Rajah
Orla Morrissey
Paul Cameron
Andrew Spencer
David Ritchie
Allen Cheng
Sharon Lewin
Monica Slavin

Background: Infectious complications such as invasive fungal disease (IFD) and cytomegalovirus (CMV) reactivation contribute significantly to the morbidity and mortality of recipients of hematopoietic stem cell transplant. However to date, the relationship between the two infections has not been well described. This study aims to understand the risk and relationship of IFD to CMV reactivation. **Methods:** A multi-centre retrospective cohort study was conducted of all consecutive patients undergoing allogeneic stem cell transplantation from January 2006 to December 2010 from the Royal Melbourne Hospital and the Alfred Hospital, Melbourne, Australia. We collected data on patient demographics, conditioning regimen, graft source, the occurrence of acute graft versus host disease (AGVHD), chronic graft versus host disease (CGVHD) and mortality. CMV reactivation was defined as detection of CMV DNA ≥ 600 copies/ml in whole blood using PCR or development of CMV disease. Invasive fungal infection was classified in accordance to the European Organization for Research and Treatment of Cancer/Invasive Fungal Infections Cooperative Group and the National Institute of Allergy and Infectious Diseases Mycoses Study Group (EORTC/MSG) criteria. Univariate and multivariate analyses were performed where $p<0.05$ was considered to be significant. **Results:** The median (IQR) age of all participants (n=419) was 44 (34-54) years with the most common indication for transplantation being acute myeloid leukemia (41.8%). In this cohort, 62% of patients received myeloablative transplants, 40% of donors were volunteer unrelated and 3% of patients received umbilical cord stem cells. CMV reactivation occurred in 25% of transplant recipients at a median time of 48 days (IQR 35-63 days). Forty-two cases of IFDs (n=23 proven, n=8 probable, n=11 possible) were identified in 38 patients. Microbiologically confirmed IFDs comprised 23 moulds (aspergillus=15, non-aspergillus=8) and 6 yeasts. Forty-two percent of IFDs occurred in patients with CMV reactivation. The median time to IFD onset was significantly longer in those who had CMV reactivation compared to no reactivation (184 vs 37 days, p=0.03). The median peak CMV viral load in patients with CMV reactivation was 2831 copies/ml (IQR 1401 to 9140 copies/ml). There was no association with IFD and whether patients had low or high CMV reactivation defined as above or below the median peak CMV viral load (p=0.9). Patients experiencing more than one episode of CMV reactivation (n=21) were not more likely to develop IFD (p=0.9). Univariate analysis found an association between IFD and CMV reactivation (p=0.01) but no association with age (p=0.28), sex (p=0.6), graft source (p=0.9), myeloablative or reduced intensity conditioning (p=0.37), donor type (p=0.96), days to neutrophil engraftment (p=0.45), AGVHD (p=0.38) or CGVHD (p=0.36). Multivariate analysis showed that only CMV reactivation was an independent risk factor for IFD (OR 3.73 95% CI: 1.57 to 8.82, p=0.003). **Conclusion:** HSCT recipients who develop CMV reactivation in the post-transplant period are at an increased risk of invasive fungal disease. The time to IFD diagnosis was longer in patients with CMV reactivation, however the CMV viral load was not associated with IFD. Further research is warranted into understanding the interaction between these two important infectious complications.

Place of Work University of Melbourne Country Australia

Poster 028

PCR and galactomannan in the diagnosis of aspergillosis in a prospective cohort of patients with hematological malignancy: a pilot study

Presenter
Alejandro De la Hoz

First Author
Sandra Valderrama

Other Authors
Claudia Parra
Andrés Ceballos
Mónica Arévalo
Natalia Ardila
Alejandro De la Hoz
Luis Miguel Salazar
Javier Garzón
Gloria Cortés
Beatriz Ariza
Patrice Le Pape

Introduction: Invasive aspergillosis is a frequent fungal infection in patients with hematological malignancies. Incidence oscillates from 5 to 25% with a 65 to 99% mortality rate. Diagnosis is based on different criteria including: patient risk factors, clinical findings, microbiological tests (galactomannan and culture) and histopathologic findings. There is limited information in Latin American literature showing the role of PCR in its diagnosis. **Goals:** To validate the use of polymerase chain reaction (PCR) for Aspergillus spp in a cohort of neutropenic patients with hematological malignancies while receiving chemotherapy and describe its performance in the diagnosis of invasive aspergillosis by comparing it with the criteria of the European Organization for Research and Treatment of Cancer/Mycoses Study Group (EORTC/MSG) for invasive fungal infection (IFI) and the galactomannan test. **Methods:** During 10 months, patients on chemotherapy for acute myeloid leukemia (AML), acute lymphoid leukemia (ALL), and lymphoblastic lymphoma (LL) were followed during neutropenia episodes in a fourth level complexity hospital in the city of Bogota, Colombia. Serum and bronchoalveolar (if indicated) samples were taken for galactomannan testing during each episode. Patients were classified as proven, probable or possible, invasive fungal infection, according to the EORTC/MSG criteria. Simultaneously, validation of RT-PCR for Aspergillus 18S Ribosomal (Myconostica, Ltd) was done and serum samples were processed for PCR and compared with galactomannan results. **Results:** Follow up was completed on 32 patients and 39 episodes of neutropenia were documented. The median age was 38,5 years. 15 out of 32 patients were diagnosed with acute myeloid leuchemia, 14 with acute lymphoid leuchemia and 3 with lymphoblastic lymphoma. Invasive aspergillosis was diagnosed as possible in 4 cases of neutropenia and as probable in other 4 cases. Fusariosis was confirmed in two cases and pulmonary criptococcosis in one case. There were no proven cases of invasive aspergillosis. Among 34 out of 39 cases (87,2%) PCR and galactomannan results were concordant, 31 had negative results and 3 positive results from both methods. Mortality rate was 12,1% (n: 4), half of them attributed to IFI. **Conclusions:** The PCR for Aspergillus spp has a good correlation with galactomannan test in hematological patients. In this population PCR may be used as a complementary study for the anticipated antifungal therapy and improve the rational use of these drugs, but it should not be used to replace galactomannan. More studies are required to confirm these findings.

Place of Work Pontificia Universidad Javeriana Bogotá

Country Colombia

Poster 029

Citomegalovirus Infection and Disease in a Cohort of Kidney Transplant Patients in Colombia

Presenter
Jorge A. Cortés

First Author
María José Lopez

Other Authors
Jorge A. Cortés
Camilo Montero
Rodolfo Torres
Milciades Ibáñez
Nancy Yomayusa

Background: Reactivation, infection and disease caused by Citomegalovirs (CMV) is a common complication despite the prophylactic measures developed in transplanted patients. **Goals:** To identify the frequency of CMV infection (reactivation) and disease in a cohort of kidney transplant recipients in Colombia. **Materials and Methods:** A retrospective cohort of patients with kidney transplantation in two institutions in Colombia (Clínica Universitaria Colombia and Clínica Reina Sofía, Bogotá) were followed for at least one year. Data on CMV infections and disease were obtained of the medical record, as well as hospitalization, ICU admission, and death. Infection was defined as a positive viral load without symptoms or signs. Disease was defined by the presence of symptoms and signs and evidence of CMV. In the program, routine anticipative measures were used (CMV detection by scheduled viral load) in intermediate risk patients and prophylaxis in high risk patients. **Results:** 208 patients were followed. 42 episodes of infection in 18 patients (11.5% of the patients, mean of 2 episodes per patient, range 1 to 7) were identified and 12 episodes of disease in 6 patients (2.8% of the patients, mean of 1.6 episodes per patient, range 1 to 4). The time from transplant to reactivation had a mean of 52 days for the cases of infection and 149 days for the cases of disease ($p < 0.001$). Viral load at diagnosis had a mean of 1.363 copies (95%CI 567-2139) in patients with infection and 1.865 copies in patients with disease (95%CI 475-3256) ($p=0.52$). CMV disease cases were colitis or ileitis in 5 cases, 1 episode of hepatitis and 2 pancreatitis. 4 cases were symptomatic without a clinical focus identified. 42% of patients with CMV disease had an inflammatory response. None of the episodes of CMV infections required hospitalization, which happened in 75% of the episodes of CMV disease, with a mean hospital stay of 4 days. 2 of 9 cases hospitalized require ICU admission and a patient died from pancreatitis (8% of the episodes of CMV disease and 0.5% of the patients). **Conclusions:** A relatively high rate of CMV reactivation and disease was seen with a low fatality rate in Colombia. Prevention strategies should be optimized with a high requirement of technology and follow up for the patient.

Place of Work Universidad Nacional de Colombia
Clínica Colsanitas

Country Colombia

Poster 030

Monitoring of Invasive Pneumococcal Diseases in Region of Western Serbia

Presenter
Sladjana Pavic

First Author
Milica Jovanovic

Background: Streptococcus pneumoniae continues to be a significant cause of morbidity and mortality in humans. It is one of the most common causes of bacterial infections. Our center is a general hospital attending to an area of 313.396 habitants in the west of Serbia. **Goals:** To determine the prevalence, demographic features and clinical course of invasive pneumococcal diseases (IPD) in Western Serbia in period from 2010-2015. **Methods:** We retrospectively investigated patients with IDP (bacteraemia, pneumonia and meningitis) admitted to Department for Infectious Diseases, General Hospital Uzice, between 2010-2015. Demographic data, information about the clinical course and evaluation of disease were obtained from hospital records. Clinical diagnosis was confirmed by isolation of Streptococcus pneumoniae from blood, sputum and cerebrospinal fluid. Results: The total of 324 patients (187 males, 137 female) were treated for IPD: 180 patients (male 111, female 69) with invasive pneumonia, 98 (male 52, female 46) with bacteremia and 46 (24 males, 22 female) with meningitis. Mean age at onset was 49.4+/-12.1 (range: 16-89). Of all patients, 59 (18.5%) were admitted to intensive care unit (20% of invasive pneumonia, 28.2% of meningitis, 11.2% of bacteremia). Median hospitalization for patients with meningitis was longest, 17 days, while for patients with invasive pneumonia it was 12 days, and with bacteremia 10 days. The case fatality of meningitis was 11 (23.9%) patients (72.7% older than 65), bacteremia 10 (10.6%, of that 90% older than 65), pneumonia 6 (3.3%, all older than 65). Chronic illness, like diabetes mellitus, chronic cardiovascular, pulmonary, hematological or liver diseases, alcoholism, were notified in 201 (62.3%) patients. **Conclusion:** The morbidity and mortality on IPD is common in Western Serbia. These diseases are more common in male sex and patients with chronic diseases. IPD significantly more frequently occur in patients of older age.

Place of Work General Hospital Uzice, Uzice and Clinic for Infectious and Tropical Diseases, Belgrade

Country Serbia

Poster 031

2016 AWARD NOMINEE ICHS-INFOCUS

Molecular detection of fungal DNA in fresh tissue samples of patients presenting phaeohyphomycosis and hyalohyphomycosis

Presenter
Angela Satie Nishikaku

First Author
Angela Satie Nishikaku

Other Authors
Daniel Wagner Santos
Marilia Marufuji Ogawa
Maria Daniela Bergamasco
Elaine Cristina Francisco
Sarah Santos Gonçalves
Milvia Maria Enokihara
Jane Tomimori
Arnaldo Lopes Colombo
Giannina Ricci

Background: Early and accurate diagnosis of opportunistic fungal infections is a critical step to provide successful treatment for patients, especially those with any condition associated to immunosuppression. Conventional culture and histopathology are still considered the gold standard methods for diagnosis of fungal diseases but they may present suboptimal sensitivity and specificity, especially for diagnosis of emerging fungal pathogens. Life-threatening infections caused by hyaline and dematiaceous molds have been commonly reported in patients with hematological malignancies and those exposed to organ transplantation presenting high mortality rates. Molecular detection directly from tissue specimens has been investigated as a promising alternative method for correct identifying fungal pathogens at species level, but still remains a great challenge in the setting of routine clinical laboratories. **Goals:** To develop an accurate molecular method (PCR and DNA sequencing) for providing reliable early diagnosis of fungal infections in fresh or frozen tissue specimens from patients with suspected invasive or subcutaneous fungal infection. **Material and Methods:** Thirty-five tissue biopsies were collected from patients with proven diagnosis of hyalohyphomycosis (fusariosis or aspergillosis), mucormycosis or infection by melanized fungi that were admitted at four different medical centers in São Paulo, Brazil. Fragments of fresh tissue samples were sent to Special Mycology Laboratory (UNIFESP) for direct examination, culture (available for 28 out 34 samples) and genotypic identification, and also to Department of Pathology (UNIFESP) for histopathological analysis. Molecular detection was performed using PCR and sequencing of ribosomal (internal transcribed spacer region and the small subunit of ribosomal DNA) or mitochondrial genes. **Results:** We evaluated 35 fresh tissue samples from 34 patients aged from 11 to 83 years old, who presented the following underlying conditions: kidney transplantation (n=16), acute leukemia (n=9), kidney transplantation/diabetes mellitus (n=2), heart transplantation (n=1), AIDS/diabetes mellitus (n=1), and five patients without any underlying conditions (all but one with subcutaneous infections). Thirty-five tissue samples were obtained from skin lesions (n=26), lung infiltrates (n=5), brain lesions (n=2) and paranasal sinus (n=2). In the group of patients with culture results available (28 samples), there was a 100% agreement between species/complex identified by conventional and molecular methods. In this scenario, both methods were able to identify species belonging to Aspergillus fumigatus, Aspergillus flavus, Fusarium solani complex, order Mucorales, Fonsecaea pedrosoi/Fonsecaea monophora complex, Sporothrix schenkii, Cladophialophora bantiana, Exophiala xenobiotica, among others. For seven patients with invasive infection diagnosed only by histopathology/direct examination, the fungal species revealed by DNA sequencing was compatible with the morphological characteristics of fungal elements reported by the microscopy of biological samples. **Conclusions:** We were able to develop an “in house PCR-based method” to correctly identify fungal pathogens using fresh tissue samples of infected patients. The method was able to identify black and hyaline molds infecting a large variety of tissues, including skin, lung, brain and sinus mucosae. Accurate diagnosis of fungal infections is mandatory to optimize antifungal therapy and should rely on a combination of conventional and molecular methods.

Place of Work Universidade Federal de São Paulo (UNIFESP)
Country Brazil

Poster 032

Early Clinical Experience with Isavuconazole for the Treatment of Invasive Fungal Infections

Presenter
Eloy Ordaya

First Author
Eloy Ordaya

Other Authors
Odaliz Abreu-Lanfranco
Rachel Kenney
Mayur Ramesh
Ramon del Busto
George Alangaden

Background: Isavuconazole (ISV) is a broad-spectrum triazole recently approved for treatment of invasive aspergillosis and mucormycosis. Due to its efficacy and favorable pharmacology profile compared to other antifungals, ISV is being used for treating a variety of invasive fungal infections (IFI). **Objective:** Our aim was to evaluate the utilization and efficacy of ISV at our institution. **Methods:** A retrospective, descriptive study of patients with IFI treated with ISV, from May 2015 to April 2016, at Henry Ford Hospital, a tertiary care center in Detroit MI. The use of ISV as primary or secondary therapy, response to therapy, and 30 day all-cause mortality were evaluated. Only patients who met the EORTC/MSG criteria for probable or proven IFI were included. Descriptive and bivariate comparisons were done. **Results:** A total of 28 patients were evaluated. Median age was 53 (17–84) years and 64% were males. The most frequent underlying conditions were diabetes (46%), pulmonary disease (43%) and organ transplantation (43%). IFI diagnosis was proven in 64% and probable in 36% patients. The pathogens treated were: Aspergillus spp. – 15; Mucorales molds – 8; Candida spp. – 5; Alternaria spp. – 1; Chaetomium spp. – 1; Rhodotorula spp. – 1; Pichia spp. – 1; Cryptococcus spp. – 1. Three patients had more than 1 pathogen isolated. The most common site of IFI were pleuro-pulmonary (50%) and rhino-cerebral (21%). Adjuvant surgery was performed in the 6 patients with rhino-cerebral mucormycosis. ISV was used as primary therapy in 5; refractory disease in 6; alternative therapy due to intolerance to other antifungals in 14 (86% were receiving azoles); other indication in 3 cases. The adverse effects that led to the switch to ISV were: elevated transaminases (29%), nephrotoxicity (21%), neurovisual toxicity (21%), cardiotoxicity (14%), drug interactions (7%) and dermal photosensitivity (7%). The median length of ISV therapy was 79 (1-365) days. ISV was well tolerated and possible related adverse effects were: elevated transaminases (18%), cardiac (4%) and electrolytes (4%) abnormalities; these side effects were transient and no patients discontinued ISV therapy. The outcome of treatment were: 68% had complete or partial response, 3.5 % had stabilized and 3.5% had progressive disease. The all-cause mortality rate was 25%. A bivariate analysis comparing patients with mucormycosis versus aspergillosis demonstrated that mucormycosis was associated with diabetes (87.5% vs 26.7%, p=0.009) and proven IFI diagnosis (87.5% vs 33.3%, p=0.03), but no significant differences were found in use of ISV as a primary therapy (75% vs 80%, p=1.0) or 30 day all-cause mortality (37.5% vs 13.3%, p=0.3). **Conclusion:** Our real-life experience demonstrates that ISV is a well-tolerated drug with efficacy comparable to that previously reported with other broad-spectrum antifungals for the treatment of IFI. The favorable adverse effect profile even in patients with intolerance to other azoles makes it an attractive therapeutic option for the primary treatment of IFI.

Place of Work Henry Ford Hospital

Country USA

Poster 033

Quantitative PC R to early detect Chagas' disease reactivation in heart transplant

Presenter
Tânia Mara Varejão Strabelli

First Author
Tânia Mara Varejão Strabelli

Other Authors
Keilla Mara Freitas
Marta Heloisa Lopes
Maria Aparecida Shikanai Yasuda
Fábio Gaiotto
Fernando Bacal

Introduction: Chagas' disease is the third more common cause of heart transplant in Brazil. For these patients, a structured clinical and laboratory protocol is necessary to monitor for Trypanosoma cruzi reactivation. Recent data indicate that laboratory monitoring of peripheral blood with polymerase chain reaction testing (PCR) can identify reactivation prior to the occurrence of symptoms and allograft injury, but there is not a well established cut off. **Goals:** Observe if quantitative PCR is a sensitive test to early detect Chagas 'disease reactivation in heart transplant patients. **Materials and methods:** From January to October 2014, blood samples collected from Chagas' heart transplanted patients was tested to: quantitative PCR (real time PCR), blood culture and microscopy of a buffy coat blood sample (MBC) for T. cruzi. Viral load was classified by the lab as very low (1-50 copies), low (51-99), moderate (100-499), substantial value (500-999), high (>1000), very high (>17000). **Results:** for 10 months, 26 patients (16 men–62%, median age=48 y) had 45 blood samples collected. Ten patients (20 samples) had positive PCR. Mean time after transplant=138 days. Immunossupression: 65% mycophenolate mofetil and 35%, azathioprine besides prednisone and calcineurin inhibitor. PCR was positive on average 25.6 days before any clinical reactivation signal. Only one PCR + patient had no sign of reactivation in the follow up. Very low viral load in 04 patients (myocarditis in 03, no evidence in 01); low in 02 (myocarditis, encephalitis/skin lesion), moderate in 2 (myocarditis, skin lesion), substantial value in one (myocarditis), very high in one (myocarditis + severe arrhythmia). MBC was positive in only 2 cases. Blood culture was positive in 17 (03 PCR-). No patient died. All patients treated with benzonidazol for 60 days. **Conclusion:** Quantitative PCR detect Chagas' disease reactivation before any clinical sign. We need to increase the number of cases to better define a cut off.

Place of Work Instituto do Coração do Hospital das Clínicas da Faculdade de Medicina da USP

Country Brazil

Poster 034

Candida haemulonii echinocandin reduced susceptibility is linked with Fks1p amino acid substitutions.

Presenter
Guillermo Garcia-Effron

First Author
Catiana Dudiuk

Other Authors
Guillermina Isla
Soledad Gamarra
Susana Córdoba
Guillermo Garcia-Effron

Candida haemulonii is an emerging yeast pathogen that is increasingly reported as candidemia agent worldwide. This species is usually misidentified since it is phenotypically similar to C. famata and C. guilliermondii. Reports showing its reduced fluconazole and amphotericin B susceptibility were published. Taken this data into account, echinocandin drugs became the drug of choice to treat C. haemulonii infections. However, it was shown that this yeast exhibited reduced echinocandin susceptibility similar to which was observed for C. parapsilosis complex. Also, echinocandin clinical resistance was reported in pediatric patients. Echinocandin drugs interact with the Fksp subunits of the β-1,3-glucan synthase complex inhibiting the biosynthesis of the principal cell wall glucan. Both clinical resistance (in *Candida spp.*) and intrinsic reduced susceptibility (in C. parapsilosis complex) phenotypes were linked with hot spot substitutions in Fksp. Nevertheless, the molecular mechanism underlying C. haemulonii echinocandin reduced susceptibility phenotype is not known. The objective of this work was to study the molecular mechanism of echinocandin reduced susceptibility observed in C. haemulonii. To reach this goal, we construct a Saccharomyces cerevisiae strain with a hybrid FKS1 gene where a hot spot 1 region of its FKS1 gene was replaced with that from C. haemulonii. A clinical C. haemulonii strain (named 1290) showing elevated echinocandin MIC values (0.5 µg/ml for caspofungin and anidulafungin) was used to obtain the DNA. A partial C. haemulonii FKS1 sequence was PCR-amplified and sequenced by Sanger methodology by using FKS universal primers. This sequence was used to generate the S. cerevisiae mutant harboring a chimeric FKS1 that was obtained by a two-steps PCR-based mutagenesis. Briefly, the first step consisted in the partial deletion of the FKS1 gene of S. cerevisiae BY4742 using an URA3 cassette. The deletion includes the region from the amino acid residues 453 to 649 (includes the Fks1p hot spot 1 region). This gene disruption leads to FK506 (tacrolimus) and echinocandin hypersensitivity. The second step of the method comprised the replacement of the partially deleted S. cerevisiae FKS1 gene (fks1Δ453-649::URA3) by a gene construction that included a 695 nt. portion of the C. haemulonii FKS1 gene surrounded by S. cerevisiae FKS1 regions from nt. 1123 to 1611 and nt. 2308 to 2548 (S. cerevisiae FKS1 sequence no. U12893.1). This construction was designed to obtain, after an homologous recombination, a functional FKS1 gene encoding a chimeric Fks1p which included a C. haemulonii Fks1p region comprising the hot spot 1 region and the C- and N-terminus of the Fks1p from S. cerevisiae. Transformations were performed by a lithium acetate-based procedure. Caspofungin susceptibility testing was performed following the CLSI reference documents M27-A3/M27-S4. C. haemulonii Fks1p hot spot 1 region transcribed sequence was FMALSLRDP. It showed amino acids differences when compared with echinocandin susceptible species e.g. C. albicans 641-FLTLSLRDP. C. haemulonii 1290 showed caspofungin MIC values of 0.5 µg/ml while for the C. albicans ATCC 90028 the caspofungin MIC was 0.06 µg/ml. The chimeric S. cerevisiae strain showed 32–fold increase in caspofungin MIC values when compared with its parental strain S. cerevisiae BY4742 (0.25 µg/ml and 0.007 µg/ml, respectively). We can conclude that the described Fks1p´s hot spot 1 amino acid substitutions in C. haemulonii (FMALSLRDP vs. C. albicans 641-FLTLSLRDP) are necessary and sufficient to explain the reduced echinocandin susceptibility observed in C. haemulonii.

Place of Work Laboratorio de Micología y Diagnóstico Molecular - Cátedra de Parasitología y Micología – Facultad de Bioquímica y Ciencias Biológicas – Universidad Nacional del Litoral. Santa Fe (Argentina). Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICET). CCT-Santa Fe (Argentina). INEI ANliS “Dr. C. G. Malbrán”, Buenos Aires, Argentina

Country Argentina

Poster 035

Mucormycosis. Case series from a public hospital in Peru

Presenter
Alfredo Chiappe González

First Author
Alfredo Chiappe González

Other Authors
Juan José Montenegro Idrogo
Gian Carlo Pérez Lazo
Renzo Vargas Gonzales
Cristhian Resurrección Delgado

Introduction: Mucormycosis is a wide spread fungal infection, caused by the mucormycotina subphylum molds. The angioinvasive nature of the disease leads to tissue necrosis, with thrombus formation in susceptible hosts. Despite the antifungal therapy, the mortality rate is extremely high, 40 to 70%. **Objective:** To describe the epidemiological, clinical and images characteristics of the patients with the diagnosis of Mucormycosis in the Hospital Nacional Dos de Mayo. Lima, Peru: 2013 to 2015. **Materials and methods:** case series study of four medical patients identified and followed. **Results:** all are male of range age 50-60 years old, first admitted in the emergency department. Three patients were non-controlled diabetics, one was considered in a critical condition, with eventually managed in the intensive care unit. The rhino-orbito cerebral mucormycosis was the clinical presentation in all cases, in an onset no longer than ten days duration. Clinical manifestations were fever, headache; (3/4) 75% facial and periorbital compromise, compatible with bacterial over-infection, with a necrotic palate ulcer. All patients had cranial nerve affection: facial palsy (4/4), ophthalmoplegia (2/4) and hypoesthesia (1/4). Leukocytosis and hyperglycemia were the main laboratory findings in (3/4) 75%. The magnetic resonance shows pansinusitis (4/4), cavernous sinus thrombosis and brain abscess (2/4). Diagnosis was through pathology test (biopsy) in all cases, with evidence of granulomatous chronic inflammation, necrosis, vascular affection, thrombus formation and non-septate hyphae with right angle branches. Management consisted in broad spectrum´s antibiotics, deoxycholate amphotericin B as first antifungal treatment, posaconazole as maintenance therapy and surgical intervention (2/4 aggressive surgical debridement- include ocular globe enucleation - and 2/4 conservative surgery). Global mortality was 50%, all of them were patients with conservative surgery. **Conclusions:** rhino-orbito cerebral mucormicosis has an acute and aggressive presentation in non-controlled diabetics and critically ill patients. The prompt antifungal therapy with amphotericin B at first and then posaconazole as maintenance, associated with aggressive surgical debridement, were the treatment approach with best's outcomes on mortality in this case series.

Place of Work Hospital Nacional Dos de Mayo

Country Peru

Poster 036

Candida Bloodstream Infections in General Hospital

Presenter
Alejandra Margari

First Author
Sabrina Garce

Other Authors
Natalia Pujato
Mariel Adra
Natalia Carrión
Martín Bravo
Jesica Maresca
Alejandra Margari

Introduction: *Candida* bloodstream infection (CBI) is the third leading cause of nosocomial bloodstream infections, and the first of the invasive fungal infections in hospitalized patients. The incidence rate in Argentina is 2.8 per 1000 discharges. It is more frequent in critically ill patients in Intensive Care Units and in those with recent surgical procedures. In our country, *Candida albicans* is the most common, followed by *Candida parapsilosis* and *Candida tropicalis*. The susceptibility has changed in the last years, probably due to the extended use of antifungal therapies. Knowing the local epidemiology is essential to establish an appropriate empirical treatment. **Objective:** Describe the risk factors, incidence rate, predominant species and antifungal susceptibility over the years of CBI in hospitalized patients in our Centre. **Methods:** We conducted a descriptive retrospective study from January 2013 to July 2016. All patients with CBSI were included. The incidence rate was calculated using CBSI episodes as numerator and patients/day as denominator. We studied the following data: age, gender, risk factors for *Candida* infection and previous treatments with antibiotics. The microbiological identification was made through Bact-Alert System and the susceptibility by means of Vitek System (bioMerieux,Lyon). The antifungals tested were Amphotericin B deoxycholate, 5-fluocytosine, fluconazole and voriconazole, based on the standardized recommendations of CLSI. **Results:** We registered the CBSI occurred between January 2013 to July 2016. We studied 44 episodes. The mean age of the patients was 66 years: 19 females and 22 males. The incidence rate was 0.16 per 1000 discharges. Of the 44 episodes: 10 took place in 2013, 10 in 2014 and 10 in 2015. During the first six months of 2016 we registered 14 episodes. The main risk factors found were: cancer, in 16 cases, digestive tumors or hematologic diseases mainly, prior use of antibiotics in 28, abdominal surgery 22 and prolonged ICU stay in 16. C. albicans was the most common species (20) followed by C. parapsilosis (12), C. tropicalis (5), C.glabrata (4), C. guillermondi (1), C. dublinensis (1), and C.lusitaniae (1), Of all isolated, 7 (16%) showed decreased susceptibility to fluconazole; 3 C. albicans (2 MIC= 4 and 1 MIC=8); 1 C. parapsilosis (MIC=64) and 2 C. glabrata (MIC=4 and MIC=8) and 1 C. guillermondi (MIC= 8) . Referring to the susceptibility, in 2013 there was only 1 with MIC higher than 2, , no isolates in 2014, in 2015 4 and 2 in the first six months of the current year. All the isolates that showed decreased susceptibility to fluconazole correspond to patients previously exposed to this drug. **Conclusion:** C. albicans is the most important species causing CBSI in our study. We remark the changes in the susceptibility patters to fluconazol observed, probably explained by the previous exposure to azoles. This fact, poses new challenges in terms of empiric initial treatment, rational use of antifungals and infection control practices aimed at rationalizing the use of this agents.

Place of Work Hospital Naval Buenos Aires Doctor Pedro Mallo

Country Argentina

Poster 037

Differences in specific cytomegalovirus immune reconstitution among autologous and allogeneic hematopoietic stem cell transplant recipients.

Presenter
Juliana Moreno

First Author
Juliana Moreno

Other Authors
Lilian Zanetti
Leila Serra
Barbara Pereira
Marina Souza
Lúcia Helena Testa
Mair Pedro de Souza
Vergílio Colturato
Clarisse Machado

Introduction: Cytomegalovirus (CMV) is a major cause of morbidity and mortality after allogeneic HSCT. The same is not observed in autologous HSCT recipients who do not need to receive immunosuppression after transplantation. In the present study, we compared the reconstitution of CMV-specific immunity in autologous and allogeneic HSCT recipients from the HSCT Program of Amaral Carvalho Foundation. **Methods:** Patients were invited to participate in the study and signed the informed consent. CMV surveillance with the antigenemia test is done weekly in the first 3 months in allogeneic but not in autologous HSCT recipients. Pre-emptive ganciclovir (GCV) therapy is initiated whenever a positive antigenemia is detected. The presence or absence of immunity for CMV was determined by a commercial interferon (INF) gamma release assay (QuantiFeron® CMV, Qiagen). Detection of INF was done before HSCT and monthly thereafter up to d+90. **Results:** To date, 42 HSCT recipients were included, 32 allogeneic and 10 autologous. The CMV-specific immunity pre-transplant was detected in 37 patients (88.1%); 4 patients were non-reactive (9.5%) and 1 patient had indeterminate result (2.4%). On d+30, 20 patients remained reactive (48.8%), 13 were non-reactive (31.7%) and 8 were indeterminate (19.5%). On d+60, 26 were reactive (70.3%), 8 nonreactive (21.6%) and 3 indeterminate (8.1%). On d+90, 22 were reactive (73.3%), 7 nonreactive (23.3%) and 1 indeterminate (3.3%). All autologous HSCT recipients were reactive before HSCT and remained so until d+90. There was no difference between the QTF-CMV results between the allogeneic or autologous HSCT before HSCT. At d+30, 100% of autologous HSCT were reactive compared to 32.3% of allogeneic (p = 0.001). At d+60 and d+90 about 60% of allogeneic HSCT recovered immunity to CMV and the difference for autologous HSCT was not significant. Twenty-three allogeneic HSCT presented at least one episode of positive antigenemia (71.9%). The median time for antigenemia detection was 41 days, ranging from 17 to 63 days. **Conclusion:** CMV-immunity is maintained after autologous HSCT. Post-transplant immunosuppression significantly impairs CMV-immunity as observed in allogeneic HSCT recipients.

Place of Work Fundação Amaral Carvalho
University of São Paulo

Country Brazil

Poster 038

Administration of posaconazole in immunocompromised children from a pediatric hospital

Presenter
Romina Valenzuela

First Author
Romina Valenzuela

Other Authors
Jorge Morales
Patricio García
Manuel Azocar
Sofía Canals
Paula Catalán
Julia Palma
María Elena Santolaya
Juan Pablo Torres

Background: Posaconazole is a triazole broad spectrum antifungal approved for the treatment of infections caused by Aspergillus and *Candida* in adolescents and adults, as well as an adjuvant for the treatment and prophylaxis of Mucorales, with a prophylactic dose of 200 mg every 8 hours for adults and 18 mg / kg / day in children. In pediatrics there is still no consensus on the optimal dosage, currently drug levels (DLs) greater than 0.75 mg/L are used as the target level in prophylaxis. For treatment, dosages of 200 mg every 6 hours are defined for adults and 24mg/kg in pediatrics are used in order to obtain levels ≥ 1.25mg/L. **Objective:** To determine the dose of posaconazole needed to achieve effective prophylaxis DLs (≥ 0.75 mg/L) and treatment DLs (≥ 1.25 mg/L) in invasive fungal infection (IFI) in immunocompromised children and their relationship with toxicity and drug interactions. **Methods:** Retrospective study from January 2012 to July 2016 in the Oncology and Bone Marrow Transplant Unit at Hospital Dr. Luis Calvo Mackenna in immunocompromised children including those who were instructed to use of posaconazole. Administered doses, DLs and associated toxicities were recorded. An analysis according to oral administration (PO), age and daily dose was performed. **Result:** 38 DLs were analyzed in 5 patients with acute lymphoblastic leukemia, 4/5 patients were bone marrow transplant and the median age was 10 years (range 5-16). The total measured DLs showed a median of 0.80 mg / L (0.1-1.82mg / L). During prophylaxis, 55% (16/29) was above the target level (> 0.75mg/L), with a median of 0.7 mg/L (0.13-1.74mg / L). The initial dose was 18 mg/kg/day, and in all cases had to be increased to 200 mg every 8 hours. During treatment, 33% (3/9) was above the target level (> 1.25mg/L), with a median of 0.99 mg / L (0.1-1.82mg / L). The initial dose was 24 mg/kg/day, and in all cases had to be increased to 200 mg every 6 hours.All patients received famotidine and/or lansoprazole. The most severe interactions were with vincristine in 2/5 cases (40%) (severe peripheral neuropathy). In addition, cyclosporine interaction was observed in patients receiving bone marrow transplant, demonstrating an increased level of cyclosporine by 78% and median level of 196.3 mg CsA/L. No hepatic or renal toxicities were found. **Conclusions:** 45% of the DLs obtained during prophylaxis with posaconazole and 67% of those obtained during treatment were under the target level. To achieve plasma concentrations greater than 0.75mg/L in prophylaxis and 1.25mg/L in treatment, therapeutic drug monitoring is recommended. According to the data obtained in the children of this study, optimal DLs were achieved when using doses similar to those used in adults (200 mg every 8 hrs in prophylaxis and 200 mg every 6 hrs in treatment).

Place of Work Hospital Dr. Luis Calvo Mackenna

Country Chile

Poster 039

Drug Interaction of Voriconazole - Cyclosporine in children undergoing Hematopoietic Stem Cell Transplantation

Presenter
Romina Valenzuela

First Author
Romina Valenzuela

Other Authors
Jorge Morales
Ivan Gajardo
Patricio García
Marlon Barraza
Julia Palma
Paula Catalán
Juan Pablo Torres
María Elena Santolaya

Background: Several studies have shown the relevance of the drug interactions (DI) in the management of the immunocompromised patients, mainly in oncologic patients undergoing hematopoietic stem cell transplantation (HSCT). One typical drug interaction in this population is observed using Cyclosporine (CsA) plus antifungals, specifically azoles. The interaction between CsA and voriconazole (VCZ) is categorized as level D, which indicates a significant clinical interaction that should be monitored. **Objective:** To describe the interactions between CsA-VCZ in children undergoing HSCT. **Methods:** Retrospective, descriptive study in immunocompromised children hospitalized between January 2013 to December 2014 in the Bone Marrow Transplant Unit, Hospital Dr. Luis Calvo Mackenna, Santiago, Chile. Children who received CsA and VCZ were included in the study. Clinical charts were reviewed to obtain CsA baseline level (serum sample obtained 30 minutes before the drug administration, measured by chemiluminescent microparticle immunoassay (CMIA)). **Results:** In the period of 24 months included in this study, we evaluated 39 children with cancer, undergoing HSCT, who received treatment with VCZ. Seven of them received concomitant CsA. Two patients were excluded because of a change in the immunosuppressant treatment and 5 patients were evaluated. Everyone were male. The median age was 5 years (range 3-6 years) and the median weight was 20 kg (range 17-30 kgs). Sixty-three baseline drug levels were analyzed, of those, 27 were CsA drug levels recorded previous to using VCZ and 36 were CsA drug levels recorded concomitantly with VCZ. In the first group (CsA previous to VCZ) the CsA dose was 4.6 ± 2.6 (mg/ kg/ day) and the CsA average level was 188.8 ± 84.1 (ng/ml). In the second group (CsA concomitantly with VCZ) the dose of CsA was 5.5 ± 3.0 (mg/ kg/day) (p=0.0709) and CsA average level was significantly higher: 232.5 ± 106.7 (ng/ml) (p=0.04). **Conclusion:** This study shows a significant increased level of CsA when it is used together with VCZ, emphasizing the relevance of therapeutic drug monitoring (TDM) of CsA in this clinical situation. CsA overdose should be considered a potential drug side effect that could compromise the safety of pediatric patients. TDM could improve the management of the drug interactions and optimize the co-administration of immunosuppressant and antifungal drugs.

Place of Work Hospital Dr. Luis Calvo Mackenna

Country Chile

Poster 040

Invasive candidiasis trends in patients with hematological malignancies or receiving hematopoietic stem cell transplant, 2007-2015

Presenter
Diogo Boldim Ferreira·

First Author
Diogo Boldim Ferreira

Other Authors
Maria Daniela Bergamasco
Ingvar Ludwig Augusto de Souza
Carlos Alberto Pires Pereira
Maria de Lourdes Lopes Ferrari Chauffaille
Arnaldo Lopes Colombo
Paola Cappellano

Introduction: The epidemiology of invasive fungal diseases in hematologic patients has changed dramatically after the introduction of fluconazole prophylaxis. The incidence of invasive candidiasis (IC) has reduced significantly in parallel with increasing rates of invasive aspergillosis. Otherwise, IC remains a challenge in that particular population due to episodes of breakthrough infections related to the emergence of *Candida* strains resistant to fluconazole, catheter related infections episodes, delay in diagnosis by standard methods, and high mortality rate. **Objective:** To evaluate trends in the epidemiology of IC reported in hematologic patients along a period of 9 years in order to optimize strategies for prevention and treatment of these infections. **Materials and methods:** We conducted a retrospective cohort study evaluating all hospitalized adult patients with hematological malignancies or receiving HSCT with an episode of candidemia between 2007 and 2015 at Hospital São Paulo, a teaching tertiary care hospital of Universidade Federal de São Paulo. We checked incidence rates, clinical characteristics populations, etiology, in vitro antifungal susceptibility profile, and clinical outcomes. Antifungal susceptibility was performed by the CLSI microbroth dilution test. We defined an episode of breakthrough infection as any candidemia reported after 3 days of systemic antifungal therapy/prophylaxis. Appropriate clinical management was defined when the use of an antifungal therapy with in vitro activity against the pathogen and the CVC removal were both implemented within a period of 48 hours. Trends in the epidemiology were evaluated comparing 2 periods of time: 2007-2010 and 2011-2015. **Results:** A total of 12 IC were reported in patients aging from 18 to 69 years (median 40.5), and 7 of them were female. Acute leukemia was the most frequent underlying disease (5/12), followed by chronic leukemia (3/12) and non-Hodgkin lymphoma (2/12). Three patients received allogenic HSCT. The incidence of candidemia was 3.1 per 10,000 patients-day, ranging from 4.2 in the first period to 2.2 per 10,000 patients-day in the second one. The main risk conditions observed were: 11 out 12 had a central venous catheter in place (3 tunneled and 8 non-tunneled), profound and persistent neutropenia (6), broad-spectrum antibiotic (7), mucositis (4), parenteral nutrition (1), and severe acute intestinal GvHD (1). Deep-seated *Candida* infection was documented in three subjects including: skin lesions (1), endophthalmitis (1), arthritis (1). We found that nine out 12 episodes were represented by breakthrough candidemia after exposition to fluconazole (5), itraconazole (3), and voriconazole (1). The following *Candida spp*. were identified: C. albicans (3), C. krusei (3), C. parapsilosis (3), C. tropicalis (2), and C. guilliermondii (1). Antifungal susceptibility data was available for 7 isolates, and all of them were susceptible to amphotericin B. Resistance to fluconazole was documented in 2 strains of C. krusei and 1 strain of C. tropicalis. It took a median of 2 (0-8) days to switch from azole prophylaxis to an antifungal therapy with other class of drug. Most patients were initially treated with conventional AMB that was further replaced by an echinocandin in 5 episodes. Catheter was removed in 10 out of 11 patients after a median time of 3 (0-8) days. The 30-day mortality rate was 33.3%. We observed a lower mortality rate in the second period (20.0%), than in the first one (42.9%). This difference was probably secondary to 2 main aspects: (1) a lower duration of neutropenia (21 vs 15 days) in the second period; (2) an increase in the rate of appropriate therapy with early onset of antifungal treatment and the CVC removal rate in the second period (42.9 to 60%). **Conclusion:** We demonstrated a low incidence rate of candidemia in hematologic patients. Most episodes were represented by breakthrough infections associated with 3 main conditions: progressive deterioration of host defense mechanisms, catheter related infection and the emergence of resistant *Candida* strains. There was a decrease in the incidence and 30-day mortality rate between the two study periods which was probably secondary to the adequacy of clinical management and changes in the underlying host conditions.

Place of Work Universidade Federal de São Paulo - Escola Paulista de Medicina Country Brazil

Poster 041

Molecular Identification and Antifungal Susceptibility Profiles of *Candida parapsilosis* Complex Species Isolated from Clinical Samples in an Argentinian Hospital.

Presenter
Maria Virginia Podestá

First Author
Maria Virginia Podestá

Other Authors
Paula Funes
Susana Amigot
Alicia Luque
María Elena Tosello
Marisa Biasoli

Although *Candida albicans* is the most common isolate from human infections, other *Candida* species have also been observed in the 1990s, supporting the increased frequency of non- albicans species. *Candida parapsilosis* oscillates between the second and fourth most common specie of *Candida* isolates in hospitals from different samples. *C. parapsilosis* forms a complex composed of three genetically distinct species: *C. parapsilosis* sensu stricto), *Candida* metapsilosis and *Candida* orthopsilosis. This complex species are usually susceptible to antifungal agents; however, some reports have shown that these isolates may exhibit decreased susceptibility to azoles and echinocandines. The aim of this work is identify molecularly different strains previously classified as C. parapsilosis sensu lato by phenotypic characteristics, and study its antifungal susceptibility. A total of 38 C. parapsilosis isolates were recovered from different clinical specimens: blood (12), stool (11), urine (3), cerebrospinal fluid (3), sputum (2), gastric aspirate (2), nail specimens (2), ocular injury (1), biopsy (1) and vaginal swab (1). The three reference strains were used as positive controls. The molecular differentiation of *C. parapsilosis* complex species was performed by amplification of the SADH gene with specific primers (SIF: 5'-GTTGATGCTGTTGGATTGT- 3' and SIR: 5' –CAATGCCAAATCTCCCAA- 3') and digestion by the restriction enzyme BanI. All the isolates were evaluated with Neo- Sensitabs susceptibility testing diatabs (Rosco) with the diffusion method in Muller Hinton agar with fluconazole (FLC), itraconazole (ITC), voriconazole (VOR), amphotericin B (AMB) and caspofungin (CAS) to know the antifungal susceptibility. Finally, for the strains that showed resistance to some of these antifungics, the E-test®(Biomérieux) method was used to determine the minimum inhibitory concentration(MIC). Among the 38 isolates, 34 (89,5%) were identified as *C. parapsilosis* sensu stricto, 4 (10,5%) as *C. metapsilosis* and no one was identified as *C. orthopsilosis*. Two strains of *C. metapsilosis* were obtained from blood cultures, one from stool and another one from a urine sample. According to the interpretative criteria for resistance used for the antifungal drugs described, a few isolates were resistant to azoles and AMB. Four *C. parapsilosis* sensu stricto were resistant to FLC (two from blood samples, one from stool and one from a vaginal swab). The same isolate from stool that showed resistance to FLC was resistance to ITC too. Only one *C. metapsilosis* isolate (from stool) was resistant to AMB. All strains were resistant to CAS. The MIC obtained from the resistant strains previously mentioned were: for fluconazole, 1 µg/ml (Susceptible(S) according to the new 2012 Clinical and Laboratory Standars Laboratory- CLSI- document M27- S4) for the vaginal swab strain, 4 µg/ml (susceptible-dose dependent- SDD-) and 0.75 µg/ml (S) for the two blood strains and 0,50 µg/ml (S) for the stool strain. According to the guidelines of the CLSI document M27- A3, the strain resistant to itraconazole has a MIC of 0,38 µg/ml (SDD), while the strain resistant to amphotericin B the MIC was 0,75 µg/ml (S) . The genus *C. parapsilosis* is the second most commonly isolated in hospitals in Latin America. Amplification of the SADH gene followed by BanI restriction enzyme digestion has resulted as a rapid and reliable method with high discriminative power of *C. parapsilosis* complex. In our study, *C. parapsilosis* sensu stricto was the dominant specie followed by *C. metapsilosis,* while no *C. orthopsilosis* was found, in contrast to what is showed in the present literature. Additionally, we demostrated that all the two species found exhibit differences in antifungal susceptibility profiles of FLC, ITR, VOR and AMB while all the strains were resistant to CAS.

Place of Work CEREMIC, Facultad de Cs Bioquimicas y Farmaceuticas. Universidad Nacional de Rosario

Country Argentina

Poster 042

Bloodstream infections by invasive Candida species in a third level hospital in Bogotá, Colombia: is it time to think in non-candida species?

Presenter
Ana Catalina Herrera Díaz

Other Authors
Ximena Castañeda Luquerna

First Author
Ana Catalina Herrera Díaz

Background: Infections due to *Candida spp* are nowadays an important agent of opportunistic fungal infections. Bloodstream infection by this agent is frequent in immunocompromised individuals (i.e. hematological malignancies, HIV and patients with solid organ transplants). Mortality and morbidity associated with these infections is high, making candidemia not only a public health issue but a condition that needs prompt diagnosis and treatment. The epidemiology of fungal infections is starting to change. In developed countries, bloodstream infections due to *Candida albicans* has long been the most prevalent species isolated in these patients, making it easy to treat. However, in developing countries this trend has started to change and the proportion of non-candida species and intrinsically resistant fluconazole species may be even more common. **Objectives:** To investigate the distribution of *Candida spp*. and susceptibility patterns in bloodstream infections of hospitalized patients in Fundación CardioInfantil in Bogotá, Colombia between 2014 and 2015. **Materials and methods:** This study was conducted in a tertiary care hospital, over a period of one year. Blood cultures and isolates were screened for candidemia prospectively on patients with clinical symptoms of infection. The species distribution was obtained by using standard microbiological methods and antifungal susceptibility to fluconazole and voriconazole was also recorded. **Results:** In total, 79 episodes of *Candida* bloodstream infections were identified between 2014 and 2015. The most prevalent species was C albicans with 25.3%, followed by C parapsilosis and tropicalis with 19% each. Furthermore, the total non-albicans species was higher than expected, 74.6% of the total. Intrinsically resistant fluconazole species (C glabrata and krusei) was found in 19% of the isolations. In vitro susceptibility testing showed that 77,2% of *Candida* isolates were susceptible to fluconazole MIC ≤2 µg/mL, 12.7% (MIC 4 µg/mL) were considered as susceptible dose-dependent and 8.9% were truly resistant to fluconazole (MIC ≥8). In regards to voriconazole susceptibility, 84.8% of the isolates had a MIC ≤0.125 µg/mL. 5.1% of the total bloodstream infections by *Candida* were resistant to voriconazole. **Conclusions:I**n a third level hospital in Bogotá- Colombia, the proportion of candidemia caused by non-albicans species is higher. Until now, the most prevalent agent in relation to these type of infections was C albicans. However, this shift in the trend may influence on the choice of empirical anti-fungal agent in developing countries like ours. Further research is needed and risk factors have to be assessed in a population were income and socioeconomic status is notably different.

Place of Work Fundación Cardioinfantil

Country Colombia

Poster 043

2016 AWARD NOMINEE ICHS-INFOCUS

Use of immune-profiling to predict risk of infection in patients with myeloma: pilot study evaluation

Presenter
Benjamin Teh

First Author
Benjamin Teh

Other Authors
Cody Allison
Simon Harrison
Monica Slavin
Leon Worth
Karin Thursky
Marc Pellegrini

Background: Infections are a leading cause of morbidity and mortality in patients with myeloma. Immunomodulatory drugs, proteasome inhibitors and autologous haematopoeitic stem cell transplant, the current standard of care for MM have wide-ranging effects on the immune system from immune activation to immune suppression. This is a paradigm shift from predictable myelosuppression and associated risk of infection seen with conventional chemotherapy. In addition, IMiDs and PIs pose a differential risk for infection. Therefore, clinical risk assessment for infection is increasingly complex and unreliable. We conducted a pilot study to determine the feasibility of immune profiling to predict infection risk in patients with myeloma managed with IMiDs. **Methods:** Blood samples were collected prospectively at set intervals from 40 patients who participated in a myeloma treatment trial at Peter MacCallum Cancer Centre. Peripheral blood mononuclear cells (PBMCs) were obtained by Ficoll density separation and stored at -400c prior to its use. Baseline, end of induction (EOI) and maintenance samples were evaluated. PBMCs were thawed, rested for 24 hours and immune cell populations quantified using Fluorescence-activated cell sorting analysis. 1 X 106 cells/ml were cultured in the presence of a panel of 4 stimuli (Cytomegalovirus, Influenza, S. pneumoniae, phorbol myristate acetate [PMA]) and in media alone for 72 hours and cytokines released in culture supernatants were quantified using the Milipore immunoassay bead cytokine 38plex array. Clinical and microbiology records were reviewed using a standardized data collection tool to capture patient and myeloma characteristics and to classify infection according to the following criteria: microbiologically-defined infection (MDI), clinically-defined infections (CDI) or fever of unknown focus (FUF). Immunological variables (immune cell numbers, cytokine-stimulant combinations) with significant difference between patients with and without infection in the subsequent 3-month period ($p<0.05$) were identified and further refined with univariate analysis ($p\leq0.10$) to define an immune profile. The Youden-Liu method for cut-point analysis of receiver operator curves was used to define the value that best predicts infection for immune variables identified. **Results:** 40 patients with myeloma were evaluated. Patients had a median age of 53.1 years (Interquartile range [IQR] 48.8-61.3 years), 62.5% were male, and the median Charlson comorbidity score was 5.0 (IQR 4-5). The majority of patients had IgG MM (55.5%) with 60.0% international staging system stage 1 disease. In total, 226 infection episodes were identified: 72 (31.9%) were MDI (37 viral, 29 bacterial, 6 fungal infections), 104 were CDI (46.0%) and 50 episodes were FUF (22.1%). Median time to infection was 13 months. Rates of ICU admission and 30-day mortality were 4.4% and 2.7%, respectively. There were 525 stimulant-samples with 19950 stimulant-cytokine combinations across 3 sample periods (195 baseline, 190 EOI, 140 maintenance). Analysis of differences between patients with and without infection in the subsequent 3-months after sample collection defined the following significant immune profiles: at baseline unstimulated-IL12P40 and VEGF, at EOI unstimulated-IL5 and at maintenance unstimulated-MCP1, mitogen stimulated PMA-IL3, PMA-IL4 and PMA-IL5. Responses to pathogenic antigens such as CMV, influenza and S. pneumoniae were not associated with increased risk. There was no significant difference in cell numbers between patients with and without infection and no immune cell parameter was associated with increased odds ratio for infection on univariate analysis. Optimal predictive values for IL12P40 and VEGF were 6.7 and 38.8pg/ml at baseline. During maintenance, the optimal predictive value for MCP1 was 8930.2 pg/ml and for IL3, IL4 and IL5 the values were 351.0, 489.9 and 178.0 pg/ml, respectively. **Conclusion:** Profiling release of key cytokines, including IL3, 4 and 5, in response to antigenic stimulation may assist in predicting subsequent onset of infection in patients with myeloma. Further evaluation of immune profiling in conjunction with clinical risk factors in larger study populations is required to define clinical utility and yield of testing.

Place of Work Peter MacCallum Cancer Centre

Country Australia

Poster 044

Clinical characteristics, species distribution and antifungal susceptibility of clinical Exophiala species from India

Presenter
Shivaprakash Rudramurthy

First Author
Shivaprakash Rudramurthy

Other Authors
Shreya Singh
Shveta Sethi
Basavaraj Hemashettar
Arvind Padhye
Ranganathan Iyer
Arunaloke Chakrabarti

Introduction: Phaeohyphomycosis comprises a heterogenous group of cutaneous and deep infections caused by black fungi. Species of Genus Exophiala are increasingly being reported from such cases worldwide, including India. The taxonomy of this genus has recently been revised and many new species have been described. The data on the prevalence of the species distribution based on the revised description is sparsely available or not available from India. **Goals:** To accurately identify the species, determine the clinical characteristics associated with this fungus and to determine the antifungal susceptibility profile of Exophiala species. **Methods:** All Exophiala species stored at National Culture Collection for Pathogenic Fungi (NCCPF) were revived and re-identified by phenotypic characters and sequencing of ITS region of the rDNA. The demographic and clinical and details of all the cases were collected. Phylogenetic tree was constructed using the sequences of our isolates and standard strains all described species. In-vitro antifungal susceptibility testing was performed by microbroth dilution as per CLSI M38-A2 guidelines for itraconazole, voriconazole, posaconazole, caspofungin, micafungin, anidulafungin and amphotericin B. **Results:** A total of 12 isolates could be revived and included in the study. The species identified includes E. dermatitidis (5), E. jeanselmei (3), E. spinifera (1), E. mesophila (1), E. oligosperma (1), and E. xenobiotica (1). Clinical presentation of Exophiala infections includes subcutaneous infection (5), endocarditis (3), pancreatitis (2), cerebral abscess (1), pulmonary infection (1). Majority of the patients were immunocompetent (9). The risk factors associated in other patients include post renal transplant (2), diabetes mellitus with pulmonary tuberculosis (1). Treatment modalities included surgical excision or drainage (6), and antifungal therapy (voriconazole in 7 cases, voriconazole + amphotericin in one case). All the patients responded to the treatment and discharged from the hospital. The MIC's against majority of the antifungal agents were in the susceptible range (itraconazole 0.03-.06; voriconazole 0.03-2; posaconazole 0.03-0.06; caspofungin 0.12; micafungin 0.12 -0.25; anidulafungin 0.03-0.06 and amphotericin B 0.03-1 mg/L. **Discussion and Conclusion:** E. dermatitidis was the most common species reported and was associated with invasive disease in all patients. Majority of the patients did not have any risk factor and presented with subcutaneous infections. Except an isolate each of E. oligosperma and E. dermatitidis which showed increased MIC to voriconazole (2 mg/L), the antifungal profile of all other isolates were in susceptible range. Favorable clinical response was seen with treatment with voriconazole and surgical management. We for the first time report the subcutaneous infection caused by E. xenobiotica from India.

Place of Work Postgraduate Institute of Medical Education and Research, Chandigarh

Country India

Poster 045

Case Series of Severe Acute Respiratory Infection caused by Virus among Immunosupressed Patients in Colombia

Presenter
Laura García

First Author
Laura García

Other Authors
Jorge A. Cortes
Tatiana Olarte
Edwin Vargas
Yuli Remolina
María Ulloa
Hernán Vargas
Liliana Díaz
Sandra Gómez
Alfredo Saavedra
Edgar Sánchez

Background: The Respiratory infections are considered a common cause of morbidity and mortality, viruses are an important etiology in immunosuppressed patients, who have particular clinical features that may hinder their early identification. **Objective:** To show the presence of viruses in severe respiratory infection in immunosuppressed patients. **Materials and Methods:** Patients with severe acute respiratory infection (SARI) with some type of immunosuppression, in tertiary hospitals that perform sentinel surveillance of SARI in Bogota in 2012, with respiratory sample processed for virus characterization. **Results:** Eight patients met criteria for immunosuppression. Viruses were characterized into six samples. Of which four of these influenza A viruses, followed by RSV and bocavirus was isolated. Intensive care and mechanical ventilation was required for half of the patients. Three of the patients had associated bacterial infection. Mortality was 12%. **Conclusion:** Among immunocompromised patients with severe acute respiratory infections virus are highly prevalent and may cause severe disease. Prevention and diagnostic strategies are required in this population.

Place of Work Universidad Nacional de Colombia
Secretaria Distrital de Salud

Country Colombia

Poster 046

High Prevalence of the Simultaneous Excretion of Polyomavirus JC and BK in the Urine of HIV-Infecte Patients Without Neurological Symptoms in Sao Paulo, Brazil

Presenter
Maria Cristina Domingues Fink

First Author
Luiz Henrique Silva Nali

Other Authors
Cristiane Campos Centroni
Paulo Roberto Palma Urbano
Augusto César Penalva de Oliveira
José Ernesto Vidal Bermudez
Erique Peixoto Miranda
Claudio Sergio Pannuti

Background: JC virus (JCPyV) and BK virus (BKPyV) are ubiquitous in the human population. In immunocompromised individuals, JCV is associated with Progressive Multifocal Leukoencephalopathy (PML), and with other neurological diseases (granule cell neuronopathy, encephalopathy and meningitis). In addition, BKV is associated with hemorrhagic cystitis in hematopoietic stem cell transplantation (HSCT) recipients and interstitial nephropathy in kidney transplant recipients. After primary infection, both viruses establish a persistent infection in the kidneys and may be excreted in the urine. The prolonged immunosuppression associated with AIDS contributes to the high prevalence of reactivation of these viruses. There are few reports on the prevalence of the urinary excretion of JCV and BKV and the occurrence of simultaneous excretion in HIV-infected patients. Also, BKV and JCV have been gathering attention from scientists from different areas of the medicine due to its ability to infect and cause disease in patients with different kind of immunosuppression and patients treated with monoclonal antibody based therapies. **Objective:** The aim of this study was to evaluate the prevalence of the urinary excretion of BKV and JCV in HIV-infected patients without neurological symptoms. **Methods:** Urine samples from HIV-infected patients without neurological symptoms were tested for JC virus and BK virus by PCR. Samples were screened for the presence of polyomavirus with sets of primers complementary to the early region of JCV and BKV genome (AgT). The presence of JC virus or BK virus were confirmed by two other PCR assays using sets of primers complementary to the VP1 gene of each virus. Analysis of the data was performed by the Kruskal-Wallis test for numerical data and Pearson or Yates for categorical variables. **Results:** A total of 75 patients were included in the study. The overall prevalence of polyomavirus DNA urinary shedding was 67/75 (89.3%). Only BKV DNA was detected in 14/75 (18.7%) urine samples, and only JCV DNA was detected in 11/75 (14.7%) samples. Both BKV and JCV DNA were present in 42/75 (56.0%) samples. **Conclusion:** In this study we found high rates of excretion of JCV, BKV, and simultaneous excretion in HIV+ patients. Also these results differ from the others available on the literature.

Place of Work Tropical Medicine Institute of São Paulo - Sao Paulo University

Country Brazil

Poster 047

Occurrence and Patterns of Shedding of Human Polyomavirus JC in urine samples of kidney transplant recipients in Sao Paulo, Brazil

Presenter
Maria Cristina Domingues Fink

First Author
Laura Masami Sumita

Other Authors
Cynthia Liliane Motta do Canto
Tânia Regina Tozzeto Mendoza
Claudio Sergio Pannuti

Background: The human polyomavirus JC (JCPyV) in BK (BKPyV) belong to Polyomaviridae family and are widely spread in the population. The primary infection occurs during chilhood and the seroprevalence varies between 65 and 90% in adults. After the primary infection these viruses establish latency in kidney tissue and can be reactivated by the presence of immunosuppression. The BKPyV reactivation is most often associated with cases of nephropathy in kidney transplant recipients and hemorrhagic cystitis in stem cell receptors. The JCPyV reactivation is associated with PML (progressive multifocal leukoencephalopathy), a demyelinating neurological disease that occurs in patients with aids. There are few data available in the literature on the JCPyV infection in renal transplant recipients, but some reports associated the virus with nephropathy or PML in these patients. **Objectives:** The aim of this study was to evaluate the prevalence and patterns of JCPyV shedding in two groups of patients (living and deceased donors) one-year post kidney transplant in Sao Paulo, Brazil. We also investigated the occurrence of nephropathy and central nervous system disease associated with JCPyV. **Material and methods:** Between August 2010 and September 2011, patients from department of Kidney Transplantation of Hospital das Clíncas from Medical School, São Paolo University, were enrolled in the study. The median age was 50,5 years (range:19-72) and 58,85% patients were men. Fifty-seven patients received the organ from deceased donors. The immunosuppressive regimen consisted of induction with anti-thymocyte antibodies (ATG, or thymoglobulin). Maintenance therapy consisted of a two or three drug regimen including microfenolato mofetil, prednisone and cyclosporine A or tacrolimus. From each patient one urine sample was collected monthly. The number of urine samples obtained from each patient ranged from 8 to 12. The patients were stratified by age: ≤ 30 (7); 31-40 (8); 41-50 (7); 51-60 (23); ≥ 60 (10). DNA was extracted from 200µl from urine samples with QIAmp® DNA Blood Mini Kit (QIAGEN, Hilden, Germany), according to the manufacturer's protocol. JCPyV detection was performed by a Real time PCR, using primers and probes complementary to the early region of the gene of virus (AgT), yielding an 80 bp fragment. **Results:** The overall prevalence of JCPyV urinary shedding was 54,32%. In the group of deceased donors, the JCPyV excretion occurred in 49.12% (28/57) and in the living donors group excretion occurred in 58.3% (14/24). The median onset excretion was four months after transplantation in deceased group and 5,5 months in living group. We investigated the association between JCPyV shedding and age. In the group between 17 to 30 years, 66,7% excreted the virus; from 31 to 40, 37,5%; from 41 to 50, 50,0%; from 51 to 60, 48.7% and over 61 years 70%. We compared the prevalence of JCPyV viruria between men and women, but we found no statistically significant difference (52, 38% and 51, 28%, respectively). We investigated the patterns of JCPyV urinary shedding in the two group of receptors (deceased and living donors). The shedding patterns were defined on the basis of the number of samples testing positive: sporadic (1–2 positive samples), short term (3–4 positive samples), and continuous (5–6 positive samples). In the group of living donors, 42,86% were occasional shedders and 57,14% were continuous shedders. In the group of deceased donors 21,43% were occasional shedders, 14,29% were short shedders and 64,28% were continuous shedders. No patient developed nephropathy or neurological disease associated with JCPyV in the period studied. **Conclusion:** The results of the present study demonstrate that the JCPyV is frequently reactivated in kidney transplant recipients and the shedding pattern is continuous. There was not association between the organ origin (living or deceased donor) and the frequency of reactivation. Despite of the high rate of JCPyV shedding, no association between the JCPyV infection and nephropathy or neurological disease was found, suggesting a less aggressive behavior of the virus among this population.

Place of Work Tropical Medicine Institute of São Paulo - Sao Paulo University

Country Brazil

Poster 048

2016 AWARD NOMINEE ICHS-INFOCUS

Subcutaneous (SC) Injection of CD101, a Novel Echinocandin: Efficacious, Well-Tolerated and Sustained Drug Exposures

Presenter
Taylor Sandison

First Author
Voon Ong

Other Authors
Taylor Sandison
Grayson Hough
Michael Schlosser
Ken Bartizal
Marci Peek
Santiago Lopez

Background/Goals: CD101 is a novel echinocandin displaying exceptional stability, solubility, long-acting pharmacokinetics (PK) and robust antifungal efficacy in preclinical models, and is being developed for once-weekly intravenous (IV) administration for invasive fungal infections. The availability of an intermittent subcutaneous (SC) administration may further extend the utility of CD101 beyond that of other echinocandins, to antifungal treatment and prophylaxis in the outpatient setting. Preclinical studies were conducted to evaluate the feasibility of using SC administration of CD101 for these purposes. **Methods:** The efficacy of CD101 SC was studied in an immunocompetent mouse model of disseminated candidiasis. Mice (5/grp) were challenged with Candida albicans (ATCC SC5314) via IV injection and treated with CD101 SC (1, 3 or 10 mg/kg). Micafungin via IP administration was tested as a positive control at the same 3 doses. At 24 hours following challenge, kidneys were harvested and processed for CFU enumeration. All comparisons were made between the treatment groups and time-matched vehicle groups. Previous toxicology studies conducted in cynomolgus monkeys have shown CD101 to be safe and well-tolerated at up to 30 mg/kg via IV dosing. Therefore, CD101 tolerability (and PK) by SC administration were evaluated in male and female monkeys for up to 10 days following a single 30 mg/kg dose. To determine the pharmacokinetics of CD101 following SC administration, whole blood samples were collected and the plasma harvested at approximately 0.25, 0.5, 1, 2, 4, 8, 24, 36, and 48 hours, and 3, 4, 5, 7, and 10 days postdose. Plasma concentrations were then quantified by liquid chromatography with tandem mass spectrometric detection (LC-MS/MS). Bioavailability from SC dosing was calculated by comparing the calculated area under the concentration-time profile (AUC) from SC against the AUC from IV administration of the same dose. **Results:** In the mouse efficacy study, at 2 h post infection, vehicle-treated mice demonstrated an average kidney CFU of 3.8 log CFU which increased to 6.1 log CFU at 24 h. Groups treated with CD101 SC showed significant reduction in kidney CFU when compared to the vehicle control. Animals receiving 3 or 10 mg/kg of CD101 SC showed complete CFU clearance, and 4 of 5 animals in the 1 mg/kg group were completely cleared of CFU burden by 24 h. Micafungin showed complete clearance with the 10 mg/kg dose. In the monkey tolerability/PK study, no sign of irritation or local adverse toxicity was noted. There was also no effect on bodyweight or food consumption. Doses of up to 30 mg/kg were safe and well-tolerated, as observed in previous toxicology studies in monkeys by IV administration, and achieved high systemic CD101 exposures. The PK following SC administration of CD101 30 mg/kg showed total exposure measured over a 10-day period that was comparable (80% bioavailability) to that of IV at the same dose. The maximum plasma concentration from SC administration was reached after 24 hours and was sustained throughout the first week post-dose. Concentrations started to decrease one week after injection and the terminal half-life estimated was high at approximately 124 hours. **Conclusion:** CD101, a novel echinocandin, by SC administration was efficacious, well-tolerated and achieved total exposures comparable to IV administration. CD101 SC may serve as a potential new agent and route of administration for intermittent outpatient echinocandin treatment and prophylaxis.

Place of Work Cidara Therapeutics, Inc; TransPharm Preclinical Solutions

Country USA

Poster 049

Association between diseases of the peripheral nervous system and HHV6, JCPyV and CMV infections in patients with HIV / AIDS

Presenter
Maria Cristina Domingues Fink

First Author
Cynthia Liliane Motta do Canto

Other Authors
Laura Masami Sumita
Lucy Santos Vilas Boas
Augusto César Penalva de Oliveira

Background: Neurologic complications of human immunodeficiency virus (HIV) infection remain common, despite effective antiretroviral treatment (ART). Neurologic manifestations may be due to opportunistic infection, immune reconstitution, or the virus itself, posing diagnostic challenges for the neurologist. Objective: To investigate the presence of CMV, HHV6 and JCPyV DNA in CSF samples of HIV patients with diseases of Peripheral Nervous System. **Method:** During a 2-year-long period, liquor samples were collected from 50 HIV-positive patients hospitalized in the Instituto de Infectologia Emilio Ribas, all of them diagnosed with peripheral neuritis. These samples were used to detect HHV6, JCPyV and CMV DNA by using PCR. These patients consisted of 29 females and 21 males. The median of the ages was 33 years and the CD4+ count was 66/mm3. **Results:** Sexual risk taking behavior and the usage of injectable drugs were reported in 37(74%) of the patients, showing the following clinic syndromes: 18 (36%) cases of polyneuropathy, from which 11 cases were associated to CMV, 5 to HHV6, 1 to JCPyV and 6 without differential diagnosis. Three cases of Guillain-Barre Syndrome, from which 1 was associated with CMV, 1 to HHV6 and 1 to JCPyV. 5 Cases of myelopathy (10%), from which 2 were associated to JCV and 3 without differential diagnosis. It was also discovered a case of acute lumbosacral polyradiculoneuropathy (2%) and one case of mononeuropathy (2%). In these two last syndromes, no associations with the researched virus were found. **Conclusions:** A high prevalence of CMV and HHV6 in cases of polyneuropathy (61,12% e 27,78% respectively) and paresthesia (45,5% e 22,72% respectively) were found. By comparison, JCPyV viruses were found more frequently in cases of myelopathy (40%). It was observed as well that these infections were associated with CD4 levels lower than 100.

Place of Work Tropical Medicine Institute of São Paulo - Sao Paulo University

Country Brazil

Poster 050

Characterization of Human Polyomavirus JC in Brazilian AIDS patients with and without Progressive Multifocal Leukoencephalopathy

Presenter
Maria Cristina Domingues Fink

First Author
Maria Cristina Domingues Fink

Other Authors
Laura Masami Sumita
Cynthia Liliane Motta do Canto
Augusto César Penalva de Oliveira
José Ernesto Vidal Bermudez
Claudio Sergio Pannuti

Background: Progressive multifocal leukoencephalopathy (PML) is a disease of the central nervous system (CNS) characterized by lytic infection of the oligodendrocytes and demyelination, historically associated with immunosuppressive conditions such as AIDS and certain cancers. JC virus (JCPyV), the causative agent of progressive multifocal leukoencephalopathy (PML), is classified in 7 different genotypes. Previous reports have suggested a positive association between specific genotypes and PML. **Objective:** To compare genotypes and adaptive mutations of JCPyV strains from Brazilian AIDS patients with and without PML. **Study Design:** The VP1 region of JCPyV was amplified by polymerase chain reaction from cerebrospinal fluid samples from 51 patients with PML and from urine samples of 47 patients with AIDS without central nervous system disease. Genotyping was done by phylogenetic analysis. Amino acid replacement and selection pressures were also investigated. **Results:** JCPyV genotype frequency distributions showed that genotypes 2 (32.7%), 1 (26.5%) and 3 (23.5%) were the most prevalent. Genotype 1 had a positive association ($p<0.0001$) and genotype 3 showed an inverse association ($p<0.001$) with PML. A previously undescribed point mutation at residue 91 (L/I or L/V) and (L/P), non-genotype-associated, was found in 5/49 (10.2%) and 2/47 (4.3%) JCPyV sequences from PML and non-PML patients, respectively. This mutation was under positive selection only in PML patients. A previously described substitution of T-A in position 128 showed a significant difference between PML and non-PML cases (70% versus 16%, respectively, $p<0.0005$). **Conclusion:** In Brazilian patients with AIDS, JCPyV genotype 1 showed a strong association with PML ($p<0.0001$) and JCPyV genotype 3 showed an inverse association with PML. The possible association of aminoacids substitution in residues 91 and 128 with PML in patients with AIDS must be further investigated.

Place of Work Tropical Medicine Institute of São Paulo - Sao Paulo University

Country Brazil

Poster 051

Evaluation of the correlation between susceptibility testing of *Candida spp.* performed by three different Agar diffusion methods and Sensititre YeastOne

Presenter
María Ivana Maldonado

First Author
María Ivana Maldonado

Other Authors
Nadina Caraballo
Liliana Fernández Canigia
Susana Córdoba
Guillermo García-Effron

CLSI and EUCAST established reference broth microdilution methods for yeasts susceptibility testing. However, these procedures have several limitations, as they are time-consuming and costly procedures. To circumvent these disadvantages, agar diffusion-based methods, reference (e.g. CLSI M44) and commercial were developed. The aims of this study were: 1) To compare a commercially available microdilution method (Sensititre YeastOne, SYO) with three diffusion-based procedures including LiofilchemTM (LIO) MIC strips, Neo-SensitabsTM tablets (ROSCO, tablets) and two different paper-disk (Malbran and OxoidTM). 2) To evaluate the accuracy of these methods to detect FKS mutants (echinocandin clinical resistance). A total of 41 clinical *Candida spp.* strains were analyzed (11 C. albicans, 20 C. glabrata, 2 C. krusei, 6 C. parapsilosis sensu stricto y 2 C. tropicalis), including 21 echinocandin resistant strains harboring FKS mutations (16 C. glabrata and 5 C. albicans). Susceptibility to fluconazole (FZ), voriconazole (VZ), amphotericin B (AB) and caspofungin (CAS) were evaluated by Tablets and MIC-strips. OxoidTM and Malbran paper disks were used to evaluate the susceptibility to FZ. Moreover, LiofilchemTM strips and OxoidTM disks were also used to evaluate anidulafungin (AN) and VZ susceptibility, respectively. The data obtained using the agar diffusion methods was compared with the results obtained by using SYO. Categorical agreement (CA) was assessed by using the new species-specific clinical breakpoints and very major (VME), major (ME) and minor errors (MIE) were calculated using the SYO as the gold standard for azoles and AB. With regard to echinocandins, CA and the different errors were determined by using FKS sequencing as standard since there is a strict linkage between the presence of FKS hot spot mutations and clinical echinocandin resistance. C. krusei ATCC 6258 and C. parapsilosis ATCC 22019 were used as quality control strains. CA between the SYO and LIO were 97.4% (ME 1/39), 90.5% (MIE 2/21), 100%, 68.3% and 87.8% for FZ, VZ, AB, CAS and AN, respectively. The CA obtained with Neo-SensitabsTM tablets was 64.1% (VME 3/39; MIE 11/39), 66.7% (VME 1/21; MIE 6/21), 100 % and 46.3% for FZ, VZ, AB and CAS, respectively. Turning to OXOIDTM disks, the CA for FZ was 61.53% (4/39 VME; 11/39 MIE) whilst it was 76.2% for VZ (1/21 VME; 4/21 MIE). There were no differences between the obtained CA with Malbran and OXOID TM FZ disks 66.7% (VME 3/39; MIE 10/39). Regarding echinocandin susceptibility evaluation, the CA (using FKS mutations as reference) with SYO was 100% for CAS and 81% for AN (VME 1/21; MIE 3/21); for LIO was 90.5% for CAS (MIE 2/21) and 85.7 % for AN; (VME 2/21; MIE 1/21); and for Neo-SensitabsTM tablets the agreement was 85.7% for CAS with (ME 3/21). Considerable differences in test performances were seen. LIO showed the best results of all of the diffusion methods studied. It showed superior CA when compared with SYO than disk and tablets for FZ, VZ and AB. It also showed perfect agreement with FKS sequencing when CAS resistance was evaluated. Moreover, it showed the same CA as SYO when susceptibility to AN was studied. Thus, SYO and LIO showed the best performance in detecting FKS mutants. Moreover, CAS was a better marker for echinocandin resistance than AN since we found VME with this last antifungal drug using SYO and LIO. Neo-Sensitabs tablets were almost unable to differentiate wild type from FKS1 mutant strains when new manufacturer proposed breaking point were used (40 out of 41 strains were considered resistant).

Place of Work Hospital Alemán

Country Argentina

Poster 052

Candidemia in a teaching hospital in Southern Brazil: *Candida albicans* versus *Candida non-albicans*

Presenter
Sara Letícia Kretzer

First Author
Sara Letícia Kretzer

Other Authors
Jairo Ivo Dos Santos
Emil Kupek

Introdution: Although *Candida albicans* is the most frequent yeast isolated in patients with candidemia, the emergence of non-albicans species with resistance to antifungal agents is an increasing concern. **Objectives:** To evaluate candidemia by albicans and non-albicans Candida in a teaching hospital in Southern Brazil over a five-year period. **Materials and Methods:** A retrospective longitudinal study was performed in the University Hospital of the Federal University of Santa Catarina, Brazil, to gather the microbiological and medical data from all candidemia episodes that occurred between January 2009 and December 2013. Thus we examined the relative frequency of albicans and non-albicans Candida and the associated factors among patients with candidemia caused by these species. **Results:** Overall 52 episodes ocurred with an incidence of 1,44 cases per 10.000 patient-days and mortality rate of 41,6%. Most of the cases occurred in adult patients (61,5 %) and those admitted to an ICU (53,8%). Candida albicans was isolated in 39,3% of the candidemia episodes, with 90,5% susceptibility to fluconazole, voriconazole and amphotericin B. Non-albicans species accounted for 60,7% of the isolates, with 66,7% of susceptibility to the antifungals tested. Risk factors with statistically significant association ($p < 0,05$) for non-albicans species were the use of antibiotics or corticosteroid; being submitted to major surgery or hemodialysis and having a genitourinary tract disease. **Conclusions:** The identification of Candida distribution pattern in the episodes of candidemia, as well as the recognition of risk factors and antifungal resistance profile associated with the species can aid the choice of appropriate antifungal therapy and may reduce inpatient mortality and prevent the emergence of antimicrobial resistance in hospital settings.

Place of Work Federal University of Santa Catarina. Postgraduate Program in Public Health
Federal University of Santa Catarina. Department of Clinical Analyses

Country Brazil

Poster 054

Clinical presentation of dengue fever in immunocompromised patients related to hematological malignancies: a single-center experience

Presenter
Thalita Costa

First Author
Thalita Costa

Other Authors
Luiz Guilherme Darrigo Jr
Maria do Carmo Favarin
Carlos Grecco
Ana Beatriz Stracieri
Fabiano Pieroni
Juliana Elias
Daniela Moraes
Maria Carolina Rodrigues
Clarice Machado
Belinda Simões

Introduction: Dengue virus is one of the most common vector-borne viral diseases of humans worldwide. It manifests as high fever, constitutional symptoms, rash, thrombocytopenia and could have potentially lethal complications like dengue hemorrhagic fever and dengue shock syndrome. Diagnosis tests include real-time polymerase chain reaction (RT-PCR), IgM and non-structural protein 1 (NS1) detection. Its management consists of supportive care, including transfusion of blood products. Clinical manifestation in immunocompromised patients seems to be similar to those in immunocompetent individuals, according to the literature. We present four cases of primary dengue infection in immunocompromised patients with hematological malignancies. **Case series:** Patient 1: A 4-year-old girl recipient of allogeneic hematopoietic stem cell transplantation (HSCT) due to acute lymphoblastic leukemia, with skin chronic graft-versus-host-disease (GVHD) under control, without medication, was admitted seven months after transplantation with fever, myalgia, epistaxis, gastrointestinal bleeding and pancytopenia (Hb=8.7g/dL, leukocytes=1.8x109/L, platelets=14x103/µL). The symptoms had started one day before and the diagnosis was confirmed by NS1 antigen detection and RT-PCR (serotype 2). Platelet transfusion and clinical support were offered. The symptoms remained for 25 days and the blood counts normalized after three months. Patient 2: A 59-year-old man recipient of allogeneic HSCT due to acute myeloid leukemia, in treatment with systemic corticosteroids and sirolimus for skin chronic graft-versus-host disease reported, nine months after the transplantation, a history of rash, fever and myalgia that had started five days before. The rash was similar to previous skin GVHD lesions and he had thrombocytopenia (Hb=15.8g/dL, leukocytes=6.2x109/L, platelets=47x103/µL). The diagnosis was confirmed by NS1 antigen detection and home supportive care was initiated, without transfusion necessity. The symptoms remained for 30 days and the platelet count normalized after 26 days. Patient 3: A 18-year-old man with acute lymphoblastic leukemia, at day 54 of chemotherapy protocol was admitted with neutropenic fever, headache, rash, myalgia and pancytopenia (Hb=7.4g/dL, leukocytes=0.2x109/L, platelets=9x103/µL). Initially, the headache was confused with post-lumbar puncture headache, the thrombocytopenia with post-chemotherapy status and the rash with acute transfusion reaction. The diagnosis was confirmed by NS1 antigen detection, six days after the beginning of the symptoms. Antibiotics, clinical support and platelet transfusion were initiated. He had clinical recovery and thrombocytopenia resolution 17 days after the beginning of the symptoms. Patient 4: A 67-year-old man with follicular lymphoma, treated with several chemotherapy regimens including Rituximab in treatment and maintenance approach. Due to intensive immunosuppression the patient had presented several bacterial infections and immunoglobulin reposition had been done to prevent new episodes. Eleven years after the diagnosis the patient was admitted in other service with fever, myalgia, rash and bicytopenia (Hb=12.6g/dL, leukocytes=0.66x109/L, platelets=38x103/µL), with NS1 antigen detection negative. The fever resolved after five days but the other symptoms persisted until the appointment in our service, 20 days later. At that time the RT-PCR test confirmed the diagnosis of dengue, serotype 1, and a second test, 10 days after, was positive. The symptoms remained for 20 days and the blood counts normalized after 13 days of the initial of symptoms. **Conclusion:** All patients had a long period with symptoms, more than 15 days, one of them had hemorrhagic fever and three received platelet transfusion during the infection. The diagnosis tests, NS1 antigen detection (3 patients) or RT-PCR (2 patient) were collected at 1, 20, 6 and 18 days after the beginning of the symptoms and remained positive in one case more than 30 days after onset of symptoms. In this way, we demonstrated that the viremia and the clinical resolution could have longer duration in immunocompromised patients compared to immunocompetent ones and we should suspect of dengue infection in those who present with acute fever and visit or live in endemic areas, even if the other classical symptoms are absent. These cases show that the diagnosis of dengue fever in this population is a medical challenge.

Place of Work Hospital das Clínicas da Faculdade de Ribeirão Preto da Universidade de São Paulo Country Brazil

Poster 055

Environmental and biological factors influencing Invasive Fungal Infections (IFIs) in acute myeloid leukemia (AML) patients receiving primary antifungal prophylaxis (PAP) with posaconazole (POZ)

Presenter
Mario Ojeda-Uribe

Other Authors
Stéphanie Lambert

First Author
Mario Ojeda-Uribe

Introduction: IFIs are a cause of morbidity/mortality in AML. Clinical and environmental risk-factors have been identified but IFIs are still challenging. Rational of the study: PAP with triazoles has showed efficacy but the impact of hospital environmental conditions and cytogenetic/molecular prognostic factors are not well studied in AML patients receiving PAP with POZ (PAP-P). **Material/Method:** Population. We assessed retrospectively the impact of PAP-P in 134 AML patients (2007-2014) (M/F %: 56/44) (Mean age: 59±13: range 19-83) Most AML were de novo=74% vs 2aire + t-AML=26%. Only neutropenic patients (ANC<0.5x109/L >7 days) taking POZ were included. Cytogenetics-profile: favorable 9.8%, intermediate 52.2% and poor-risk 38% (based on European-Leukemia-Net). Biologic risk-profile cytogenetics + molecular (NPM1, FLT3-ITD and CEBPa): favorable=17.2%; intermediate=37.3%; poor-risk=45.5%. Most patients (73.9%) had no significant co-morbidities, 17% diabetes mellitus, 4% COPD, 5.5% a history of professional risk-exposition (agricultural or chemical). All patients were checked for serum galactomanan antigenemia 2x/week and had a rapid chest-CT in case of prolonged fever despite wide spectrum antibiotics including betalactamines, aminosides and glycopeptides. Empirical treatment included Cancidas or Ambisome. All patients received oral decontamination (non-absorbable antibiotics: colymicine-gentamycine) and sterile food. POSACONAZOLE PRIMARY PROPHYLAXIS : ORAL suspension (40 mg/ml) taken at the dose of 200 mg(5ml) t.i.d. from the time the patient was admitted to receive chemotherapy. ANTI-LEUKEMIC THERAPY Chemotherapy cycles studied n=293 Induction 52.6% Consolidation 47.4%. Induction failure 15.4%. ENVIRONMENT (Room types) Laminar Air-Flow with positive pressure 64.8% Plasmair® 21.8% No air-controlled 13.3% DIAGNOSIS OF IFI. It was based on recommendations from the EORTC cooperative group for fungal infections (dePauw, 2008). **Objectives:** Primary endpoint: Day-60 IFI incidence after 1st day of induction or consolidation. Secondary endpoints: a) day-60 post-chemotherapy death-rate; b) use of empirical anfungal therapy; c) Impact of cytogenetics; d) biological profile; e) room type; f) cycle of chemotherapy (induction vs consolidation); g) disease status: de novo vs refractory/relapsed. **Results:** Mean duration (days): a) ANC<0.5x109/L: 18 ± 9.6; b) POZ prophylaxis: 24 ± 11; c) Controlled-air isolation:19 ± 8.5. The global incidence of IFI was 1.7% mostly during induction (2.6% vs 0.7% consolidation). Death rate at day 60:11% Empirical antifungal therapy was given to 18% of patients. No significant statistical difference was found between patients >vs< 60 yo; Sex; type of AML; cytogenetic or biological profile; disease status; air-protected vs no air-protected rooms. IFI was associated to a higher day-60 death-rate (p=0.0007). DRUG-RELATED COSTS PER PATIENT AND TYPE OF TREATMENT (figures in euros) A) Total Population n= 293 PAP-P:2420 EMPIRICAL:1467 CURATIVE:678 B) Population without IFI n= 288 PAP-P:2422 EMPIRICAL:1493 CURATIVE:0 C) Cost of empirical treatment of those who received empirical treatment. n=58 7416 D) Population with IFI n= 5 PAP-P: 2799 EMPIRICAL: 0 CURATIVE: 39736 E) IFI NEG that received empirical treatment (n=58): PAP-P: 2420+EMPIRICAL: 7416=9435 F) IFI POS (n=5): PAP-P: 2334 + CURATIVE: 39736=42070 **Discussion:** IFI prevention in AML is still challenging despite progress in diagnostic and therapeutic issues. The multidisciplinary diagnostic management we have performed over years including clinical, laboratory (cultures, antigen detection (galactomannane in the serum and BAL, molecular biology) and radiological assessment associated to the impact of PAP-P and environment control allowed a quite succesful approach to reduce the incidence of IFI in our patients. These good results appeared not to be influenced by the lack of POZ serum concentration monitoring in the population studied. **Conclusions:** The low IFI incidence observed is probably due to the favorable impact of environmental procedures and PAP-P. However, there was no significative difference in the IFI incidence between patients placed in air-controlled vs no-air controlled rooms. The IFI incidence during consolidation was very low. The interest to pursue PAP-P in this population is not validated. Pharmaco-economy aspects appears to be in favor of PAP-P in AML patients.

Place of Work GHRMSA, Hôpital E Muller, Department of Hematology and Cellular Therapy Unit Country France

Poster 056

2016 AWARD NOMINEE ICHS-INFOCUS

Effect of Anidulafungin and Human Monocytes against *Candida spp.* Biofilm

Presenter
Paula A. Icely

First Author
Paula A. Icely

Other Authors
Emilse Rodríguez
Claudia Paiva
María Soledad Miro
Cecilia Vigezzi
Claudio Abiega
Juan Pablo Caeiro
Fernando Riera
Claudia E. Sotomayor

Introduction: Candida spp bloodstream infection is a frequent form of mycosis with high mortality rates. Biofilm formation is a potent virulence factor for Candida species, as it confers significant resistance to antifungal agents and to the innate immune response. Candida albicans and Candida parapsilosis are the most prevalent species related to the biofilm mode of growth. C. parapsilosis is a frequent cause of candidaemia, particularly among neonates, in patients with vascular catheters or parenteral nutrition and in those who have received prior antifungal agents, or have undergone transplantation. Equinocandins such as anidulafungin are new drugs that broaden the available therapeutic arsenal for invasive fungal infection treatment, that display favorable pharmacodynamic and pharmacokinetic characteristics and have an excellent toxicological profile. It is unknown how antifungal agents like anidulafungin interacts with human phagocytes against Candida spp biofilms and whether anidulafungin could influence the interaction between innate immune cells and biofilms. **Goals:** Being C .parapsilosis the second most common cause of invasive candidiasis in Córdoba behind C. albicans, the aim of our study was to evaluate the activity of anidulafungin combined with human monocytes against Candidas spp mature biofilms. **Material and methods:** The clinical isolates were obtained from patients from ICU with Candidemia and identified by Maldi Tof (Biomerieux) and molecular methods as C.albicans (2 strains) and C.parapsilosis senso stricto (4 strains). Different inoculums of each strain were used to obtained two type of mature biofilm classified as high (HG) and low (LG) biomass in agreement with initial use of 3X106 or 1x105 blastoconidia respectively per well in 96 well plates at 37°C for 48 h. Quantitative measurement of biofilm formation (BF) was assessed by XTT reduction assay performed in triplicate for all strains and the averages and standard deviations were calculated. Strains were classified as Weak (Absorbance (A) <0.310) (WBF), Moderate (0.310<A<0.570) (MBF) and Strong (0.570<A)(SBF) biofilm producer. The THP-1 monocytic cell line (ATCCTIB202; ATCC, Manassas,VA,USA) was used as human phagocyte source. Mature biofilms were then incubated in the presence of anidulafungin (Pfizer; 0.12mg/L) alone, THP-1 cells alone or in combination of both, at effector cell: target (E: T) ratio of 1:1 at 37°C in a humidified 5% CO2 incubator for 22h. Untreated biofilms were used as control of 100% growth. Three replicate biofilms were used for each condition. After incubation, monocytes were lysed hypotonically. Biofilm condition and fungal damage induced by monocytes and/or anidulafungin were assessed by XTT reduction assay. **Results:** The clinical isolates used where C.albicans C001 and C003 and C.parapsilosis C008, C010, C011 and C017. All the isolates where classified by their biofilm formation capacity: C003 and C008 isolates were MBFC, C001, C010, C011 and C017 isolates were BBFC. In the 2 clinical isolates of C.albicans (C001 and C003) only in the LG mature biofilm, monocytes in combination with anidulafungin could be able to reduce biofilm metabolic activity of C003 compared with untrated biofilm (p<0, 01). In C. parapsilosis isolates, in both mature biofilms (HG and LG), monocytes in combination with anidulafungin could disminished the methabolic activity of the biofilm on C008 and C010 strains compared to respectively untreated biofilm (p<0,05; p<0,01); for C011 this effect only could be observed in LG (p< 0,001). The combined treatment was effective to reduce biofilm with low growth in 3 of 4 C. parapsilopsis sensu stricto isolates used between 40-70 %. Anidulafungin alone could be effective in LG mature biofilm on C008 and C011 strains (p<0, 01 and p<0,001 respectively), showing a decreased of 30%. **Conclusions:** The present study shows the ability of anidulafungin in combination with human monocytes to diminish the mature biofilms with low fungal growth in the majority (4/6) of the isolates evaluated. Although this antifungal agent could not appeared to achieve complete sterility of C. albicans and C. parapsilosis in biofilms formed, it shows additive effect with immune cells, and be able to remove a 50 % more of the established biofilm.

Place of Work Innate Immunity to fungal pathogens Laboratory. CIBICI-CONICET
Fac. de Ciencias Químicas, Univ. Nac. de Córdoba
Sanatorio Allende; Hospital Privado, Córdoba

Country Argentina

Poster 057

Different clinical presentations of Trichosporon species infection in cancer patients. A case series from two centers in Buenos Aires, Argentina

Presenter
Patricia Costantini

First Author
Patricia Costantini

Other Authors
Claudia Salgueira
Martin Luck
Javier Altclas
Patricia Garcia
Adriana Sorge
Luz Allende
Constanza Taverna
Roxana Vitale
Jorge Finquelievich

Background: Trichosporon spp is an emerging pathogen in cancer patients. It occurs rarely and is the second most frequent non candida yeast infection reported in international series. Most cases have been reported from USA, Europe and Asia. Since the year 2000 there are increasing reports from South America. In one Argentinian multicenter study of 1020 episodes of fungemia, 0,49 % of the isolates were Trichosporon spp. The most frequent clinical presentation was fungemia in oncohematologic patients in the setting of profound neutropenia and/or the presence of indwelling devices. The full spectrum of infections is incompletely characterized in the literature because most of the information comes from case reports of small case series. **Goals:** The aim of the present study is to describe the clinical characteristics and outcome of Trichosporon spp infection in cancer patients. **Material and Methods:** We present an observational study of consecutive cases of Trichosporon spp infection that occurred at two tertiary care hospitals of Buenos Aires, i.e. the Instituto de Oncologia Angel H Roffo of the University of Buenos Aires and the Sanatorio Anchorena from December 2010 to April 2016. The inclusion criteria were the isolation of Trichosporon spp from a significant clinical sample in the presence of clinical signs of infection in a cancer patient. The isolates were identified at local laboratories using standard mycological methods based on urease production, the presence of arthroconidia, and API's results. These results were confirmed by DNA sequencing of DNA ribosomal regions at tree reference Mycology centers. Data were collected from the patient´s medical records. **Results:** During the study period 5 infections occurred, three affected men and the other two were in women. The mean age of the patients was 59.8 years (range 51 to 69). The underlying disease was a solid tumour in 3 cases (bile duct tumour, prostatic and colon cancer) and acute myeloid leukemia in two. Infection was disseminated in 3/5 patients (2 cases of fungemia and one patient with BAL, urine and abdominal fluid positive culture) and localized in 2 cases (urinary infection associated to ureterostomy catheter and hepatic abscess). All patients had received prolonged antibiotic therapy for a mean of 41 days (range 18 to 60) previous to the fungal infection. Three patients had received chemotherapy and two were neutropenic. Tree of five patients had previous surgery. Two patients had previous bloodstream infection and one episode was a breakthrough infection during anidalafungin therapy. Tree of five patients presented septic shock with multiorgan failure. Antifungal therapy administered was fluconazole in 2 patients, liposomal amphotericin B in 2 and voriconazole in one. The two localized infections resolved after change of the ureterostomy catheter and percutaneous drainage of the liver abscess. Two patients died by day 30 and in both cases it was considered that it was related to the fungal infection and progressive leukemia in one and multiple abdominal complications following pancreatic duodenectomy in the other. Two patients received secondary prophylaxis with voriconazole and could safely receive chemotherapy and bevacizumab in one case and bone marrow transplantation in another without relapse of the fungal infection. **Conclusions:** Trichosporon spp is a rare infection in cancer patients, with only 5 cases documented during the study period. In the present series it affected patients with solid tumours and hematologic malignancies. All patients had received prolonged antibiotic therapy. Tree of five cases were disseminated and 2/5 localized infections. In two patient's death was related to the infection and their underlying disease severity. It is important to be aware of the different clinical presentations and to quickly identify this pathogen due to its intrinsic resistance to many commonly used antifungals. Multicenter prospective studies are needed to properly characterize this infection and its treatment.

Place of Work Instituto de Oncología Ángel H. Roffo. Universidad de Buenos Aires (UBA).
Sanatorio Anchorena.
Departamento Micología, ANLIS-INEI Dr. Carlos G. Malbrán.
Unidad de Parasitología y Micología, Hospital General de Agudos J M Ramos Mejía.
Centro de Micología. Facultad de Medicina. UBA.

Country Argentina

Poster 058

Acute versus Recurrent vulvovaginal candidiasis: evaluation of host and fungal factors

Presenter
Claudia Elena Sotomayor·

First Author
María Soledad Miró

Other Authors
Emilse Rodríguez
Graciela Castillo
Cecilia Vigezzi
Paula Alejandra Icely
Lara Vargas
Claudio Abiega
Fernando Oscar Riera
Ana Isabel Azcurra
Juan Pablo Caeiro
Claudia Elena Sotomayor

Vulvovaginal candidiasis (VVC) and recurrent VVC (RVVC) are two forms of a disease that affects a large number of otherwise healthy women caused by Candida species. Up to 8% of all VVC patients suffer from RVVC characterized by more than four episodes each year. A number of predisposing factors such as oral contraceptive usage, pregnancy, uncontrolled diabetes mellitus and long-term broad spectrum antibiotic treatment have been identified. The factors that determine which women will undergo the transition from sporadic VVC to RVVC are still undefined. Morphogenesis as fungal hydrolytic enzymes are relevant virulence factors during Candida vaginal infection. Meanwhile the importance of acid aspartic proteases (SAPs) during vaginal infection is known, lipases (LIPs) participation is still unclear. The aim of this study was the comparative analysis of host and fungal factors between acute (AVVC) and recurrent vulvovaginal candidiasis in patients. Patients were divided in two groups: 19 AVVC patients (27±6 years old), who had only one symptomatic episode and 61 RVVC (35±7 years old), who had four or more symptomatic episodes per year. Risk factors, treatment and treatment efficiency were obtained from medical records. Yeast samples were taken from the lateral vaginal wall using sterile swabs and growth in Sabouraud dextrose agar plates. Yeast identification was made by Maldi-Tof (Biomerieux). LIP activity was evaluated through the release of fatty acids by a plate test using the rhodamine B method. Determination of SAP production was assayed using the albumin agar plate medium supplemented with bovine serum albumin (BSA; Sigma–Aldrich). Protease and lipase activities result in a clear zone around the colony. The diameters were evaluated to semi quantify enzyme activities. C.albicans SC5314 was used as control. We found that the percentage of RVVC patients with no associated risk factors (56%) was more than two times than AVVC patients (25%). Treatment was very complex and diverse in the recurrent group compared with the single episode group. Its efficacy was higher in AVVC (80%) than in RVVC (54%). C.albicans was the most frequent strain identified in both groups. Comparative studies of the activity of both proteolitic enzyme families in AVVC and RVVC isolated Candidas have never been done. We found no differences in the activity of LIP or SAP of Candidas from both experimental groups and it was comparable with the control strain used. Our study provides evidence that 56% of patients develop the recurrent infection without having any risk factor, and we found no differences in the expression of important virulence factors between Candidas recovered from AVVC and RVVC patients. This might imply that it is the host rather than the pathogen that plays an important role in the susceptibility of RVVC.

Place of Work Laboratorio de Inmunidad Innata a Patógenos Fúngicos, CIBICI-CONICET
Fac. de Ciencias Químicas, Univ. Nac. de Córdoba

Country Argentina

Poster 059

Different presentations of Aspergillus: a series of cases in Hospital Cordoba 2014-2016

Presenter
Yohana Soledad Tissera·

First Author
Yohana Soledad Tissera-

Other Authors
Paula Budini
Carla Gimena Alonso
Maria Belen Bernal
Mariana Tarán
Noelia Berenice Rodríguez
Virginia Bossa
Jorgelina Poggi

Introduction: Aspergillosis is an important cause of morbidity and mortality in immunocompromised patients as in prolonged neutropenia, HIV /AIDS and allogeneic transplantation of hematopoietic stem cells (TCMH) or lung. In this last group the increase in the incidence is due to the use of immunosuppressive therapy. Owing to the nonspecific symptoms diagnosis should be based on the cultures and serology. Voriconazole is the mainstay of therapy. There are different presentations: allergic bronchopulmonary aspergillosis (ABPA), the semi-invasive form, the invasive forms of the airway, the cutaneous form and extrapulmonary or disseminated. **Materials and methods:** We present a case series: **Case 1:** 31 years old man with a history of congenital transposition of great arteries corrected, placement of pacemakers, pneumonectomy and previous pulmonary aspergillosis; he is admitted for chronic thoraco cutaneous fistula and for replacement of endocardial leads. Aspergillus is isolated in material of fistula and leads. It was discarded endocarditis and he was treated with voriconazole, with negativization of crops. **Case 2:** 23 years old man, a great burned with commitment 50 % of the body surface (A/B), without another background, at 7 days after admission he presented necrotic lesions in the lower limbs with bone involvement associated with febrile syndrome. Was performed toilette of injury and was isolated in skin and left tibia bone material Aspergillus associated with Pseudomona, it was started amphotericin B with good response. **Case 3:** 44 years old man with a history of bronchiectasis and pulmonary fibrosis. Consulted for cough with expectoration and dyspnea of several months of evolution without improvement after treatments. It was observed in tomography cavitated image in right upper lobe compatible with aspergilloma. Bronqueoalveolar washing was performed with positive culture for Aspergillus. Treatment started with voriconazole during 6 months, without improvement and persistence of sputum-culture positive, he begun with Amphotericin. **Case 4:** 42 years old woman admitted with 26 % AB burns. To the 3 weeks of admission begun with necrotic lesions in arms and febrile syndrome, samples were taken for cultures that were positive for Aspergillus. Voriconazole was started. **Case 5:** 29 years old woman with a history of leukemia linfoblastica admitted with diagnosis of acute septic shock 2º to respiratory infection and febrile neutropenia, febrile continuing despite antibiotic treatment. Tomography showed lesion in maxillary sinus which was biopsied. Aspergillus was isolated initiated Anfotericine. The patient died. **Discussion:** In spite of the wide variety of presentation of the Aspergillus the pulmonary form continues to be more frequent than the invasive, followed by the sinusitis. The cutaneous forms are less frequent in general and often associated with severe neutropenias; although are also present in large burned as the two cases presented. **Conclusion:** Aspergillosis is a diagnostic and therapeutic challenge. The invasive aspergillosis with extra pulmonary involvement is rare.

Place of Work Hospital Cordoba - Servicio de Clínica Médica.
Centro formador de especialistas en Medicina Interna. UNC

Country Argentina

Poster 060

Epidemiology of Cryptococcosis in Costa Rica in the last 15 years

Presenter
Juan Villalobos

First Author
Juan Villalobos

Other Authors
Jose Castro
Nury Mora

Introduction: Cryptococcosis is the most important cause of fungal meningoencephalitis worldwide, affecting immunocompetent as well as immunocompromised individuals. Most cryptococcosis cases occur in HIV-infected young men. There are few nationwide epidemiological studies of cryptococcosis published in Latin America and this is the first one realized in Central America. **Objetive:** To describe the epidemiology of cryptococcosis in Costa Rica from 2001 to 2015. **Material and Methods:** This is a retrospective, descriptive study based on the national discharge registry of the Social Security Health System of Costa Rica that gives coverage to 85% of the population, during a 15-year period. The cumulative incidence of cryptococcosis per 100,000 persons per year was determined as well as age group distribution, gender, comorbidities, infection site and mortality. In order to simplify this incidence analysis this period of time was divided into 5-year intervals. **Results:** In the last 15 years, 382 cryptococcosis infections were recorded in the national discharge diagnoses registry. The cumulative incidence for that period was 0.54 cases per 100,000 persons per year. When analyzed by 5-year intervals a progressively increasing incidence (0.45, 0.54, 0.64 cases per 100,000 persons per year) was observed and this increment reached statistical significance (p=0.0073). The disease was more frequent in males than females (RR=4.28, CI95% 3.31-5.54). Median age was 37 years (range, 0.1 - 84) with an interquartile range of 29 to 48 years. The highest incidence rate was in the 30 - 39 year age group (1.29 cases per 100,000 persons per year). The analysis of the risk factors showed that 84.6% of the cases had at least one underlying condition predisposing to cryptococcosis, HIV accounting for 56%, followed by autoimmune diseases (8.4%), malignancy (6.3%), endocrine disorders (4.5%), Kidney transplant (4.2%), and chronic liver disease (2.9%). Central nervous system was the most frequent infection site (83%), and cryptococcal meningitis was the main clinical feature. The overall hospital case-fatality rate was 28%. **Conclusion:** In the last 15 years the incidence of cryptococcal disease progressively increased in Costa Rica. The majority of cases occurred in middle aged HIV-infected males and cryptococcal meningitis was the most frequent clinical presentation. The overall hospital case-fatality rate reached 28%.

Place of Work Caja Costarricense de Seguro Social

Country Costa Rica

Poster 061

Cryptococcosis in Costa Rica: Experience with 161 HIV-uninfected persons

Presenter
Juan Villalobos

First Author
Juan Villalobos

Other Authors
Jose Castro
Nury Mora

Aim: To describe the epidemiology of cryptococcosis in HIV-uninfected population in Costa Rica in the 2001 to 2015 period. **Introduction:** Cryptococcosis is the most important cause of fungal meningoencephalitis worldwide, affecting immunocompetent as well as immunocompromised individuals. Most cryptococcosis cases occur in HIV-infected young men. There are no nationwide epidemiological studies of cryptococcosis in the HIV-negative population in South and Central America, and this is the first one. **Methodology:** This is retrospective, descriptive study based on the national discharge diagnoses registry of the Social Security Health System of Costa Rica that gives coverage to 85% of the population, during a 15-year period. The cumulative incidence of cryptococcosis per 100,000 persons per year was analyzed as well as age group distribution, gender, comorbidities, infection site and mortality. In order to simplify this incidence analysis this period of time was divided into 5-year intervals. **Results:** One hundred sixty-one cases of cryptococcosis were reported in Costa Rica in the last 15 years in HIV-uninfected persons. The cumulative incidence for that period was 0.28 cases per 100,000 persons per year. When analyzed by 5-years intervals a trend towards increasing incidence was observed (0.21 to 0.28 cases per persons per year), however this did not reach statistical significance. The disease was more frequent in males than females (RR=2.30, CI95% 1.64-3.22). Median age was 45 years with and interquartile range of 32 to 58 years. A direct statistically significant relation between age and disease incidence was found ($p<0.001$). The highest incidence rate was in the 60 - 69-year age group (0.64 case per 100,000 persons per year). Sixty-five percent of the patients had at least one predisposing factor, this underlying conditions were divided into six groups: immune system diseases (19.3%), malignancy (14. 3%), kidney diseases (13%), endocrine disorders (10.6%), chronic liver disease (6.8%), and others (2.5%). The more frequent entities within these groups were: kidney transplant (9.9%), lymphoma (9.3%), systemic lupus erythematosus (8.6%), diabetes mellitus (7.4%) and cirrhosis (4.3%). Cryptococcal meningitis was the main clinical feature of this disease (80%). The overall hospital case-fatality rate was 32%. **Conclusions:** The incidence of cryptococcosis in the HIV-negative population in Costa Rica has been stable for the last 15 years, and its frequency is directly related to age and male gender. It is more frequent in patients under immunosuppressive therapy such as those with kidney transplant and autoimmune diseases, as well as in abnormal cellular immunity entities like lymphomas. Meningitis was the main clinical presentation. One third of the cases died.

Place of Work Caja Costarricense de Seguro Social

Country Costa Rica

Poster 062

(1,3)-Beta-D-Glucan for Diagnosis of Invasive Fungal Infection in Hematologic Malignancy and Hematopoietic Stem Cell Transplant Patients in King Chulalongkorn Memorial Hospital (KCMH)

Presenter
Kamonwan Jutivorakool

First Author
Kamonwan Jutivorakool

Other Authors
Surat Wannalerdsakun
Navaporn Worasilchai
Ariya Chindamporn
Asada Leelahavanichkul

Objectives: To evaluate diagnostic performance of the (1-3)-β-D glucan (BG) assay for invasive fungal infections (IFIs) in neutropenic patients with hematologic malignancies (HM) or hematopoietic stem cell transplant (HSCT) in KCMH. **Material and Methods:** Serum BG was measured using the Fungitell® assay in adult neutropenic patients with HM or HSCT who were hospitalized in KCMH between July 2014 to February 2015. The sensitivity and specificity of the test were calculated according to the diagnostic criteria of the European Organization for Research and Treatment of Cancer/Mycoses Study Group (EORTC/MSG) 2008. **Results:** BG assay was tested in 46 patients which 17 of them (37%) had IFIs. The sensitivity, specificity, positive predictive value, negative predictive value of BG cutoff values ≥80 pg/ml for diagnosis of IFIs was 14.28, 96.87, 66.67, and 72.09%, respectively. The time between onset of fever and BG detection was averagely 3 days shorter than the time to diagnosis of IFIs by the EORTC/MSG 2008 (P= 0.667). **Conclusion:** The single time point BG assay had lower sensitivity than in previous studies. Serial BG measurement should be considered for enhancing the diagnostic performance of early IFIs in high risk group patients.

Place of Work Chulalongkorn Hospital

Country Thailand

Poster 063

Bloodstream Infection after Allogeneic Hematopoietic Stem Cell Transplantion

Presenter
Hugo Manuel Morales·

First Author
Hugo Manuel Morales

Other Authors
Nádia Riechi
Ana Carolina Anversa
Monique Sousa
Keite Nogueira
Samir Nabhan
Carmen Bonfim
Ricardo Pasquini
Cristiane Stier

Introduction: Bloodstream infection (BSI) is an important cause of morbidity and mortality in patients undergoing hematopoietic stem cell transplantation (HSCT), especially in the pre-engraftment phase. Important changes in the etiology of these infections are reported during the last decades. Unfortunately, little is known about the etiology of BSI in HSCT subjects from Latin America. We aimed to describe the epidemiology and outcome of BSI in HSCT in a University Hospital from Brazil. Methods We collected the clinical and microbiological data from patients who underwent HSCT between 2011 and 2015 and performed a retrospective analysis. **Results:** Throughout the study period, among 338 patients underwent HSCT. Eighty-seven patients (25,7%) developed a total of 107 episodes of BSI. Out of 87, 72 (82,8%) developed only one episode, 15 (17,2%) two episodes, and 5 (5,7%) three or four episodes. The first episode incidence at 7, 14, 30, 60 and 100 days after trasnplantion was 7,7 %, 16,6%, 17,5%, 20,1%, and 22,8%. Fifty-nine patients were male (67,8%) and the average age was 21 years (0-59). The type of transplant was unrelated in 41/87, related in 30 and haploidentical in 7. Overall, 111 pathogens were isolated, 68 (61,3%) gram-positive cocci, 38 (34,2%) gram-negative rods and 5 (4,5%) fungi. Coagulase-negative staphylococci accounted for 37 of 111 (33,3%) isolates, Enterococcus sp. for 17 (15,3%), Acinetobacter spp for 12 (10,8%) and Enterobacteriaccae for 16 (14,4%). Aplastic anemia (19/87), Acute Lymphoblastic Leukemia (18/87) and Fanconi Anemia (14/87) were most common underlying diseases found. By day 365 post-transplant, 24 (27,6%) out of 87 patients had died. Of them, 5 (5,7%) died within 7 days and 15 (17,2%) died within 30 days of the BSI. Carbapenem resistance was found in 18,7% (3/16) of Enterobacteriacceae isolates and in 16,7% (2/12) of Pseudomonas or Acinetobacter isolates. Vancomycin-resistance was found in only 11,8% (2/17) of Enterococcus spp isolates. The overall mortality among patients with carbapenem-resistance BSI was 40% (2/5) compared to 18,2% (4/22) from carbapenem-sensitive an to 21,2% (8/37) from coagulase-negative BSI **Conclusion:** Antimicrobial resistance, particularly carbapenem-resistance, may have a negative impact on mortality and efforts should focus on prevention, early detection and improving empirical treatment accuracy.

Place of Work CHC-UFPR

Country Brazil

Poster 064

European Clostridium Difficile Infection Surveillance Network-results of investigation in a participating country

Presenter
Milica Jovanovic

First Author
Sofie van Dorp

Other Authors
Mitra Drakulovic
Dubravka Papic
Sladjana Pavic
Aleksandra Andric
Snezana Jovanovic
Milos Korac
Ivana Milosevic
Radmila Popovic
Ed Kuijper

Background. Clostridium difficile (CD) is an important cause of nosocomial acquired diarrhoea and pseudomembranous colitis. It affects mainly elderly people who have been admitted in a healthcare setting and received broad-spectrum antibiotics. CD infections are among the most frequent healthcare-associated infections in Serbia. **Goals.** In 2013, Serbia participated in the European Clostridium Difficile Infection Surveillance Network (ECDIS-Net) who launched a pilot study to enhance laboratory capacity and standardize surveillance for CD infections. **Materials and methods.** Two clinics of Clinical Center of Serbia from the capital and one general hospital from other metropolitan area of the country participated. Patients' stools were collected at bacteriology laboratories of both centers and cultivated for CD. All CD isolates were sent to the Reference Laboratory at Leiden for PCR ribotyping, detection of toxin genes (tcdA and tcdB), as well as binary toxin genes (ctdA and ctdB). Demographic data, patient's data and epidemiological data were registered with ECDIS-net protocols in SPSS database. **Results.** The CD infections incidence rates in two clinics of Clinical Center of Serbia and the general hospital were 19.0, 12.2, and 3.9 per 10,000 patient-days, respectively. In total, 49 patients were enrolled in the study with average age of 72 years. Of 47 patients with healthcare-associated CDI, 40.4% acquired CDI in another hospital. In 51% of all patients with CDI, symptoms were present on admission. A complicated course of CDI was found in 14.3% of all patients. Six (12.2%) of 49 patients died, but not attributable to CDI. Two patients who died had an infection with C difficile PCR ribotype 027. Of 39 C. difficile isolates available for ribotyping, 78.9% belonged to ribotype 027; other PCR ribotypes were 001, 015, 002, 005, 010, 014, and an unknown type 276. **Conclusions.** Although we found a high incidence rate of C. difficile PCR ribotype 027 in all participating hospitals, we could not find increased morbidity and mortality in patients infected with type 027 compared to another PCR ribotype. Therefore, our results favour the hypothesis that there is no association of specific PCR ribotypes with development of severe diseases and clinical outcomes. National surveillance is important to obtain more insight in the epidemiology of CDI and to compare the results with other European countries.

Place of Work Clinical Center of Serbia

Country Serbia

Poster 065

Safety and Pharmacokinetics of Single and Multiple Doses of CD101 IV: Results from Two Phase 1 Dose-Escalation Studies

Presenter
Taylor Sandison

First Author
Taylor Sandison

Other Authors
Jonathan Lee
Voon Ong
Dirk Thye

Background/Goals: CD101 is a novel echinocandin with activity against Candida and Aspergillus spp. and robust antifungal efficacy in preclinical models, in development for once-weekly administration for invasive fungal infections. Two randomized, double-blind, placebo-controlled, phase 1, dose-escalation trials were conducted to establish the safety and pharmacokinetics (PK) of single and multiple weekly dosing of CD101 administered intravenously. **Methods:** Sequential cohorts of 8 healthy subjects (n=6, active; n=2, placebo) received single (50, 100, 200, 400 mg) or multiple doses (100 mg ×2, 200 mg ×2, 400 mg ×3) of CD101 infused intravenously over 1 hour, once weekly. Plasma and urine samples over 21 days were collected for PK assessments. Safety and tolerability were assessed by adverse events (AEs), vital signs, physical exams, electrocardiograms (ECGs), and safety laboratory values up to 21 days after dosing. **Results:** Overall incidences of AEs in the CD101 and placebo groups were similar. The majority of AEs were mild, and all resolved completely. The 400 mg x 3 dose group of the multiple-dose study had slightly higher incidences of AEs and mild transient infusion reactions. In both studies, there were no clinically significant postbaseline safety laboratory abnormalities; no safety issues related to ECGs, vital signs, or physical exams; and no deaths, serious AEs, severe AEs, or withdrawals due to an AE. CD101 demonstrated dose-proportional plasma exposures, low apparent clearance (<0.3 L/hour), a long half-life (>80 h), minimal urinary excretion (<1%), and minor accumulation (30% to 55%, multiple-dose study). **Conclusion:** CD101 administered intravenously was safe and well tolerated as single and multiple doses up to 400 mg once weekly for up to 3 weeks. CD101 demonstrated high plasma exposures that may improve treatment outcomes and a long half-life that enables weekly dosing. These findings support the continued development of intravenous CD101 as a once-weekly therapy for invasive fungal infections.

Place of Work Cidara Therapeutics, Inc.

Country USA

Poster 066

Fusarium Skin Infection in Immunocompetent Adults

Presenter
Claudia Frola

First Author
Claudia Frola

Other Authors
Liliana Guelfand
Marcelo Gismondi
Antonella Angiono
Sofía Becu
Ricardo Salmon
Fabiana Chaile
Silvia Tutzer
Héctor Pérez

Background: Fusarium species causes a wide spectrum of infections in humans. Host immunity plays a role in the severity of the disease. The pathogen generally affects immunocompromised individuals, with infection of immunocompetent persons being rarely reported. The infection is thought to be acquired by inhalation of conidia, with subsequent hematogenous dissemination. In addition, the skin may occasionally be a portal of entry, from tissue breakdown or onychomycosis. The species most frequently involved in human infections are Fusarium solani, F. oxysporum and F. moniliforme. As antifungal susceptibility can differ between the different Fusarium species, identification at species level is recommended. Therapy is complicated further by these variable susceptibilities. **Goals:** To report and describe the clinical presentation, evolution, treatment regimens, and management outcomes of infection by Fusarium spp. in immunocompetent hosts. **Methods:** A retrospective chart review was conducted on two patients diagnosed with Fusarium skin infection in the Hospital Fernandez, Buenos Aires City from January 2014 to December 2015. **Results:** Over a two-year period, we treated 2 patients with Fusarium skin infection without history of immunocompromised. Their ages were 48 and 81 years. These patients had a history of recent skin breakdown at the site of the fusarial infection, either as a result of injuries related to soccer or osteoarticular surgery, respectively. They were admitted to hospital with unilateral edema and pain in the legs. The anterior and lateral surface of the leg presented multiple deep necrotic ulcerous lesions with pus discharge and perilesional erythema. There was only localized involvement, plus a slow pace of progression, but one patient developed multiple subcutaneous nodules in addition to ulcerous lesions. Both patients were initially treated with different antibiotics for a period between 45 and 61 days. The diagnosis was established with biopsy and cultures from the skin growing Fusarium species. Pathological examination of slides stained with Giemsa showed hyphae, and Gomori methenamine silver staining identified septate fungal organisms with acute angled branching. Blood cultures were negative. The fungus was identified as F. dimerum and F. solani by culture of biopsy fragments. In the first isolation, matrix-assisted laser desorption ionization time of flight mass spectrometry (MALDI-TOF MS), as a complementary method for identification of Fusarium species, was utilized. The minimum inhibitory concentration of antifungal agents was determined for 2 isolates. Both were to voriconazole ≤4 µg/mL, amphotericin B ≤ 4 µg/mL and terbinafine ≤1 µg/mL. Regarding the therapeutic management, both patients initially received amphotericin B, one of which continued with combination therapy (voriconazole/terbinafine) and the other one received monotherapy with voriconazole and surgical debridement. Both were cured and recovery was confirmed at follow-up. The patient with the surgical antecedent had preexisting onychomycosis with the same Fusarium specie isolate. **Conclusions:** One of the most frequent aspects of infection by Fusarium species in an immunocompetent patient is the development of localized skin lesions and a chronic course, which frequently becomes the only source of diagnostic material. These cases highlight the need to characterize the clinicopathological features of skin infection involvement in fusariosis and to establish their role in the diagnosis and management of this infection. The complete identification and antifungal susceptibility patterns are of high interest to improve the management of patients. However, there are still some species that are difficult to identify morphologically and in these cases, the MALDI-TOF MS is a rapid identification tool for the recognition of species within Fusarium species complexes, when it available. F. dimerum is a species rarely described as a human pathogen. This report was isolated from an adult male suffering from ulcerous lesions following an injury related to soccer, probably because it typically a soil fungus.

Place of Work Hospital Juan A. Fernández

Country Argentina

Poster 067

Colonization with Multidrug Resistance Gram Negative (MDR-GN) – Importance in the Risk of MDR Bacteremia and Mortality in a Cohort of Stem Cell Transplant Patients (HSCT)

Presenter
Marcia Garnica

First Author
Marcia Garnica

Other Authors
Priscila Gabriele Antunes de Jesus
Thabata Martins Granero Pereira Castelli
Luisa Albuquerque
Renata M. Collareda dos Santos
Luzinete da Conceição de Oliveira Rangel
Marcia Rejane Valentim
Angelo Maiolino

Background: Emergence of multidrug resistant infection (MDR) is a worldwide phenomenon, and has been associated with high mortality and clinical complications in febrile neutropenia (FN). Gut translocation is the most important portal of entry of bacteria during neutropenia, and a MDR gut colonization is a possible risk factor for MDR bacteremia during neutropenia. Goals: In the present study, we describe the frequencies of Gram-negative with extended beta-lactamase production (ESBL_GN) and carbapenemase production (ERC_GN) and analyzed their relation with ESBL and ERC_GN bacteremia in stem cell transplant patients (HSCT). **Methods:** Prospective cohort of HSCT patients from 2012 to 2015. All patients had perianal swabs performed weekly during the hospitalization for the identification of ESBL_GN and ERC_GN. Patients with at least one positive swab (ESBL or ERC_GN cases) were compared to patients with no documentation of ESBL or ERC GN (controls). The outcomes analyzed were bacteremia due to ESBL or ERC, and overall mortality. **Results:** There were 267 HSCT performed during the study (232 [87%] autologous and 35 [13%] allogeneic). Multiple myeloma and Hodgkin disease were the two more frequent baseline diseases (N=143; 55%, and N = 47; 18%), respectively. The median age was 54 years (ranging from 4 to 74y). ESBL and ERC_GN colonization were documented in 28% (N=75) and 6.3% (N=17), respectively. Colonization were detected at admission (first week swab) in 46% and 47% of ESBL and ERC_GN colonized patients. From all ESBL colonized patients, 6 developed ESBL-bacteremia (8%; OR 5.4; CI95% 1.33 – 22.4; p=0.017). Among ERC colonized patients, 2 developed ERC-bacteremia (11.8%; OR 33.5; CI95% 2.87 – 390; p=0.011). Overall mortality in ESBL and ERC colonized patients were 6.7% vs. 1.6% (p=0.04) and 18% vs. 2% (p=0.009) comparing to non-colonized patients. Predictive positive and negative values for MDR-bacteremia were 8% and 98% for ESBL colonized patients, and 9% and 98% for ERC colonized patients, respectively. **Conclusion:** The frequencies of ESBL and ERC colonization were high (around 30% for ESBL and 6% for ERC), and half of them had colonization documented at HSCT admission. ERC colonization had a strong association with ERC bacteremia and overall mortality. The information of MDR colonization surveillance can be a toll to improve adequacy in empirical febrile neutropenia therapy in HSCT patients, considering the very high negative predictive value.

Place of Work Universidade Federal do Rio de Janeiro and Complexo Hospitalar de Niteroi

Country Brazil

Poster 068

Candidemia: identification of cryptic species in Candida parapsilosis complex, its distribution, antifungal susceptibility and biofilm- forming capacity

Presenter
Claudia E. Sotomayor

First Author
Cecilia Vigezzi

Other Authors
Catiana Dudiuk
Paula A. Icely
Emilse Rodriguez
María Soledad Miró
Claudio Abiega
Juan Pablo Caeiro
Fernando O. Riera
Guillermo García-Effrón
Claudia E. Sotomayor

Introduction. In recent years, Candida species have emerged as an important cause of invasive infections mainly among immunocompromised patients. When the fungus enters the blood stream it can invade deep tissues and organs, causing significant morbidity and mortality. Early reports showed that the classification of the main Candida spp (C.albicans, C.parapsilosis and C.glabrata) has been changed due to the description of new closely-related species, known as cryptic species. C. parapsilosis complex was divided into three groups, based on molecular typing with specific primers: C.parapsilosis sensu stricto, C.orthopsilosis, and C.metapsilosis, the first being the most prevalent. **Goals.** In this study we analyzed the local frequency of the different Candida spp. from blood stream isolates and the distribution of species by age of the patient. Also, we evaluated the presence of cryptic strains of C.parapsilopsis complex by molecular biology and assessed the biofilm-forming capacity (BFC) and antifungal susceptibility of these isolates. **Materials and methods.** 35 patients with candidemia from two local hospitals were studied. The yeasts were isolated from bloodstream and molecularly identified (ribosomal operon sequences). For the determination of minimum inhibitory concentration (MIC) CLSI (doc m27a3 y s4) protocol was used. Quantitative measurement of biofilm formation was assessed by XTT reduction assay performed in triplicate for all strains and the averages and standard deviations were calculated for all experiments. Strains were classified as Weak (Absorbance (A) <0.310) (WBFC), Moderate (0.310<A<0.570) (MBFC) and Strong (0.570<A) (SBFC) biofilm producer. The C. albicans strains ATCC 36801(WBF) and Sc5314 (SBF) were used as controls. **Results.** Of the total isolates studied, almost 50% were C. albicans, followed by 30% of C. parapsilosis, while the other 20% was distributed among species usually found as isolated episodes. As expected, distribution of species varied with age: in younger patients C. albicans predominated, followed by C. parapsilosis, while in patients over 60 years old C. parapsilosis became more frequent. Interestingly, the molecular typing revealed that within C. parapsilosis complex, the distribution was C .parapsilopsis sensu-stricto 60% and C. ortopsilosis 40%, showing an unusually high percentage of a cryptic strain of the latter. No C.metapsilopsis was found. All isolates of both species were able to form biofilm on polystyrene surface. The comparative analysis showed that C. parapsilopsis sensu stricto could be classified as SBFC, while the cryptic strain as MBFC. C. parapsilopsis sensu stricto isolates exhibited higher MIC values to Caspofungin than those from C.ortopsilosis ($p<0,05$) , showing that C.parapsilosis was more resistant to this antifungal agent. **Conclusions.** This work provides information regarding the local distribution of species and their prevalence according to age in patients with candidemia. The recent classification of cryptic species within the genus Candida is clinically relevant because it is likely to differ in virulence and resistance to antifungal drugs. By using molecular identification techniques, it was possible to distinguish exactly each closely-related species. Interestingly, while the previously reported frequency for C. ortopsilosis ranged between 2 and 10% of C. parapsilosis cases, our study has shown an unusually high number (40%) of C. ortopsilosis-caused cases.

Place of Work
Lab. de Inmunidad Innata a Patógenos Fúngicos CIBICI-CONICET- Fac. de Ciencias Químicas, Univ. Nac. de Córdoba.
Grupo de Investigación en Inmunología y Micología.
Lab. de Micología y Diagnóstico Molecular, Cátedra de Parasitología y Micología
CONICET, Univ. Nac. del Litoral, Santa Fe
Hospital Privado
Sanatorio Allende

Country Argentina

Poster 069

Evaluation and implementation of prevention measures in non-HIV immunocompromised patients

Presenter
Pablo Bravo

First Author
Natalia Pozzi

Other Authors
Pablo Bravo
Mariela Sierra
Iris Nora Tiraboschi

Background: Infectious complications are common in non-HIV immunocompromised patients. Prevention, diagnosis and treatment are primary objectives. The evaluation by specialist in infectious disease is a pillar of great importance in addressing this type of patients. **Objective:** The objectives of this study are to define the general and demographic characteristics of the non-HIV immunocompromised patients who attend at the hospital, describe prevention measures indicated and to identify the occurrence of infectious complications in this group of patients. **Materials and Methods:** A retrospective study that included all non-HIV immunocompromised patients attending the outpatient and continued to follow-up (at least three visits) between January 2014 and January 2016. We evaluated demographic characteristics, pathology, immunosuppressive therapy, prevention and development of infectious complications. The statistical analysis was performed using Epi Info program. **Results:** During the study period 317 patients were evaluated with a mean age of 52.6 years and female predominance. Among the patients studied, most (54%) was in immunosuppressive treatment of inflammatory diseases (in most cases rheumatologic); followed by oncohematological patients (25%), hematopoietic cell transplant recipients (13%) and renal transplant recipients (8%). Vaccination was far more indicated prevention. Vaccines for influenza, hepatitis B and Streptococcus pneumoniae is indicated in all patients who had not previously received, corresponding to 52%, 87% and 70% of patients evaluated, respectively. The 88% of patients who were tested had protective antibodies against hepatitis B after vaccination. In the group of patients under immunosuppressive therapy, the most frequent infectious complications were bacterial and herpes viral infections that did not require hospitalization. While oncohaematological and hematopoietic cell transplant recipients were the group most opportunistic infections that required hospitalization presented (p <0.5). **Conclusions:** The evaluation and monitoring of the non-HIV immunocompromised patients is a key to prevention and early diagnosis of infections. In our experience immunization is preventive measure mentioned most frequently in daily practice. Serious infectious complications developed in oncohaematological patients and in bone marrow transplant recipients.

Place of Work Hospital de Clínicas José de San Martín

Country Argentina

Poster 070

Extrameningeal cryptococcosis in relation to different types of immunocompromised: case series.

Presenter
Yohana Tissera

First Author
Yohana Tissera

Other Authors
Aldana Mano
Fernando Riera
María Florencia Spesso

Introduction: The cryptococcosis is a systemic opportunistic mycosis, of worldwide distribution, that occurs mainly in patients with significant immune deficiency. Has mostly been described in patients with HIV/AIDS infection, and to a lesser degree, in other conditions with immunosuppression such as neoplasms, transplants, diabetes mellitus, liver cirrhosis, kidney failure, collagenopathies or use of corticosteroids. The most common form is the meningoencephalitis in 80-90%, being the lung presentations less frequent. In not-HIV patients, infection is presented as a lung injury, skin injury or CNS, and more rarely as intraabdominal lesions. Due to the rarity of the visceral infections, and to the absence of a specific clinic its diagnosis is difficult. After reaching the diagnosis, it is important to start an appropriate antifungal treatment due to the high mortality of this pathology. **Objectives:** The aim of our work is to present 3 cases of cryptococcosis extrameníngea that are the less frequent forms and analyze their most frequent risk factors. **Materials and Methods:** We present 3 cases between 2015 and July 2016. **Case 1**: 63 years old man with type 2 diabetes, heart failure and HTA native of rural area. Presented febrile syndrome and asthenia, weight loss of 3 months of evolution. At admission had a liver failure, in the tomography is noted mediastinal and retroperitoneal adenopathies, bilateral tumor in adrenal and hepatosplenomegaly, with histopathological examination of adrenal and liver compatible with Cryptococcus neoformans,negative blood cultures. Starts treatment with amphotericin. **Case 2**: 54 years old woman with a history of autoimmune hepatitis in treatment with corticoids and azathioprine. Presented abdominal pain, nausea, vomiting and fever without respiratory symptoms of 1 day of evolution, right pulmonary infiltrate, admitted with diagnosis of septic shock 2º to spontaneous bacterial peritonitis, then isolates C. neoformans in blood and urine cultures, starts treatment with Amphotericin. **Case 3**: 44 years old man without pathological personal history, query by dyspnea and pleuritic pain of a month of evolution associated with febrile syndrome of 7 days. In the chest x-ray looks mild right pleural effusion. C. neoformans is isolated in blood and pleural fluid obtained by thoracentesis, diagnostic is performed of HIV. **Discussion:** despite being the lung the gateway of the Cryptococcus neoformans, Lung localization is of low incidence, in respect of CNS and even more in immunocompromised patients, even less frequent are the abdominal forms. Another important fact in this series of cases is the increase in the incidence in inmunocompromised patients not HIV as in the use of corticosteroids and diabetes mellitus. **Conclusion:** Presentations extrameníngea are of low frequency, is suspected late and have high lethality. The majority of the cases of cryptococcosis infections occurs in patients with HIV/AIDS with advanced immunosuppression. In another type of immunosupressed patients is less well known, but has been increasing in frequency.

Place of Work Hospital Córdoba, Córdoba

Country Argentina

Poster 071

Clinical Relevance of a Positive Polymerase Chain Reaction for Respiratory Viruses in Children with Cancer

Presenter
Juan Pablo Torres

First Author
Juan Pablo Torres

Other Authors
Gaby Rivera
Montserrat Ríos
Verónica De la Maza
Mauricio Farfán
Giannina Izquierdo
Verónica Contardo
Ana María Álvarez
María Elena Santolaya

Background: Infection is a main cause of morbidity and mortality in children with cancer and febrile neutropenia (FN). Significance of molecular detection of respiratory viruses(RV) and their relation with disease is not clear. The aim of this study was to determine the clinical relevance of a positive polymerase chain reaction(PCR) for RV in children with cancer and FN. **Methods:** Children with cancer, presenting with FN at five hospitals in Santiago, Chile, were prospectively evaluated (May, 2012 - July, 2015) by clinical examination, blood cultures and nasopharyngeal sample for 17 respiratory viruses multiplex-PCR. Clinical outcome variables were determined. **Results:** 770 episodes of FN were enrolled. 211 episodes with detection of ≥1RV were analyzed. The median age was 60 months and patients consulted with a median of 2 hours from the onset of fever. On admission, 38% (n=82) presented upper respiratory tract infections (URTI), 21% (n=45) lower respiratory tract infection (LRTI) and 40% (n=84) did not present any respiratory symptom. Most frequents RV detected were rhinovirus (48%), RSV (17%), parainfluenza (14%) and influenza (8%). On admission, 60% of patients with positive-PCR presented respiratory symptoms/signs, increasing to 80% at discharge (p=0.0001). URTI episodes increased from 39% (n=82) to 41% (n=86) at discharge, while LRTI significantly increased from 21% (n=45) to 33% (n=69;p=0.01) at discharge. 50% of asymptomatic episodes at admission presented URTI/LRTI at discharge. In the control group (no pathogen detected) we observed only 26%(n=79) of episodes with respiratory symptoms/signs (p<0.05) at admission without significant progression to LRTI. **Conclusions:** In children with cancer and FN, positive-PCR for RV in a sample obtained few hours after the onset of fever was associated with respiratory symptoms in 60% of episodes and increased significantly to 80% at discharge. 8 out of 10 children with a positive-PCR at admission developed respiratory disease. A significant progression from URTI to LRTI was observed in the positive-PCR group compared to a control group. (FONDECYT-Grant#1130911, 1120800).

Place of Work Departamento de Pediatría, Facultad de Medicina, Universidad de Chile

Country Chile

Poster 072

Distribution and antifungal susceptibility profile in Non- Candida albicans isolated in Intensive Care Unit. University Hospital. Montevideo, Uruguay

Presenter
Yerizada Rodriguez

First Author
Ana Otero

Other Authors
Yerizada Rodriguez
Ana Laura Barloco
Raquel Ballesté

Introduction: Fungal infections have emerged as agents of opportunistic infections in immunocompromised patients in recent decades, being Candida sp. responsible of high morbidity and mortality in patients hospitalized for prolonged periods in intensive care units (ICU). Over time, as a consequence of the use of broad spectrum antifungal drugs, epidemiological changes in the distribution of Candida species causing infection and emergence of species with intrinsic resistance or acquired secondary to antifungal drugs use have been observed. Although Candida albicans remains the most prevalent species, non-albicans species have become more important in recent years, where an increased resistance to antifungal drugs has been described. In this scenario, the need for periodic survey of local epidemiology, including monitoring of species distribution and antifungal susceptibility testing of Candida sp. with focus on non-albicans species is imposed. **Objective:** To determine the distribution of non- albicans species and their sensitivity profile to fluconazole, voriconazole and amphotericin B in isolates obtained from different clinical samples in patients hospitalized in the ICU of the University Hospital (Montevideo, Uruguay).**Materials and methods:** A descriptive, retrospective cross-sectional study based on the analysis of samples from patients admitted to the ICU received in the Microbiology Unit of the Clinical Pathology Laboratory, during the period between September 2011 and September 2015. All non-albicans species of Candida sp isolated during this period were included. Yeasts Identification was performed by macro and micromorphological study of colonies, germ tubes production and carbohydrate assimilation with API 20 C Aux (BioMerieux) and in automated VITEK 2 C platform (BioMerieux). Sensitivity to fluconazole, voriconazole and amphotericin B was studied with VITEK 2 C (BioMerieux). For the interpretation of results cutoffs from CLSI-2008 were considered. Data analysis was performed using Microsoft Excel for Windows. **Results and conclusions:** A total of 68 strains were isolated from different clinical samples, 25 urines, 12 gastric aspirate, 9 peritoneal fluids, 7 traqueal aspirate, 6 blood cultures, 2 vaginal swabs, 2 retroperitoneal collections, 1 isolate of pancreatic sample, 1 surgical wound, 1 puncture soft tissue, 1 liver abscess and 1 catheter tip. The distribution of species isolated was: Candida glabrata (21) 30.8%, Candida tropicalis (19) 27.9%, Candida parapsilosis (14) 20.6%, Candida krusei (7) 10.3%, Candida dubliniensis (5) 7.4% and 3% of the isolates were identified as Candida guillermondii (1) and Candida kefyr (1). Regarding sensitivity profile to antifungal drugs: 86% of Candida glabrata and 93% of Candida parapsilosis were sensitive to the 3 antifungal drugs. All (7) Candida krusei isolates were resistant to fluconazole, one was dose dependent sensitive (SDD) to voriconazole and all of them were sensitive to amphotericin B. Candida tropicalis strains, Candida dubliniensis and Candida kefyr were sensitive to three antifungal drugs. The isolation of Candida guillermondii was SDD to voriconazole. As in previous national survey Candida glabrata was the most prevalent species, but in this work an increase in the proportion of Candida tropicalis over Candida parapsilosis was observed unlike previous observations. No resistant strains were detected against the antifungals proved, we could infer that in our ICU any of the antifungal drugs can be used empirically; however, we consider of paramount importance to perform identification to species level and study antifungal drugs susceptibility profile in all isolations from ICU, due to the dynamic changes in species distribution and the need to early detection of the emergence of resistant strains.

Place of Work Hospital de Clínicas. Facultad de Medicina. Universidad de la República

Country Uruguay

Poster 073

Virulence factors of Candida species isolated from invasive and non-invasive infections: Biofilm formation and cell surface hydrophobicity

Presenter
Emilse Rodriguez

First Author
Emilse Rodriguez

Other Authors
Paula Alejandra Icely
María Soledad Miró
Graciela Castillo
Ana Isabel Azcurra
Cecilia Vigezzi
Lara Vargas
Claudio Abiega
Fernando Riera
Juan Pablo Caeiro
Claudia Elena Sotomayor

Introduction: Candida spp. have emerged as successful pathogens in both invasive and mucosal fungal infections in humans. Estimates suggest that Candida spp. are one of the most frequent nosocomial pathogens associated with bloodstream infections. Among non-invasive infections, vulvovaginal candidiasis (VVC) affects approximately 75% of women with at least one episode during their lifetime and it is estimated than 5-8% of this patients develop the recurrent form of mycosis (RVVC). The success of Candida as both commensal and human pathogen depends on differents virulence determinants which facilitates adaptation to a wide range of host niches. A major virulence attribute of Candida spp. is its ability to form biofilms, community of surface-attached cells embedded in a self-produced extracellular matrix. Recently, significant correlations between biofilm formation (BF) and cell surface hydrophobicity (CSH) have been reported. This property is involved in the process of cell aggregation and adhesion that facilitates biofilm development. Biofilms are intrinsically resistant to conventional antifungal therapeutics, the host immune system, and other environmental factors, making biofilm-associated infections a significant clinical challenge. **Objective:**The aim of this study was to evaluate virulence factors such as biofilm formation and cell surface hydrophobicity of Candida spp. clinical isolates from patients with invasive and non-invasive infections, and compare the virulence pattern exhibited by the fungus in different human reservoirs. **Materials and methods:**The present study was carried out on 27 clinical isolates of Candida spp. obtained from patients with bloodstream infection and 29 isolates from vaginal infections. Patients with VVC were divided in two groups: 6 acute VVC (AVVC) patients, who had only one symptomatic episode and 23 RVVC, who had four or more symptomatic episodes per year. Species identification of these isolates was performed by MALDI-TOF (Biomerieux) and molecular methods. Quantitative measurement of biofilm formation was assessed by XTT reduction assay performed in triplicate for all strains and the averages and standard deviations were calculated for all experiments. Strains was classified as Weak (Absorbance(A)<0.310)(WBF), Moderate (0.310<A<0.570)(MBF) and Strong (0.570<A)(SBF) biofilm producer. C. albicans collection strains ATCC 36801(WBF) and Sc5314 (SBF) were used as controls. Cell surface hydrophobicity (CSH) was assessed using the microbial adhesion assay to hydrocarbons and the results was expressed as a percentage of adherence. A regression model was used to evaluate the correlation between biofilm production and CSH. **Results:** Candida albicans was the most prevalent specie (48%) isolated from patients with candidemia, followed by C. parapsilosis(29%), C. krusei(7%), C. tropicalis(4%), C. guilliermondii(4%), C. dubliniensis(4%) and C. lusitaniae(4%). For comparative analysis C. albicans and C. parapsilosis were used. While C. albicans was classified as MBF, C. parapsilosis exhibit a SBF profile. Comparison of average absorbance of reduced XTT among C. albicans and C. parapsilosis did not show a statistically significant difference. However, C. parapsilosis strains showed a significantly higher percentage of CSH than C. albicans strains ($p<0.01$) with a low correlation between both virulence attributes. Moreover, all strains isolated from patients with acute and recurrent VVC were C. albicans. Biofilm formation was significantly higher in C. albicans strains isolated from patients with AVVC (SBF) than those isolated from patients with RVVC (MBF)($p<0.05$). Besides, we did not find a significant difference in CSH among acute and recurrent isolates. The comparative analysis of biofilm formation ability of C. albicans strains recovered from systemic and recurrent vaginal infections did not show significant differences, however, CSH was significantly higher in RVVC strains than in isolated from systemic infection ($p<0.001$). **Conclusion:** Biofilm production is considered as one of the most potent pathogenic traits attributed to treatment failures and recurrent infections. The resistance of biofilm is likely multifactorial and among many mechanisms, the yeast cell surface hydrophobicity is involved. The global analysis of the C. albicans strains recovered from systemic and RVV infections revealed that this specie exhibited similar biofilm formation ability but different CSH. These results might be usefull for a better understanding of the different role of Candida spp. virulence factors in site specific disease development.

Place of Work Laboratorio de Inmunidad Innata a Patógenos Fúngicos, CIBICI-CONICET
Facultad de Ciencias Químicas, Universidad Nacional de Córdoba

Country Argentina

Poster 074

Recurrent episodes of bacteremia due to multi-drug-resistant (MDR) Gram-negative organisms in febrile neutropenia

Presenter
Marcia Garnica

First Author
Marcia Garnica

Other Authors
Aline Sinhorelo
Laura Madeira
Angelo Maiolino
Marcio Nucci

Background: Multi-drug-resistant Gram-negative bacteremia (MDRGNB) is a serious complication in febrile neutropenia (FN), with high mortality rates. Little is known about the frequency of recurrence of MDRGNB In patients who survive the first episode and develop a new episode of FN. **Goals:** To determine the frequency of MDRGNB in the first and in consecutive episodes of FN and if a previous MDRGNB increases the risk for recurrence. **Methods:** Prospective cohort of all episodes of FN in hematologic patients from 2000 to 2013. MDRGNB was defined as bacteremia due to Gram-negative organisms producing extended spectrum of beta-lactamases (ESBL). We determined the frequency of MDRGNB in the first and in consecutive episodes of FN, and in a patient-basis analysis, we determined the frequency of MDRGNB recurrence, defined as bacteremia causing by the same Gram-negative bacteria (genus, species and antibiotic susceptibility profile) in a subsequent episode of FN. Chi-square, two-tailed Fisher exact test, Mann-Whitney tests were used in the analysis. **Results:** We analyzed 1433 episodes of FN in 915 patients: 643 with only one FN episode, and 272 (30%) with more than one FN episode. Multiple myeloma (30%) and acute myeloid leukemia/myelodysplasia (20%) were the most frequent underlying diseases. MDRGNB occurred in 89 patients (9.7%); 59 (66%) occurred in the first episode of FN, and 30 in subsequent episodes (14 in the second FN episode, 7 in the third, 4 in the fourth and 5 in the firth episode). The incidence of MDRGNB was 6.4% in the first FN episode, and 11% is consecutive FN episodes (p=0.38). From the 89 patients MDRGNB, 30 (46%) died during the episode. Only 20 patients (22.5%) experienced a subsequent episode of FN after the MDRGNB. Recurrence of MDRGNB was observed in 4 of these 20 patients (20%): 2 after 1 month, 1 after 2 months, and 1 after 10 months from the first episode. No patient died during the recurrent MDRGNB. **Conclusions:** Patients who survive an episode of MDRGNB during an episode of FN and develop another episode of FN have 20% of chance of having recurrent MDRGNB. Given the high recurrence rate of MDRGNB and the potentially negative impact of inappropriate empiric antibiotic therapy on the outcome, tailored empiric antibiotic regimen should be strongly considered in these patients.

Place of Work Universidade Federal do Rio de Janeiro
Complexo Hospitalar de Niteroi

Country Brazil

Poster 075

Neurocandidiasis: Experimental models to approach the innate immuneresponse of the glial cells components

Presenter
Claudia E Sotomayor·

First Author
Carlos Mauricio Figueredo

Other Authors
Cecilia Vigezzi
Gonzalo Mayol
Javier Maria Peralta-Ramos
María Soledad Miró
Emilse Rodríguez
Paula A Icely
Claudia E. Sotomayor

Introduction. Neurocandidiasis is a pathology with considerable incidence. This form of mycosis is classically associated to acute disseminated candidiasis, immunosuppressive states, neurosurgery and catheter use. Although considerably works have been done to identify the receptors, fungal moieties, and responses involved in anti-Candida immunity, little is known about these interactions in CNS. **Goals.** The aim of the present work was to develop different in vivo and in vitro model in order to explore the innate immune mechanisms involved during C.albicans-host interaction in CNS, focusing our studies in the role of Astrocytes and Microglia. **Material and method.** For explore the in vivo host-fungus interaction we developed two models on C57CL/6 mice. **MODEL I**: Mice were inoculated intravenously (i.v) with 2.5x106C. albicans (ATCC 36801) (Ca group) or PBS alone (N groups). On time 4h, 12h, 24h, 48h post infection (pi) animals were killed. The brain was removed to evaluate thr fungal burden(CFU), histological changes (PAS and HE stain), immunostain with Amb anti-GFAP and anti-CD11b (Astrocytes and Microglia marker), and in situ production of cytokines (ELISA). **MODEL II:** For intracerebral (i.c) inoculation the infusion cannula was stereotaxically lowered into the Caudate Putamen using coordinates according to the atlas of Franklin and Paxinos. Mice were injected with physiologic solution (N) or 5.103C. albicans (ATCC 36801) (Ca). After 48h post i.c infection, animals were killed and brain removed and processed for histological studies, IF assay and flow cytometric(FC) analysis with anti-GFAP and anti-CD11b. In vitro MODEL: For mixed glial cultures (Mx), cerebral cortices from 1- 2 day-old neonatal mice were dissected and digested, resuspended in growth-glial-culture medium and cultured at 37°C in humidified 5% CO2. For Highly-enriched Astroglial (As) cultures, on day 8, Mx culture monolayers were first treated with 8M cytosine-d-arabinofuranoside and later with 60mM Leucyne Methyl Ester to eliminate remanent Microglia, and allowed to recover prior to experimentation. The composition of Mx culture and purity of As- culture was strictly evaluated by FC using specific mAb. Both cultures where exposed to different stimuli: C.albicans(5:1 ratio); Zymozan (Zym), PGN (TLR2 agonist) and LPS (TLR4 agonist). After 24h, supernatants were collected to study cytokines (ELISA) and cells for TLR2 and TLR4 detection (FC and IFI). **Results:** C. albicans was able to quickly invade the brain tissue after i.v infection and CFU were recovered after 4h. The most obvious histopathological changes were observed after 24h pi with meningitis and microabscesses. In Ca group, an early local production of proinflammatory cytokines IL-1β, IL-6 and TNF-α ($p<0,001$), as well as anti-inflammatory IL-10 ($p<0,001$), was observed (12h pi). IF assay showed the presence of astrogliosis after 12h pi, with a high expression at 48h. In the Caudate Putamen of Ca i.c group, reactive Astrocytes also were detected, with large infiltrating of CD11d + cells. FC analysis of cells recovered from Caudado Putamen confirmed the activation of both gial populations. TNF-α also was detected in supernatants of Mx cultures stimulated with C. albicans ($p<0,01$) but not in as culture, beside the expression of innate receptor involved in the fungal recognition such as TLR2 and TLR4 (IFI and FC). Astrocytes produces significant levels of TNF-a and IL-6 against microbial component such as PGN and LPS ($p<0,01$), interestingly Zym (fungal wall component) showed a similar profile that observed against C.albicans. **Conclusions:**The in vivo model reveals a very early colonization by C.albicans of the brain which histopathological findings similar to those found in humans, characterized by the presence of microabscesses. Early changes in cytokines production assigned an important role to CNS resident glial cell population. Astrogliosis observed indicate the participation of Astrocytes response during infection. The in vitro model shows a responsiveness of glial cells against the fungus, mainly microglia. The differences in the production of proinflammatory cytokines found against other microbial stimuli indicate an intrinsic property of C. albicans. We successfully developed experimental in vivo and in vitro models for the study of early immune response in brain against C.albicans and the glial cells contribution.

Place of Work Laboratorio de Inmunidad Innata a Patógenos Fúngicos CIBICI-CONICET
Fac. de Ciencias Químicas, Univ. Nac. de Córdoba

Country Argentina

Poster 076

Usefulness of serum galactomannan screening in children with high risk of invasive Aspergillosis in a tertiary level hospital in Argentina

Presenter
Martin Brizuela

First Author
Sandra Gomez

Other Authors
Martín Brizuela
Ana Nina Varela Baino
Soledad González
M. Guadalupe Pérez
María José Izaguirre
Nadia Niño
Ana Rizzi
Patricia Santos
María Teresa Rosanova
Rosa Bologna

Introduction: invasive aspergillosis (IA) is a major cause of morbidity and mortality among immunocompromised host. Patients receiving chemotherapy with prolonged neutropenia and allogeneic hematopoietic stem cell transplantation recipients are at greatest risk. The European Organization for Research and Treatment of Invasive Fungal Infections and Cooperative Group Cancer and the National Institute of Allergy and Infectious Diseases Mycoses Study Group (EORTC / MSG) classify invasive fungal infections in proven, probable and possible according to clinical, microbiological, serological and images criteria. **Objectives:** to compare clinical and tomographic characteristics with galactomannans testing results in children with acute myeloid leukemia (AML) and bone marrow aplasia during episodes of febrile neutropenia. Material and Methods: retrospective, descriptive and observational cases serie. Inclusion criteria: children with AML and bone marrow aplasia older than 1 month and under 17 years old and febrile neutropenia with weekly serum GM determinations until resolution of neutropenia admitted from 01/01/2015 to 05/31/16 at "Hospital de Pediatría Prof. Dr. Juan P. Garrahan", Buenos Aires, Argentina. Patients with previous IA were excluded. Serum GM index was performed by ELISA twice a week during febrile neutropenia, it was considered positive a value greater than 0.7 or two >0.5. Febrile neutropenia: axillary temperature above 38.5 ° C or two above 38.1 ° C with an absolute neutrophil count below 500 / mm3. Continuous variables were expressed as median and interquartile range (IQR). Categorical variables in proportions and n. Stata 10 was used for analysis. **Results:** 45 patients were included. The median age was 71 months (IQR 24-115). Twenty-three patients were male (51%). The underlying disease was AML in 37 (82%) and bone marrow aplasia in 8 (18%). Twelve patients (26%) had any positive GM determination during the study. There were no statistical differences between patients with positive GM and negative GM in median age (52 vs 72 months), sex (n: 6, 50% vs n = 17, 51% male), underlying disease, use of piperacillin tazobactam during the previous week, median duration of fever (6 days) or neutropenia (10 days). The findings of TS in patients with positive GM were centrilobular or peripheral nodules with or without ground glass (83%, n = 10) and normal (17%, n = 2). Among patients with negative GM, 21 (64%) had nonspecific findings (centrilobular or peripheral nodules with or without frosted glass), 7 (24%) normal and 1 patient with a single nodule with subsequent documentation of Fusarium sp. In four patients TS was not performed. Empiric antifungal treatment between the fifth and seventh days of febrile neutropenia was initiated in all patients with positive GM vs 79% of patients with negative GM. Among patients with positive GM, 11 (92%) had criteria for probable IA and 1 (8%) proven IA. In the group of patients with negative GM, 15 (45%) had criteria for possible IA and 18 (55%) discarded. None died in relation to fungal infection. **Conclusions:** in this study weekly GM in a group of patients at high risk of IA was useful to improve the diagnosis of IA and reduced the use of empirical antifungal during the study period.

Place of Work Hospital de Pediatría Prof. Dr. Juan P. Garrahan

Country Argentina

Poster 077

Emmonsia parva and Histoplasma capsulatum: cross-species reactivity by PCR targeting the Hc100 gene

Presenter
Cecilia Haydeé Veciño Rodriguez

First Author
Adriana Gabriela López Daneri

Other Authors
Cecilia Haydee Veciño Rodríguez
Priscila Perazzo
Cristina Iovannitti
María Luján Cuestas
María Teresa Mujica

Introduction: The conventional diagnostic methods for histoplasmosis from clinical samples or the culture identification of Histoplasma capsulatum present difficulties since these procedures are time consuming and delay diagnosis. This situation shows for implementing molecular assays. Hc100, a distinctive target gene of H. capsulatum was sought in order to develop a diagnostic PCR assay having high specificity. This study verified the cross-species reactions between Emmonsia parva and H. capsulatum. **Materials and methods:** Four isolates of H. capsulatum var. capsulatum and one strain of E. parva were obtained from the culture collection of the Mycology Center, School of Medicine, University of Buenos Aires. Isolates of H. capsulatum were adapted to yeast-like fungi with successive subcultures using Brain Heart Infusion agar at 37 ºC. At 72 -96 h post-incubation, a total of 3 or 4 mm loopful from each fungus was put on 200 µl of sterile distilled water in microcentrifuge tubes. The suspension was vortexed vigorously for 1 min and tested as template for PCR. DNA of H. capsulatum was amplified from the yeast-like form during the PCR process in the thermocycler. Molecular identification of E. parva was also based on PCR amplification and nucleotide sequencing of the ITS regions and the Hc100 gene. Genomic DNA was then extracted and purified by using the QIAmp DNA Mini Kit. DNA quality and quantity were estimated by spectrophotometry. Ten ng/µl of DNA was used as template for PCR. The experiment was performed in triplicate. After the preparation of the corresponding templates, the Hc100 gene was amplified by PCR using primers Hc I (5´-GCG TTC CGA GCC TTC CAC CTC AAC-3´) and Hc II (5´-ATG TCC CAT CGG GCG CCG TGT AGT-3´). Furthermore, the ITS region was amplified by PCR using primers ITS1 and ITS4. Primers ITS1 (5'-TCC GTA GGT GAA CCT GCG G-3') and ITS4 (5'-TCC TCC GCT TAT TGA TAT G-3') were universal fungal primers which contained conserved regions among fungi and it were used by molecular identification of E. parva. The PCR reaction was performed and the amplicons were purified using a QIAquick PCR Purification Kit and then bidirectionally sequenced using an ABI Prism 3100/3100-Avant Genetic Analyser (Applied Biosystems, USA) with the same primers used for PCR amplification. The nucleotide sequences obtained were compared with those available in the GenBank database using the BLASTn database. Primer binding sites of HcI and HcII in E. crescens KKZ59014, E. parva KLJ06212 and Ajellomyces capsulatus KC990363 were calculated using the CLC Workbench software (CLC Bio-Qiagen, Aarhus, Denmark). **Results:** This study verified the cross-species reactivity between E. parva and H. capsulatum var. capsulatum in theHc100 gene. However, a faint PCR band was distinguished in E. parva. The sequence alignment of E. parva (278 bp corresponding to the partial sequence of the Hc100 gene) showed 89% sequence similarity (query coverage 93%) to Ajellomyces capsulatus KC990363 and 88% sequence identity (query coverage 93%) to Ajellomyces capsulatus KC990367. **Conclusions:** This study verified the cross-species reactions between Emmonsia parva and H. capsulatum. There is not sufficient divergence targeting the Hc 100 gene in E. parva to prevent primer binding and thus subsequent amplification using the primers designed for the molecular identification of H. capsulatum. The sequence alignment of E. parva studied here (278 bp corresponding to the Hc100 gene) did not identify this species.The nucleotide sequences of the ITS region of the E. parva (621 bp) under study showed 99 % similarity with an E. parva strain (accesion number AF038327). The phylogenetic relationships from the ITS regions of the Emmonsia isolate and Ajellomyces capsulatus confirmed that the Emmonsia species (E. crescens and E. parva) are distinct from one another and from the anamorphic state of Ajellomyces capsulatus. Therefore, it is necessary to investigate a larger number of strains of related species from the genus Emmonsia causing adiaspiromycosis or systemic human mycoses in immunocompromised patients for cross-species reactivity in the PCR assay targeting the Hc100 gene.

Place of Work Universidad de Buenos Aires. Facultad de Medicina Centro de Micología. Instituto of Microbiología y Parasitología Médica

Country Argentina

Poster 078

Evaluation of the disc agar diffusion to determine the susceptibility of Candida yeasts

Presenter
Mauricio Carbia

First Author
Mauricio Carbia

Other Authors
Patricia Perera
Annie Arrillaga
Lucia Dalcin
Vanesa Liporace
Elisa Cabeza
Zaida Arteta

Introduction: The Candida species are opportunistic fungal agents. Invasive candidiasis has been increasing as well as the prevalence of non-albicans species, although the latter remains the most frequently isolated. With the increased incidence of opportunistic fungal infections and the increasingly frequent use of antifungal therapies for treatment, there was a change in the distribution of yeast species as well as the emergence of resistant species. The reference methods based on microdilution plate to detect the in-vitro antifungal minimum inhibitory concentration are difficult to apply for clincal laboratories, CLSI has developed a methodology based on the disk agar diffusion (M44-A) which is easier to perform in clinical laboratories. In our country there are few reports on the susceptibility to antifungal agents. **Objective:** The aim of this work is to study the susceptibility of Candida species isolates from deep fungal infections and compare the disk diffusion method with automated methods currently available in Uruguay. **Material and methods:** Yeasts isolated from candidemia and other invasive candidiasis referred to Mycology Laboratory of the Faculty of Medicine of the UdelaR in Uruguay for identification and / or susceptibility study antifungals. Included yeast received between January and June 2016. The purity of the strain was confirmed and sent identifying the same is performed based on the characteristics micromorphologic, thermotolerance, and production of chlamydospores germ tubes as well as by classical chromogenic media and auxanograma.The disc diffusion susceptibility was performed following the protocol of the CLSI M44, as well as the identification and sensitivity VITEK 2. **Results:** 11 C. albicans, 6 C. tropicalis, 2 C. parapsilosis , 2 C. glabrata and C. krusei 2: 23 strains in total were distributed as follows were studied. They were isolated from the following sites: 10 blood cultures, 11 peritoneal fluids, 1 cervicomediastinitis fluid and 1 gastric fluid. The values of the halos of fluconazole disks were: C. albicans 40-20mm (mean 30 mm); C. tropicalis 28-22mm (mean 25,5mm); C. parapsilosis 30-26mm (mean 28mm); C. glabrata 17-16mm (mean 16.5mm) and C. krusei 8mm; We categorizing them as Sensitive, Sensitive and Resistant Dose Dependent CLSI M44 obtained 19 isolates sensitive; 2 dose dependent sensitivity (C. glabrata) and 2 resistances to fluconazole (C. krusei). The correlation with the results issued by the VITEK 2 automated system were very good showing discordance with the strains classified as dose dependent sensitivity by disc diffusion method, whereas VITEK 2 were categorized as sensitive. **Conclusions:** In our work we didn´t observed a real problem regarding resistance to fluconazole in Candida strains. Only detected two missmatch to the categorization of strains of C. glabrata, they were cataloged in sensitivity dose dependent by the disk diffusion method while in the VITEK 2 system, the same strains, were categorized as sensitive. We were able to show that the disc agar diffusion is a fast, economical and reliable for detecting strains resistant to fluconazole method. It is necessary to continue working on the issue for increasing the number of isolates and improve response time laboratory to clinicians.

Place of Work Depto. Parasitología y Micología; Facultad de Medicina; Universidad de la República Country Uruguay

Poster 079

Characterization of the clinical use of anidulafungin in children in a pediatric public hospital reference in Santiago, Chile

Presenter
Daniel Cortés Guerra

First Author
Daniel Cortés Guerra

Other Authors
M. Carolina Rivacoba Rojas
Giannina Izquierdo
Fernanda Cofré
Jorge Morales
Marlon Barraza
Juan Pablo Torres
María Elena Santolaya

Introduction: Echinocandins are lipopeptides with fungicidal action which selectively inhibit the synthesis of 1,3-β-D-glucan. It noted for its selective action against fungal wall, showing lower rate of adverse effects. Currently they correspond to the group of drugs of choice for the treatment of invasive fungal disease associated with Candida spp. The use of anidulafungin is not yet approved for use in pediatric patients unless the benefit outweighs the risk. **Objective:** Clinics describe children who received anidulafungin in a pediatric referral hospital, belonging to the public health network characteristics, in Santiago de Chile. **Methods:** Retrospective descriptive analysis of the use of anidulafungin in children obtained from medical records and clinical pharmacy computer record Luis Calvo Mackenna Hospital, comprising the years 2009-2013 and 2015 to June 2016. **Results:** Using anidulafungin in 89 events, corresponding to 81 patients described. The mean age was 5.9 years (1 month to 19 years). 46 males (57%) sex. 45% of patients were critical patient unit, predominating hemato-oncological pathology corresponding to 48 patients (59%) and liver transplantation 15 (18%). Of the 89 events, 19 (21%) were invasive fungal disease (IFD) tested, 4 of these probable, 34 possible (38%), 21 episodes of urinary tract infection by Candida spp and 2 episodes of candidiasis mucocutaneous . All the patients had risk factors for IFD, highlighting use of central venous catheter and use of broad-spectrum antimicrobial. neutropenia was observed in 33 of 48 (69%) hemato-oncological patients, and immunosuppression in 14 of the 15 patients with liver transplantation. fungal isolation in 47 of 89 events (52%), being isolated in blood 6 urine 23, 15 and secretion tissues were identified 5. C. albicans (25), C. parapsilosis (6), C. glabrata (4), C. tropicalis (4), the filamentous fungus Mucoromycotina family (3), C. lusitaniae (2), unidentified yeast (2), C. dubliniensis (1) and Aspergillus spp (1). Anidulafungin was used with loading dose in 43 events (48%) range of 3 to 4 mg / k, using as maintenance dose 2.2 mg / kg / day average. The part-time employment accounted for 9 days, range 1 to 42 were treated in fully 35 of 81 patients (43%), with no adverse reaction suspension. To active pharmacovigilance, 2 adverse reactions were detected, both corresponding to hypotension, plus, in one laryngospasm; with use of chlorpheniramine and hydrocortisone could continue using anidulafungin. Three deaths were recorded during treatment, 2 of them associated with filamentous fungus and a third associated with underlying disease. **Conclusions:** The main use of anidulafungin was in context of critical patient unit, predominantly patients with hemato-oncological disease and immunocompromised associated with solid organ transplantation. It also was used essentially to IFD episodes associated with Candida spp, consistent with current recommendations. Not described in this experience adverse reactions that would prevent further employment were observed. Currently anidulafungin it is not approved to be used in children under 18, however, evidence adequate safety profile in the experience of our care center for children.

Place of Work Universidad de Chile
Hospital Dr. Luis Calvo Mackenna

Country Chile

Poster 080

Invasive Mucormycosis in Paediatric Haematology Oncology Patients

Presenter
Soledad Estrella González

First Author
Sandra Gomez

Other Authors
Ana Nina Varela Baino
Soledad Estrella González
Carla Voto
Carolina Epelbaum
Fernanda Inés Conde
Patricia Santos
Susana Carnovale
Myriam Guitter
Raquel Staciuk
Claudia Sarkis

Introduction: Mucormycosis, an emerging fungal infection, has increasingly installed in several immunodeficient conditions with high mortality rates. Because of its poor prognosis and rapid evolution, early diagnosis is critical since prompt therapeutic management changes the onset of symptoms. Treatment regimens included antifungal therapy, reversal of underlying predisposing risk factors and surgical debridement. There are many unresolved issues concerning epidemiology, diagnosis and treatment of mucormycosis. Although important advances have been made, there is still a need to improve diagnosis tests in order to accurately identify patients with mucormycosis and initiate appropriate treatment as early as possible. Although amphotericin B and posaconazole showed in vitro activity against mucorales moulds, their clinical use is often restricted. Currently antifungal therapy with liposomal or lipid-complex amphotericin B with a minimum dose of 5mg/kg/day, control of the underlying risk factors and surgical debridement are key to managing this life-threatening condition Critical gaps in knowledge remain regarding management of these infections including combination therapy, use of adjunctive treatments and evaluation of outcome. Contemporary data on demographics, risk factors, management and outcome, particularly in children with haematological malignancy, are limited. **Objectives:** To describe demographics data, risk factors, laboratory, clinical and treatment results of mucormycosis in paediatric haematology oncology patients. Retrospective, descriptive and observational cases serie. **Material and methods:** Inclusion criteria: children haematological malignancies older than 1 month and under 17 years with invasive mucormycosis admitted to “Hospital de Pediatría Prof. Dr. Juan P. Garrahan”, Buenos Aires, Argentina, between 01/01/2008-30/06/2016. **Results:** Eight patients were included. Six patients were female (75%). The median age was 10 years (range 2.2 –15 years). The underlying disease was acute lymphatic leukaemia (ALL) in 4 (50 %), had received an allogeneic hematopoietic stem cell transplant 2 (25%), acute myeloid leukaemia (AML) in 1 (12.5%) and severe aplastic anaemia in 1 (12.5%). The predisposing factors found were: use of high-dose steroids to treat leukaemia or GVHD in the previous month 7 (87%), neutropenia (absolute neutrophil count <500 mm/mm3) in 5 (62 %), duration of neutropenia more than 15 days in 4 (50%), steroids-induced diabetes mellitus 3 (37%). Five patients had received antifungal prophylaxis prior to the diagnosis [voriconazol (n.4) and fluconazol (n.1)]; had received chemotherapy (n:5; 62%) and 6 patients had received broad spectrum antibacterial agents within 4 weeks prior to the diagnosis of the fungal infection. All patients had proven invasive mucormycosis infection according to The European Organization for Research and Treatment of Invasive Fungal Infections and Cooperative Group Cancer and the National Institute of Allergy and Infectious Diseases Mycoses Study Group (EORTC/MSG) criteria. Four patients had positive culture; isolates included Rhizopus (2) and Mucor (2) species. The isolates sites were paranasal sinuses (3) and infected soft tissue (1). Two patients presented fungal co-infection: Penicillium (1) and Aspergillus flavus (1). The most frequent clinical form was rhino-cerebral in 4 (50%) (rhino orbito cerebral 2, rhino-orbital 1, and rhino-cerebral 1. Other forms were disseminated disease (1) (pulmonary-kidney-sinus-cutaneous), gastrointestinal disease (1), hepatic (1) and cutaneous (1). All patients were empirically treated with antifungal agents; liposomal amphotericin 7.5 and 10 mg/kg/day (3), lipid formulations of amphotericin 5-10 mg/kg/day (3), amphotericin B deoxycholate (1) and posaconazole (1). Consolidation therapy with posaconazole (4); amphotericin B deoxycholate (1). Posaconazole tolerance was good, however a patient does not reach optimum levels and had to be discontinued. Seven patients underwent surgical debridement or resection of affected tissue; 5 (70%) patients needed more than one surgery. Overall mortality was 37% (3). Two of three patients died within 48 hours of diagnosis because of rapidly progressing infection. **Conclusions:** Predisposing factors identified in our series were use of corticosteroids, prolonged neutropenia, broad spectrum antibiotics and previous antifungal prophylaxis with voriconazole. Unlike other studies lymphoblastic leukaemia prevailed as underlying disease. The most frequent clinical form of presentation was rhino cerebral. Most patients received combination therapy with liposomal amphotericin and surgical intervention with favorable outcome. Overall mortality was similar to larger studies.

Place of Work Hospital de Pediatría Juan P. Garrahan Country Argentina

Poster 081

Paracoccidioidomycosis in HIV Positive Patients

Presenter
Fernando Messina

First Author
Fernando Messina

Other Authors
María de las Mercedes Romero
Andrés Benchetrit
Enzo Lavarra
Roxana Depardo
Emmanuel Marín
Laura Walker
Alicia Arechavala
Ricardo Negroni
Gabriela Santiso

Introduction: Paracoccidioidomycosis is a systemic mycosis endemic in tropical and subtropical wet areas in Latin America. It is produced by dimorphic fungi of Paracoccidioides genus, P. brasiliensis and P. lutzii. Different clinical presentations can be observed ranging from asymptomatic infection to severe disseminated processes with different organs compromise, this mainly depending on the host´s cellular immune response. **Objectives:** To analize the clinical, epidemiological and microbiological features of patients with both paracoccidioidomycosis and HIV and their evolution. **Materials and methods:** Descriptive and retrospective study. One hundred and three clinical records of patients with paracoccidioidomycosis diagnosed at the Mycology Unit from F. J. Muñiz Hospital in the last fifteen years (from January 2001 to December 2015), were analized. **Results:** Out of the 103 patients studied seven were HIV positive, six males and a female. The median of age was 39 years old (35-49 range). Two of the patients were born in Chaco province, one in Formosa, one in Misiones and one in Tucumán. Two patients came from bordering countries, one from Paraguay (Caazapa district) and the other from Bolivia (Santa Cruz de la Sierra department). The most frequent reasons for consultation were fever, weight loss and muco-cutaneous lessions. Paracoccidioidomycosis resulted to be the first aids manifestation in five patients. The CD4+ lymphocyte median was 73/µl (1-338/ µl range). The total number of lisis – centrifugation blood cultures were negative. Six patients presented a miliar pattern in their chest x-ray while it was normal in the rest of the cases. Five subjects showed positive paracoccidioidomycosis serology. Intradermoreaction was positive in just one case. Diagnosis was reached through skin or mucouse scarification in six patients and in one case it was done by observation of multibrotant yeasts in the bronchoalveolar lavage Amphotericin B was used in two cases and the rest were treated with Itraconazole. Six patients had a favourable evolution and one diseased **Discussion and conclusions:** Paracoccidioidomycosis prevalence has not raised in relationship with aids, as it happens with other mycoses, probably due to the secondary prophylaxis with trimethoprim/sulfamethoxazole that many patients receive. However, paracoccidioidomycosis must be taken into account as a possible first manifestation of aids, as it occurred in the majority of our patients. Clinical picture in aids patients differs from the traditional features of this mycosis, especially in the radiological pattern and in the presence of fever, at least in the patients studied.

Place of Work Mycology Unit, Infectious Diseases F. J. Muñiz Hospital, Buenos Aires

Country Argentina

Poster 082

Trends in Invasive Fusariosis in the Hematological Patient: A Single-Center 10-Year Experience

Presenter
Maria Daniela Bergamasco

First Author
Maria Daniela Bergamasco

Other Authors
Paola Cappellano
Carlos Alberto Pires Pereira
Ingvar Ludwig Souza
Diogo Ferreira
Thiago Oyama
Clara Negri
José Salvador Oliveira
Arnaldo Colombo

Background: Invasive fusariosis (IF) is a relatively uncommon infection in the north hemisphere countries but represents an important cause of invasive fungal disease (IFD) due to filamentous fungi in hematological patients, particularly in Latin America. In a recent Brazilian multicenter study, IF was the most frequent IFD among allogeneic hematopoietic stem cell transplantation (HSCT) recipients, with a 1-year incidence of 5.2%. Besides its importance in terms of occurrence, recent studies have called attention for alternative portals of entry for this infection in the immunnosupressed host, beyond the airway route, that are the skin and central venous catheter. In parallel, treatment practices have evolved with the introduction of new antifungal drugs like Voriconazole, leading to a reduction in the IF related mortality according to some authors, although it is still a potentially lethal condition. Therefore, clinical and epidemiological studies on IF are important to identify trends in terms of species distribution and natural history that may help to drive optimal measures in prevention and management. **Goals:** To describe the clinical presentation, microbiologic and radiologic findings, treatment aspects and evolution of a cohort of hematological patients with invasive fusariosis in a Brazilian teaching tertiary care hospital, during a 10-year period of observation (July 2006 to June 2016). **Materials and Methods:** During this retrospective and observational cohort study we enrolled all consecutive adult hematological patients admitted to Hospital São Paulo, an 800-bed, university hospital located in São Paulo – Brazil, who developed invasive probable and proven invasive fusariosis, according to the modified EORTC Criteria (2008). **Results:** During the study period, 16 hematological patients were diagnosed with proven (13, 81%) or probable (3, 19%) invasive fusariosis in our centre and were eligible for analysis. The median age was 51 years-old (24 to 69), and 9 (56%) were male patients. The main underlying disease was acute leukemia (myeloid or lymphoid) in 9 patients (56%). A total of 8 patients were submitted to hematopoietic stem cell transplantation (HSCT) before the IF occurred, being 7 of them allogeneic. Thirteen patients (81%) were neutropenic at the diagnosis of IF, for a median time of 17 days (range 6 to 75) and 6 were in use of systemic glucocorticoids. The majority of patients presented with skin lesions alone or in combination with other sites (10, 62.5%) and fungemia was detected in 8 (56%). Chest tomography was performed in 14 patients but pulmonary infiltrate was present in 9, represented by focal lesions in 7 identified cases including: consolidation with or without cavity and the halo sign. In 14 cases, Fusarium solani was the causative agent, followed by one case each of F. incarnatum and Fusarium spp. Serum galactomanan antigen test was performed in 14 out of the 16 patients, and was detetected in 5 (35%) cases, including one exhibiting serum and bronco-alveolar lavage samples positive for galactomanan antigen. The majority of patients (12, 75%) were treated with a regimen based on Voriconazole alone or in combination with an Amphotericin B formulation. The 6-week and 12-week crude mortality rates were 56% and 75%. In terms of trends, no significant differences were observed in the mortality rates between patients submitted to HSCT versus other onco-hematological patients (p=0.614 and p=0.248, after 6 and 12-weeks, respectively). **Conclusions:** In this single-centre experience of IF, cutaneous involvement was very frequent, like in previous Brazilian studies, in addition to disseminated disease, that was the main form of clinical presentation. Mortality rate remains very high after 12-week follow-up.

Place of Work Universidade Federal de São Paulo
Escola Paulista de Medicina

Country Brazil

Poster 083

Voriconazol Monitoring in Hematologic Disease in Argentina

Presenter
Flavio Gabriel Lipari

First Author
Flavio Gabriel Lipari

Other Authors
Juan Pablo Caeiro
Cecilia Boisseau
José Amigone
Leonela Tantucci
Debora Assum

Introduction: The use of voriconazole is common in the treatment of fungal infections in immunocompromised patients. There are drug interactions and clinical situations that can modify the desired concentrations. Having available the monitoring of drug levels provides safety in use. **Objective:** To demonstrate that monitoring levels of antifungals is useful to maximize efficacy and minimize toxicity of voriconazole. **Materials and Methods:** Retrospective and descriptive study from December 2014 to July 2016. 14 medical records were analyzed clinical data of patients who voriconazole levels was measured in plasma were extracted. Voriconazole dose of 400 mg were used every 12 hours loading 1 day, then 200 mg every 12 hours' maintenance in adults. In children start 200 mg every 12 hours 1 day, then 100 mg every 12 hours of maintenance, all orally. Voricocinemia normal value is 1.5 - 5.5 mcg / mL. Sex, age, underlying disease, type of fungal infection treated, galactomannans, neutropenia, voricocinemia and adverse drug reactions were studied. **Results:** 14 patients analyzed, 8 men and 6 women, ranging in age from 1-66 years (mean: 29). As pathology 7 patients had acute myeloid leukemia, 3 acute lymphocytic leukemia, 1 multiple myeloma, 1 non-Hodgkin lymphoma, 1 chronic lymphocytic leukemia and 1 with Wiskott Aldrich syndrome. 5 received hematopoietic cell transplantation. 12 patients received voriconazole possible pulmonary aspergillosis and 2 chronic disseminated candidiasis. 2 patients (14%) had positive blood galactomannans. 8 patients (79%) were neutropenic to measure the value. A total of 21 voriconazole plasma measurements were performed, 10 were out of range (48%), 6 values were subtherapeutic and 4 high values. dose was modified in 4 patients and in 1 case medication was discontinued for this patient presenting visual disturbances. **Conclusion:** a high percentage of values out of range voriconazole is observed. Drug interactions possibly be the cause of increased values of the drug. Alteration in the gastrointestinal tract, such as those patients with hematological diseases, the cause of the low plasma. Have available the drug levels possible to adjust the dose, avoiding adverse reactions and toxicity.

Place of Work Hospital Privado Universitario de Córdoba
Fundación para el Progreso de la Medicina

Country Argentina

Poster 084

Antifungal stewardship: economic impact of antifungal therapy in a Pediatric Hospital in Chile

Presenter
Natalia Barnafi Retamal·

First Author
Marlon Barraza Olivares

Other Authors
Natalia Barnafi Retamal
María Eliana Maldonado Roco
Juan Pablo Torres
Paulina Coria
Jorge Morales Vallespín

Introduction: In the last two decades, the diagnosis of fungal infections has increased, because there are more patients with known risk factors, such as immunosuppressed hosts and patients admitted to intensive care units. In this scenario antifungals become essential in the therapeutic arsenal. Non-specific clinical manifestations and suboptimal diagnostic tools characterize fungal infections. Besides, the delay in initiation of treatment affects patient's prognosis. These arguments have promoted the start of an empiric antifungal therapy, even in the absence of an accurate diagnosis, making difficult the implementation of antifungal stewardship, increasing the costs associated with patient care and the drug toxicity risk, also leading to the resistance selection. **Objective:** Evaluate and categorize restricted antifungal therapy use and determine the economic impact associated. **Materials and methods:** This is a retrospective and descriptive study between January 2015 and April 2016 in a pediatric hospital in Santiago de Chile. It was made an economic analysis of patients with high-cost antifungal treatments (voriconazole, liposomal amphotericin, anidulafungin, caspofungin and posaconazole) recorded in the hospital computer system. The medical records were reviewed and each episode of restricted antifungals use was classified according to the consensus 2002, reviewed the 2008, of the European Organization for Research and Treatment of Cancer/ Invasive Fungal Infections Cooperative Group and the National Institute of Allergy and Infectious Diseases Mycoses Study Group (EORTC / MSG): possible invasive fungal disease (IFD), probable, proven and discarded. There were included the category prophylaxis and non-invasive fungal disease. The treatment days of each episode was calculated. Treatment was considered not justified when it was a possible IFD and discarded IFD, and justified in non-invasive fungal infections, probable IFD and proven IFD. Prophylaxis was not included in the treatment analysis. The economic impact of each of these groups was calculated. **Results:** 78 patients with antifungal treatment were selected. The total cost associated with these treatments was U$ 682.994. 151 episodes of fungal infection were identified; 8 were classified as non-invasive fungal infections (5.3%), 44 possible IFD (29.1%), 22 probable IFD (14.6%), 35 proven IFD (23.2%), 23 prophylaxis (15,2%), 15 discarded (9.9%) and 4 patients (2.7%) was not possible to obtain information from the medical record. The antifungal treatment was justified in 65 episodes (43.1%) and not justified in 59 episodes (39%). The antifungal average time of use in unjustified treatment was 8.6 days (SD 9.4 days), with a minimum of 1 day and a maximum of 57 days. The antifungal average time of use in justified treatments was 24.2 days (SD 26.9 days), with a minimum of 1 day and a maximum of 345 days, it should be considered that there were episodes in which it was made a step down to unrestricted treatment as fluconazole, which was not analyzed in this study. The costs associated with justified antifungal therapies was U$ 435.078, while not justified generated a cost of U$ 95.082. Moreover, the cost of prophylaxis was U$ 144.682. **Conclusion:** The initiation of antifungal therapy is often undisputed, but prolonged and unjustified duration involves patient's exposure to unnecessary antifungal drugs. It is related to unnecessary use of resources and increased costs associated with patient care, as well as major adverse effects. The decrease in the duration of empiric treatments can be managed with faster diagnostic tests and procedures, and it need to be discussed with the medical staffs that are in charge of the patients, so we could achieve a more efficient and rational use of resources and better patient care.

Place of Work Hospital Dr. Luis Calvo Mackenna
Universidad de Chile

Country Chile

Poster 085

Fungal Infections in Burn Care

Presenter
María Fernanda Landaburu

First Author
María Gabriela Badino Varela

Other Authors
Maria Fernanda Landaburu
José Carballido
Gabriela Sinitman
Jaime Kovensky
María Teresa Mujica

Introduction: Fungal infections are a major cause of morbidity and mortality in burned patients, since these lesions are ideal for the development of opportunistic infections. **Objective:** To describe the epidemiology, demography, clinics and treatment of candidiasis in burned patients. **Material and Methods:** The medical records of 36 burned patients with documented fungal infection (hospitalized between January 2011 and December 2014 in the area of hospitalization of Intensive Care Unit (ICU) of the Municipal Burn Hospital of the City of Buenos Aires) were analyzed. A total of 52 Candida isolates was identified by conventional and molecular microbiological methods. **Results:** Most identified patients (63,9%; n = 23) were females. Mean age of patients was 46,1 years (range, 18-87 years). Average time of hospitalization was 46,7 days (range 9-218 days). 38,9% were diagnosed with an APACHE II score; ranging between 31-40, and 8,3% of the patients were diagnosed with an APACHE II score (ranging between 41-46). A candida score of 3 was presented in 77,7% of patients. Causes of burn included: 41,7% fuel (alcohol, gasoline, explosives), 25% direct fire, 13,9% stove, 16,7% water and 2,8% electricity. Central venous catheterization was used in 88,9% of patients, and tracheal intubation in 72,2%. The 91,7% of patients received surgical treatment and 97,2% autograft. Inotropic treatment was required in 72,2%. Antifungal treatment was indicated in 91,7% of patients. The overall mortality was 38,8%, being higher in the following groups: older than 65 years (p= 0,018), patients under inotropic treatment (p< 0,001), inhalation injuries (p= 0,04) in fasciotomy patients (p= 0,04), and with underlying diseases (p= 0,002). Bacterial infections were present in 100% of patients who developed a yeast infection. The incidence of fungal infection accounted for 39,3 per 1000 admissions and the mean time between the admission and the onset of candidiasis was 21,4 days (range 1-3 weeks). Therapy was initiated with fluconazole in 58,8% of patients and liposomal amphotericin B was provided to the remaining patients. C. albicans was isolated in 53,8% of the analyzed material (biopsy of the lesion, urine culture, blood culture, tracheal aspirate, catheter tip). C. tropicalis was identified in 23,1% of samples, C. parapsilosis sensu stricto in 13,5%, C. krusei in 5,8%, and C. glabrata and C. krusei in 1,9%; respectively. In blood cultures, C. albicans was the most common species. It was followed by C. parapsilosis. In urine culture non C. albicans species were higher than C. albicans. Patients with candidemia, had a higher mortality than those with negative blood cultures; differences were not statistically significant (p= 0,091). PCR amplification of the HWP1 gene coincided with the microbiological identification of C. albicans and C. dubliniensis candidemia. For PCR identification of C. parapsilosis and C. glabrata sensu stricto and species within the complex we required: a (for the complex of C. glabrata the PCR reaction for the RLP31 gene that encodes a 60S ribosomal protein and b) for the species C. parapsilosis specific primers for each of the species of this complex derived from sequences within the region ITS1 and ITS2 rDNA. **Conclusions:** In burned patients, coexisting risk factors increase the colonization and infection by Candida spp. Identifying the factors associated with increased risk of infection are important in the management of burned patients. Molecular epidemiology allows the prompt identification of Candida species and provides information on their sensitivity to antifungal agents.

Place of Work Hospital de Quemados de la Ciudad de Buenos Aires
Centro de Micología de la Facultad de medicina de la UBA

Country Argentina

Poster 086

MALDI-TOF Identification on Haematopoietic Stem Cell Transplantation in Brazil: a Two-year Experience

Presenter
Lis Moreno

First Author
Lis Moreno

Other Authors
Ana Verena Mendes
Goreth Barberino
Marcio Oliveira
Julio Sampaio
Tiago Freitas
Marco Aurelio Salvino
Carolina Arraes

Infectious complications after hematopoietic stem cell transplantation (HSCT) remain a clinical challenge. Particularly during the early phase after HSCT, mortality rates for infections are high. Bacterial infections are among the major complications of HSCT, and bloodstream infections (BSI) are the most frequent infection. In this era of Multidrug-resistant (MDR) bacteria, the knowledge of local epidemiology is mandatory for deciding the most appropriate management protocols, thus the prescription of empiric therapy of febrile neutropenia should be individualized. Shortening the turn-around time of positive blood culture identification and susceptibility results are essential to optimize antimicrobial treatment in these patients. The rapid availability of results should allow early administration of target treatment hereby potentially improving clinical outcome of HSCT patients. Matrix- assisted laser desorption ionization time-of- flight mass spectrometry (MALDI-TOF MS) has proven over years to be a rapid and accurate universal method for the identification of microorganisms. We aimed to describe the two-year experience, from April 2014 through April 2016, with 103 HSCT recipients with MALDI-TOF MS use in bacterial and fungus identification from blood culture in these neutropenic patients at São Rafael Hospital in Brazil.

Place of Work Hospital São Rafael

Country Brazil

Poster 087

Epidemiology and Clinical Characteristics of Transplant Recipients with Candidemia

Presenter
Eloy Ordaya

First Author
Eloy Ordaya

Other Authors
Woo Jeong Choi
Odaliz Abreu-Lanfranco
George Alangaden

Background: Candidemia is a major infectious complication in immunocompromised transplant recipients which is associated to high morbidity and mortality. **Objective:** To evaluate the epidemiology and clinical characteristics of transplant patients with candidemia (TC) at our institution. **Methods:** A retrospective, observational study of patients with proven diagnosis of candidemia from January 2013 to July 2015, at Henry Ford Hospital, a tertiary care center in Detroit MI. Descriptive analysis of TC was performed and compared to non-transplant patients with candidemia (NTC). **Results:** A total of 127 patients with candidemia were enrolled. Median age was 58 (17 – 99) years and 57% were male. Candida spp. isolated were: C. albicans – 55 (43.3%), C. glabrata – 42 (33.1%), C. parapsilosis – 18 (14.2%), C. tropicalis – 6 (4.7%), C. dubliniensis – 3 (2.4%) and another Candida species – 3 (2.4%). Nineteen (15%) of 127 patients with candidemia underwent solid-organ transplantation prior to the diagnosis of candidemia, including: liver -11, kidney-4, liver-kidney-1, heart-1, intestinal-1 and multivisceral-1 case. None of the hematopoietic stem-cell transplant recipients who routinely received azole prophylaxis developed proven candidemia during this period of time. Median age of TC was 61 (17 – 72) years and 68% were males. Candidemia was detected at ≤72 hours of hospitalization in 53%; all were on hemodialysis or were hospitalized in the last 3 months. Non-albicans Candida spp. accounted for 63% of infections. Median Charlson comorbidities index (CCI) was 5 (3 – 6). Frequent concomitant comorbidities were: diabetes 53%, liver dysfunction 53% and hemodialysis 26%. Associated risk factors for candidemia included: indwelling central line (79%), multiple transfusions (79%), indwelling urinary catheter (58%), broad spectrum antibiotic use in the last 10 days (53%), abdominal surgery in the last 30 days (37%), TPN use (32%) and multifocal candida colonization (21%) with a median Candida score (CS) of 2 (0 – 2). Median APACHE II score was 19 (10 – 31) and ocular candidiasis was detected in 11% of the cases. Six (32%) patients initiated empiric antifungal treatment before the diagnosis of candidemia. The all-cause mortality rate was 26%. Significant variables on bivariate analysis comparing TC and NTC were: liver disease (53 vs 24%, p=0.02); higher median CCI (5 vs 3, p=0.002); recent abdominal surgery (37% vs 11%, p=0.009); receipt of multiple transfusions (79% vs 44%, p=0.006). No significant differences were found in CS (2 vs 2, p=0.4), APACHE II score (19 vs 21, p=0.4), eye involvement (11% vs 9% p=0.5) and mortality (27% vs 47%, p=0.2). **Conclusion:** In our transplant population, liver transplant recipients with underlying comorbidities are at particularly high risk for candidemia, mostly due to non-albicans Candida spp. Besides, in these immunocompromised hosts, candidemia should be considered as a potential cause of sepsis at time of hospitalization, since half of the candidemias were detected at ≤72 hours of admission, even when CS is < 3.

Place of Work Henry Ford Hospital

Country USA

Poster 088

Risk factors for BK virus infection in renal transplant patients in Colombia

Presenter
Nancy Yomayusa

First Author
María José López

Other Authors
Camilo Montero
Rodolfo Torres
Milciades Ibáñez
Jorge Cortés
Nancy Yomayusa

Background: BKV induced nephropathy is a complicaton of patients with renal transplantation. Immnuosuppression seems to be the most important risk factor. **Methods:** A retrospective cohort of patients with renal transplantation in two centers in Colombia was used to evaluate the frequency and risk factors of BKV-induced nephropathy. Diagnosis was established by the presence of Decoy cells in urine, pahtology changes or viral load. Bivariate and multivariate logistic regression analysis was used to establish risk factors. **Results:** 208 patients with kidney transplantation between 2008 and 2013 were followed for up to one year for the presence of infectious complications. A diagnosis of BKV-induced nephropathy was established for 20 patients (9.6%) with a median time of 153 days after transplantation (range 76 to 307 days). In a multivariate analysis, independent risk factors for BKV-induced infection were the number of infections (OR 2.2; 1.48-3.3), subclinical rejection (OR 4.2; 1.2-14.2). Confounder variables included were the use of metil prednisolone (OR 0.6; 0.09-3.7) and CMV reactivation (OR 0.84; 0.22-3.2). Model was affected by other immunosuppressors. **Conclusions:** Net immunosuppresive state reflected by the number of infections and the need of treatment for subclinical rejection were predictors of BKV-induced nephropathy. The role of CMV reactivation is not clear at the present.

Place of Work Grupo de Trasplante Renal-Clinica Colsanitas
Grupo de Investigacion Traslacional-Fundación Universitaria Sanitas. Universidad Nacional

Country Colombia

Poster 089

Pulmonary Infiltrates and Invasive Fungal Infections in Pediatric Patients with Cancer

Presenter
María Andrea Mónaco

First Author
María Andrea Mónaco

Other Authors
Patricia Dondoglio
Cecilia Echave
Mariana Camiansqui
Carolina Saenz
Patricia Glasman
Marina Pasinovich
Micaela Delgado
Ximena Juarez
Marta Lavergne
Aldo Cancellara

Introduction: Pulmonary infiltrates (PI) are one of the leading causes of morbidity and mortality in pediatric patients with cancer undergoing intensive chemotherapy regimens. Invasive fungal infections (IFI) are one of the most severe causes, whose early diagnosis and treatment are essential to provide favorable outcomes. **Objectives:** To determine etiology and clinical course of PI in hospitalized children with cancer. To assess possible risk factors for developing proven or probable IFI. **Materials and methods:** Descriptive,retrospective study. Clinical data was taken from medical records of pediatric patients with cancer admitted from January 2014 to December 2015. Patients with PI on chest radiographs (CR) or computed tomography (CCT) performed at admission or during hospitalization were included. IFI diagnosis was established using EORTC/MSG criteria, classified as proven, probable or possible. Demographic, clinical and epidemiological variables were analyzed, comparing proven or probable IFI vs possible IFI or other etiology. **Results:** Fifty-eight patients were included, with a total of 92 pathological images. Median age was 7.6 years old (range 1-18 years old). Eighty-four percent of the PI (n 77) were presented in patients with hematological cancer, being 60% (n: 46) of oncological high risk. Sixty-nine percent (n 64) of the IP were seen in patients with febrile neutropenia (FN), 35.9% (n 23) of them evolved with prolonged FN (median 4 days, range 1-19 days). Eighty-one percent (n: 75) of the PI observed in CR concomitantly presented respiratory symptoms, either at admission (n: 57) or later in the course of illness (n 18), developing it from day 1-26° of entrance, with an average of 7.14 days. Forty-seven percent of cases presented with hypoxemia. PI were only a finding in images in 18.5% of cases (n: 17). Twenty-six CCT were performed, 18 of them were pathological, with focal pattern in 16 cases (69.2%), that included centrolobulillar nodules and cavitated nodules with frosted glass pattern. Microbiological diagnosis was confirmed in 45.6% (n: 42), being 38.1 cvg% (n: 16) bacterial, 19% (n: 8) viral, 9.5% (n 4) fungal unique infections. P jiroveci was isolated in 4.8% (n 2). Twenty-eight percent of coinfections (n: 13) were found, being viral-bacterial and viral-fungal coinfections the most frequent ones (n 9). Fungal infections were yielded in 10 cases (23.8%), 4 of them were filamentous fungi and 6 yeasts. Filamentous fungi were isolated in 2 lung biopsies. Eight probable Aspergillosis were diagnosed by CCT and positive galactomannans in serum and BAL. Probable IFI were defined in 17.4% of the cases, with an average of 7.6 days of FN, compared to 3.2 days for PI with other diagnoses (p 0.0004). Prolonged FN and relapse of fever intraneutropenia were associated with the diagnosis of proven or probable IFI (p 0.001). Fifteen percent (n: 14) of PI were admitted to ICU, 71.4% (n: 10) of them required mechanical ventilation, with an average of 6 days (range 1-27 days). Overall mortality at 30 days was 7.6% (n 7), being 57% (n 4) of them related to infectious disease. Secondary prophylaxis was indicated to 19.5% (n 18) of the patients. **Conclusions:** Microbiological diagnosis was confirmed in 45.6% of PI, being bacterial and viral infections the most common causes. IFI was associated with prolonged FN and relapse of fever intraneutropenia.

Place of Work Hospital General de Niños Pedro de Elizalde

Country Argentina

Poster 090

Epidemiology and outcome of sepsis in onco-hematological patients with confirmed bacteremia

Presenter
Diogo Boldim Ferreira

First Author
Diogo Boldim Ferreira

Other Authors
Luciane Luz e Silva
Janaina Midori Goto
Ivelise Giarolla
Marcelo Mostardeiro
Paula Tuma

Introduction: Sepsis and septic shock are frequent complications in patients with hematologic malignancies receiving treatment with chemotherapy as well as related to high rate of morbidity and mortality. Difficulties in the diagnosis of sepsis in this particular population, deterioration of host defense mechanisms, and emergence of microorganisms with broad-spectrum antibiotic resistance are common factors associated to a poor prognostic. **Objective:** To evaluate the epidemiological and clinical characteristics and outcome of sepsis and septic shock with bacteremia confirmed in patients with hematological malignancies or receiving HSCT. **Materials and methods:** We conducted a retrospective cohort. All hospitalized adult patients with hematological malignancies or receiving HSCT with an episode of sepsis or septic shock with positive blood culture were included, between August, 2013 and May, 2016 at Hospital de Transplantes Euryclides de Jesus Zerbini, a tertiary care hospital. Gender, age, underlying diagnosis, sequential organ failure assessment (SOFA) score, clinical signs and organ dysfunction at the time of sepsis, distribution and drug resistance of pathogens, and 14-day and 30-day mortality rate were recorded. We adopted sepsis criteria by Surviving Sepsis Campaign, 2012. Neutropenia was considered as serum neutrophils<500/mm3 and severe neutropenia as neutrophils<100/mm3. Appropriate therapy was defined when the use of at least an antimicrobial drug with in vitro activity against the pathogen was implemented within one hour after diagnosis. Univariate and Cox regression analyses were performed to evaluate risk factors leading to death in the study population. **Results:** During the study period, a total of 53 out of 113 patients with sepsis episode presented positive blood culture (46.9%). The study population's average age was 57.3±19.76 years (15-84y) and males represented 62.3%. Acute leukemia was the most frequent underlying disease (39.5%), followed by multiple myeloma (24.5%), non-Hodgkin lymphoma (15.1%), aplastic anemia (7.5%), and myelodysplastic syndrome (5.7%). Seven subjects (13.2%) received HSCT (6 were autologous and 1 was related allogeneic). Of these 53 episodes, septic shocks counted as 58.5% and severe sepsis as 41.5%. The SOFA score average was 8±3.69 (2-15). The main clinical signs at the time of diagnosis were tachycardia (90.6%), hypotension (83.0%), fever (75.5%), tachypnea and desaturation (73.6%), and acute change of consciousness level (26.4%). Other observed organ dysfunctions were renal (35.8%), pulmonary with pO2/FiO2<300 (43.4%), hepatic (32.1%), serum lactate>1.5UNL (28.3%), and INR>1,5xUNL (18.9%). Twenty-eight patients (52.8%) were neutropenic and 25 were severe neutropenic (47.2%). Primary bloodstream infection was the most recurrent type (67.9%), followed by pneumonia (15.1%), abdominal (5.7%), and urinary tract (5.7%). Also, the main identified microorganisms were: K. pneumoniae (35.7%), P. aeruginosa (13.2%), E. coli (13.2%), E. faecium (9.4%), A. baumannii (5.7%), and coagulase-negative Staphylococcus (5.7%). The 14-day and 30-day mortality rate was 50.9% and 54.7%, respectively. We founded out that high SOFA score (9 vs. 5.8, p= 0,010), septic shock (76.9%, p= 0.008, OR= 4.84, CI95% 1.47-15.97), severe neutropenia (61.5%, p= 0.040, CI95% 1.04-9.85), and carbapenem resistance (61.5%, p < 0.001, OR= 12.80, CI95% 3.04-53.86) were risk factors related to 14-day mortality. On the other hand, high SOFA score (10.1 vs. 5.3, p= 0.002), septic shock (79.3%, p= 0.001, OR= 7.66, CI95% 2.23-26.38) and carbapenem resistance (58.6%, p < 0.001, OR= 15.58, CI95% 3.07-79.16) were risk factors to 30-day mortality. In Cox regression analyses, high SOFA score (OR= 1.15, CI95% 1.20-1.3), septic shock (OR= 2.93, CI95% 1.10-7.94), and infection by resistant-carbapenem Gram-negative (OR= 4.14, CI95% 1.79-9.52) were independent risk factors for mortality. Although we found no significant relation between inadequate antimicrobial therapy and mortality, patients with bacteremia by resistant-carbapenem Gram-negative most frequently received inadequate antimicrobial therapy within the first hour (52.4%, p= 0,042, OR= 3.30, CI95% 1.02-10.65). **Conclusions:** We observed a high 14-day and 30-day mortality rate among patients with severe sepsis and septic shock with confirmed bacteremia. In our cohort, risk factors related to mortality were high SOFA score, septic shock, and bacteremia by resistant-carbapenem Gram-negative.

Place of Work Hospital de Transplantes Euryclides de Jesus Zerbini Country Brazil

Poster 091

Is weight a marker of voriconazole-associated liver toxicity in leukemic patients treated for Invasive Fungal Infection at a large tertiary care center?

Presenter
Oveimar De la Cruz

First Author
Oveimar De la Cruz

Other Authors
Sarah Turley
Mandy Gatesman

Background/introduction: Invasive Fungal Infections (IFI) render a high burden of morbidity and mortality in leukemic patients (pts). Liver toxicity is a major limitation for therapy with triazole antifungals in this population. Optimal voriconazole dosing remains challenging in these settings. **Goals:** Assess the influence of weight and voriconazole dose related to liver toxicity in leukemic pts. **Materials and methods:** Single center, retrospective review of leukemic pts exposed to voriconazole therapy for possible, probable or proven IFI (defined elsewhere) from January 2011 to December 2015. Pts were analyzed in relation to first measured voriconazole level available. Dosing strategy was up to treatment team discretion. **Results:** 51 pts identified. median age 55, male 55%. Acute Lymphocytic Leukemia (ALL) 8%, Acute Myeloid Leukemia (AML) 84%, mixed phenotype 8%. History of myelodysplastic syndrome 27%. History of bone marrow transplantation 35%. Proven IFI in 12%, probable in 29% and possible in 59% of pts. Median actual weight (AW) was 86 kg (range 41.9 - 119kg), average days on voriconazole prior to drug level was 14.9. 31 pts (60%) had at least 1 abnormal liver function test (LFT), defined as total bilirubin (bili) >1.3 mg/dL, Alk phos (AP) >120 u/L, or AST or ALT >100 u/L, 1 week before or after drug monitoring. Mean 1st voriconazole level was 6.3 mcg/ml (3.8 in normal LFT group, p =0.02). Mean bili 1.9 (0.475 in normal LFT group, p=0.01), mean AP 169 (85.6 in normal LFT group, p=0.0001). Mean AST 144 (compared to 28, p=0.1) and ALT 133 (compared to 31, p= 0.1). Mean Voriconazole dose (mg/kg) was 3.7 (compared to 3.7, p=NS). Mean AW among pts with abnormal bili and AP was 89kg (compared to 78.2, p=0.05). **Conclusions:** Liver toxicity, especially with abnormal bili and AP levels, was common among leukemic pts exposed to voriconazole for IFI. Higher trough levels were detected in this particular group, despite no significant difference in administered voriconazole dose (in mg/kg). However, actual body weight was higher in patients with abnormal LFTs and higher drug levels, suggesting unclear pharmacodynamic challenges. Careful voriconazole dosing is suggested in pts with elevated weight to avoid toxicity.

Place of Work Virginia Commonwealth University. Department of Medicine, Division of Infectious Diseases. Department of Pharmacy. Richmond, VA. USA

Country USA

Poster 092

Epidemiology of Invasive Fungal Disease caused by Non-aspergillus Molds in a University Hospital in Santiago - Chile, during the period 2005-2015

Presenter
Pablo Valenzuela García

First Author
Pablo Valenzuela García

Other Authors
Marcela Puente Valenzuela
Margarita Enberg Gaete
Paulette Legarraga Raddatz
David Oddó Benavides
Ricardo Rabagliati Borie

Background: In Chile we have few epidemiological data of invasive fungal disease (IFD) by molds. Data of a surveillance study from our center conducted between 2004 and 2008, which included 41 episodes of IFD in hemato-oncology patients, the most common agent was Aspergillus spp., which coincides with data from another Chilean center between 2004 and 2009, with 51 IFD episodes, 15 of these by molds, 87% corresponding to Aspergillus spp. infections. However, the epidemiological knowlegde about non-Aspergillus molds infections in our country is even scarcer. **Objective:** To describe the epidemiology of invasive non-Aspergillus infections in patients hospitalized in our center.**Material and Methods:** Retrospective study in adult patients hospitalized at the Hospital Clínico (HC) of the UC-CHRISTUS network, diagnosed with IFD by non-Aspergillus fungi between 2005 and 2015. The HC is a university tertiary level hospital, located in Santiago downtown, has 468 beds, is a reference center to manage patients with different pathologies including hematological cancer, hematopoietic stem cell (allogeneic and autologous) and solid organ (kidney, kidney-pancreas, liver, heart and intestine) transplantation. Medical records of identified cases were reviewed recording: age, sex, underlying disease, type of mold, diagnostic category according to criteria EORTG/MSG, clinical focus, therapeutic management and mortality at 30 days. For incidence and frequency calculations, we use the hospital discharges number and the total number of IFD (candidemia and molds invasive infection number) between 2005-2015. The study was approved by the Institutional Ethics Committee, project number 16-043. **Results:** During the study period, 30 episodes caused by non-Aspergillus molds were identified, corresponding to an incidence of 1.13 per 10,000 discharges (30/264,523), 12% of IFD (30/248) and 22.2% of molds IFD (30/135) observed between 2005-2015. The etiologies of IFD were 47% mucormycosis agents (11 cases Rhizopus and 3 cases Mucor), 30% Fusarium, 10% Alternaria and 3.3% Penicillium, Paecilomyces, Scedosporium and Chrysonilia. The mean ± SD age of cases was 48 ± 15 years and 63% were male. According the EORTC/MSG criteria the episodes were classified as proven in 67% and probable in 33%. The underlying conditions were: 37% acute leukemias (8 acute myeloid and 3 acute lymphocytic); 20% other conditions (1 critically ill patient, 1 rheumatologic, 2 chronic kidney disease and 2 ketoacidosis); 13% solid organ transplants (2 heart, 1 liver and 1 intestine); 10% blood marrow aplasia; 10% chronic leukemias (1 myeloid and 2 chronic lymphocytic) and 10% other hematologic conditions: (1 non-Hodgkin lymphoma, 1 other leukemia and 1 unspecified cause leukopenia).The most common clinical focus was 60% rhinosinusal, 17% pulmonary and 17% cutaneous. Regarding antifungal treatment, liposomal amphotericin B was prescribed in 73%, voriconazole 23% and posaconazole 3%; surgical debridment was done in 93% of those affected by agents of mucormycosis. The 30-day mortality was 57%; 33% for Fusarium, 67% for Alternaria, 71% for mucormycosis agents and 100% for Penicillium, Paecilomyces and Scedosporium. **Conclusions:** In our hospital, the overall incidence of invasive non-Aspergillus molds disease in the period 2005-2015 was 1.13 per 10,000 discharges, being the most frequent the mucormycosis agents, followed by Fusarium, with an overall 30-day mortality of 57%. While 80% of patients had hemato-oncological pathologies, it should be noted that 20% had less associated baseline conditions with invasive mold disease, as critically ill patient, rheumatologic diseases or chronic kidney disease on hemodialysis. More epidemiological information from other hospitals is necessary to complete the profile of non-Aspergillus infections in our country.

Place of Work School of Medicine. Pontificia Universidad Católica de Chile Country Chile

Poster 093

Trichosporon fungemia in a Brazilian tertiary hospital

Presenter
Sara Letícia Kretzer

First Author
Sara Letícia Kretzer

Other Authors
Chandra Cardoso
Iris Mattos Santos Pirath
Jairo Ivo Dos Santos

Introduction: Trichosporon species are widely distributed in the environment, and can be part of colonizing microbiota of the human skin and eventually in the gastrointestinal and respiratory tracts. Systemic infections are quite uncommon but, in the last years, these yeasts emerged as opportunistic pathogens in leukemic patients, and in those nonneoplastic patients submited to treatment with broad-spectrum antibiotics and multiple invasive medical procedures. The majority of fungemia episodes are caused by Trichosporon asahii and the clinical experience suggests a poor prognosis for patients despite antifungal therapy. **Objectives:** To evaluate the emergence of fungemia by Trichosporon species with resistance to antifungal agents in a Brazilian tertiary hospital. **Methods:** The hospital microbiology laboratory database was retrospectivelly searched for cultures positive for Trichosporon from January 2012 to December 2015. The identification of 34 isolates of Trichosporon species recovered from 29 different patients were determined by the Vitek 2, API 20C Aux and supplementary techniques as urease production and morphologic studies on CHROMagar Candida and Cornmeal Tween 80 agar. The susceptibility tests to fluconazole, amphotericin B, itraconazole and voriconazole of the isolates available in the mycology laboratory collection were determined by the E-test method. Because antifungal susceptibility breakpoints of Trichosporon species are lacking, CLSI criteria were adopted (M27-S4 protocol) and Candida albicans ATCC 90028 was used as the reference strain. **Results:** A total of 34 Trichosporon isolates were identified from different sites (blood, urine, catheters, peritoneal fluid, biopsy punch and nails), most of the cases occurred in male patients (58.6 %), over 50 years (72.4 %) and those admitted to Intensive Care Unit (47 %). Among the fungemia episodes, female patients represented 60 % and the mean age was 34 years. Of them, the majority had acute leukemia (60 %) and all had been exposed to systemic antifungal therapy and broad spectrum antimicrobial agents. T. asahii was the only species causing fungemia episodes, however, non-asahii species represented 11,8 % of all isolates, which included T. mucoides, T. inkin and Trichosporon sp. The isolates from bloodstream infection presented a good susceptibility profile to amphotericin B, itraconazole and voriconazole, however fluconazol MIC range was 1,5 to 12,0 µg/ml. Despite antifungal therapy, the mortality associated to fungemia was 80%. **Conclusion:** Species definition and determination of antifungal susceptibility profile in the episodes of Trichosporon fungemia can lead to appropriate antifungal therapy and may improve the prognosis of neoplastic and critical patients.

Place of Work University Hospital, Federal University of Santa Catarina
Department of Clinical Analyses, Federal University of Santa Catarina

Country Brazil

Poster 094

Active Surveillance of Candidemia in Pediatric Patients in 9 Chilean Hospitals

Presenter
Marcela Rabello

First Author
Marcela Rabello

Other Authors
Gianina Izquierdo
Marcela Zubieta
Carmen Aviles
Carmen Sandoval
Mirta Acuña
Fernanda Cofre
Cecilia Vizcaya
Karen Ducasse
Ana María Álvarez
María Elena Santolaya

On behalf of the National Network of Candidemia.

Background: Candidemia is a major cause of morbidity and mortality in hospitalizad patients. Active surveillance is necessary for improving the preventive strategies, management and outcomes of patients with candidemia. **Objective:** To describe the epidemiologic, clinical and microbiologic features of candidemia in pediatric patients in 9 hospitals in Chile. **Methods:** A prospective, multicenter study, active surveillance of candidemia in newborns (NB) (0-28 days) and children (29 days-18 years), from 9 hospitals between June 2013 and June 2016. **Results:** 87 cases of candidemia were reported with a median incidence of 0.61 / 1,000 hospital admissions. Seventeen of 87 (19.5%) were NB and 70/87 (80.5%) were children. The median age at candidemia presentation was 13 days in NB (P25-75 7-18 days) and 30 months (p 25-75 8-80 m) in children. The most frequent concomitant conditions seen in NB and children were respiratory disease and kidney failure, 40% of the children were more likely to have malignancy (hematologic). The main risk factors were (>90%) previous antibiotics therapy and central venous catheter use. NB also associated with the use mechanical ventilation and parenteral nutrition. The main species isolated were C albicans (66%) and C. parapsilosis (25%) in neonates and C. albicans (33%), C. lusitaniae (14%) C. tropicalis (11%) and C. parapsilosis (11%) in children. 30 days-survival was 65% in NB (11/17) and 77% in children (53/66). Eighty-one of 87 patients received antifungal therapy (AF) and 3 NB (18%. 3/17) who did not receive AF died. The most commonly used AF therapies in NB were amphotericin (deoxycholate and lipid) in 7/10 (70%). An echinocandin were used in 60% (40/66) of children. **Conclusions:** Our study shows that C. albicans was the most common species in neonates, however, non albicans Candida predominated in children (2 of 3 cases). The major comorbidities were respiratory and renal diseases and the main risk factor were previous antibiotics therapy and the presence of a venous catheter. Amphotericin remains the most AF used in neonates and echinocandins was in pediatric patients, consistent with the recommendations of the current literature. This epidemiologic, clinic and microbiologic information should be use to improve preventive, diagnostic and therapeutic strategies in pediatric patients with candidemia in our country.

Place of Work Red Chilena de Candidemia

Country Chile

Poster 095

Cytomegalovirus Immune Response follow up using Quantiferon-cmv® in Children during the First Year after Hematopoietic Stem Cell or Solid Organ Transplantation: Preliminary Results.

Presenter
Cecilia Vizcaya Altamirano

First Author
Cecilia Vizcaya Altamirano

Other Authors
Nicole Le Corre Pérez
Constanza Martínez Valdebenito
Francisco Barriga Cifuentes
Gonzalo Urcelay Montecinos
Marcela Contreras Robles
Marcela Vidal Contreras
Paulina Dellepiane Merello
Ana María Contreras Toledo
Marcela Ferrés Garrido

Introduction: Human Cytomegalovirus (HCMV) infection significantly contributes to morbidity and mortality in hematopoietic stem cell (HSCT) and in solid organ transplant (SOT) patients. CMV naïve SOT recipients from a CMV positive donor are at the highest risk of CMV-related complication. Meanwhile, CMV positive recipients in HSCT with naive donor present a higher risk of reactivation. The specific immune response against HCMV, particularly during the first month after transplantation, is impaired and preemptive or prophylactic anti HCMV strategies are needed. However, these strategies need close monitoring of viral load and are associated with viral resistance and drug toxicity. At the same time, immunosuppressive drugs induce the loss of immune control over HCMV and frequently are associated with impaired CD8 T cell function. QuantiFERON-CMV® is able to detect HCMV specific T lymphocytes in blood by measuring IFNγ production with an ELISA test. QuantiFERON-CMV® has been used in immunocompromised adults to address immune specific response against HCMV, but there is limited information about its use in children after transplantation. **Objective:** To establish QuantiFERON®-CMV levels in children with HCMV infection during the first year after HSCT or SOT. **Methods:** We included children after 6 weeks of HSCT and 3 month of SOT, with HCMV sero-positive status in donor and/or recipient. QuantiFERON-CMV® was performed every month for HSCT and every two months for SOT, during the first year post transplant. The results were expressed as optic density (OD) obtained with HCMV antigens stimulation minus OD obtained from negative control (nil), as recommended by manufacturer: HCMV minus nil ≥0.2 UI/ml was interpreted as a reactive test. When were available, we registered the following laboratory parameters: HCMV viral load, lymphocyte count and tacrolimus or cyclosporine blood levels. **Results:** Three patients receiving an HSCT were included (2 umbilical cord blood and 1 related donor). All receptors had a seropositive HCMV status and the related donor was negative. Two patients with cardiac transplant were included, both donors had positive HCMV IgG and one receptor was negative. Among HSCT recipients, one patient with a seronegative HCMV related donor had QuantiFERON®-CMV levels below 0.2 UI/ml during the first 8 months of follow up, despite of which no HCMV reactivation was observed. The second patient presented a reactive QuantiFERON®-CMV after 3 months of transplantation. However, the test showed levels below 0.2 UI/ml from the 4th until 6th month after transplantation without HCMV reactivation. The third patient presented an indeterminate result at 6 weeks after transplantation, but with undetectable HCMV viral load. Among SOT recipients, one patient presented a reactive QuantiFERON®-CMV since the 3rd month after transplantation and with no HCMV reactivation. The patient with seronegative IgG presented QuantiFERON®-CMV levels below 0.2 UI/ml from the 3rd month to the 6th months after transplantation, with concomitant positive HCMV viral loads, requiring preemptive therapy with gancyclovir and foscarnet. At 7th month, QuantiFERON®-CMV levels was 0.26 UI/ml and HCMV viral load was undetectable with no therapy. Even if there was a tendency of higher QuantiFERON®-CMV levels in patients with higher lymphocyte counts and/or lower immunosuppressive drugs levels, no significant correlation was observed between these parameters. **Conclusions:** No HCMV reactivation was observed in this pediatric population with reactive QuantiFERON®-CMV (levels above 0.2 UI/ml as recommended by the provider). Finding HCMV specific and functional lymphocytes using QuantiFERON®-CMV seems to depend on donor and recipient CMV sero-status and immunosuppressive drugs levels. More patients need to be recruited and followed in order to confirm this hypothesis.

Place of Work Hospital Clínico Pontificia Universidad Católica de Chile

Country Chile

Poster 096

Epidemiology of infections in recipients of hematopoietic stem cell transplantation at a teaching hospital in Santiago-Chile

Presenter
Tania López Quizhpi

First Author
Tania López Quizhpi

Other Authors
Daniel Ernst
Pablo Ramírez
Ricardo Rabagliati

Introduction: Infections are the most common and significant cause of mortality and morbidity after hematopoietic stem cell transplantation (HSCT). There is not information about epidemiology of infectious diseases in adult HSCT recipients in Chile. The aim of this study was to describe the epidemiology of infectious diseases, spectrum of pathogens and outcomes among HSCT receptors. **Patients and methods:** Retrospective study, including patients ≥ 18 years old, who received HSCT during the period 2010-2015 at the Hospital Clínico (HC) of the UC-CHRISTUS network. The HC is a university tertiary level hospital, located in Santiago downtown, has 468 beds, is a reference center to manage patients with different pathologies including allogeneic and autologous HSCT. Medical records of identified cases were reviewed recording: demographical characteristics, underlying disease, type of transplant, clinical and microbiologically documented infections, therapeutic management and outcome. The clinical and microbiological features were analyzed in the context of three phases after HSCT: pre-engraftment phase (from the "day 0" of the transplant to engraftment), mid-recovery phase (from engraftment until "day 100") and late-recovery phase (>100 days after transplantation). This study was approved by the ethics committee at the HC of UC-CHRISTUS network of Pontificia Universidad Católica of Chile (# 15-083). **Results:** One-hundred fifty-five HSCT were done in HC during 2010-2015 period, mean age 44 years (range, 18-69); 94 (60,3%) were males; 82 (52.9%) allogeneic, 64 (41.2%) autologous, and 9 (5.8%) umbilical cords blood HSCT. Multiple myeloma was the most common underlying disease (n= 40, 25.6 %), followed by acute lymphocytic leukemia (20.5%) and acute myeloid leukemia (19.2%). According local protocol, patients received fluconazole 200 mg daily from day –1, acyclovir 400 mg tid for herpes/varicella zoster virus from day –3 and Pneumocystis jirovecii and Toxoplasma prophylaxis, consisted of cotrimoxazole (800/160 mg three times a week), from the time of engraftment. The mean time for granulocyte recovery was 14 days. Microbiological or clinically documented infection was observed in 127 (81,9%) patients, viral infection in 73 (47,1%), bacterial infection in 43 (27,7%) and invasive fungal disease in 11 (7,1%) patients. Respect 73 patients who had viral infections, cytomegalovirus was the most frequent virus identified with 37 viremia episodes. Regarding bacterial infections, there were 38 bacteremia episodes, 36 occurred in the pre-engraftment and 2 in the post engraftment period. Gram-positive cocci were more frequent than gram negative rods. The most frequent etiology of bacteremia was Staphylococcus epidermidis. On the other hand, respect the 11 cases of invasive fungal infection, 72.7% were secondary to filamentous fungi infection. Of the 155 patients, 44/155 (28.4%) died, and 20/155 (12,9%) was infection-related. **Conclusions:** This is the first report about epidemiology of infections in HSCT adult population in our country. A high rate, over 80%, of infections was observed, with major frequency of viral infection, followed by bacteria infection and less frequently fungal infection. CMV, S epidermidis and molds are the more frequent pathogens in our center. A total of 12,9% mortality was infection related. It´s necessary to obtain more epidemiological studies from other Chilean and Latin American centers to better understand HSCT infections epidemiology in our country and region.

Place of Work Pontificia Universidad Católica de Chile Country Chile

Poster 097

Isolated microorganisms from blood cultures of children with cancer and high-risk febrile neutropenia from five hospitals in Santiago, Chile (2012-2015)

Presenter
M. Eliana Maldonado Roco

First Author
M. Eliana Maldonado Roco

Other Authors
Mirta Acuña
Ana M. Álvarez
Carmen L Avilés
Carmen Salgado
Juan Tordecilla
Mónica Varas
Marcela Venegas
Milena Villarroel
Marcela Zubieta
M. Elena Santolaya

Background: Microorganisms isolated from blood cultures of patients with febrile neutropenia (FN), have presented changes in prevalence and patterns of antimicrobial resistance (AM) over time, with geographical and institutional differences, being necessary to keep updated this knowledge, to select an adequate empirical therapy and, through this, contribute to a better prognosis. **Objective:** Identify isolated microorganisms from blood cultures and their resistance profile in children with cancer and high-risk febrile neutropenia of 5 hospitals in Santiago de Chile (2012-2015). **Method:** Prospective multicenter, epidemiological surveillance, as part of FONDECYT project 1120800. The analysis includes positive blood cultures in episodes of NF high-risk patients under 18 years old, treated at five hospitals in Santiago de Chile, belonging to the national children's program of antineoplastic drugs (PINDA) from 1 January 2012 to 31 December 2015. **Results:** During the study period 692 episodes of NF high risk were analyzed. 206 microorganisms were isolated in 185 of these 692 episodes (26.7%). Main agents isolated per group were Gram-negative bacilli (46.6%) and gram-positive coccus (45.1%). Escherichia coli (22.8%), Staphylococcus coagulasa negative (18.4%), Klebsiella spp (16.5%), Streptococcus viridans group (13.1%) and Staphylococcus aureus (8.7%) accounted for 79, 5% of the microorganisms identified. 6.3% of blood cultures were fungemias, being Candida spp and Sarocladium killiense the most frequent. In the study of antimicrobial susceptibility for gram-negative bacilli, stands out Escherichia coli and Klebsiella spp with 4.5% and 68.9% resistance to third-generation cephalosporins, 11.3% and 40.7% to quinolones, and 2.3% and 25.9% to amikacin, respectively. Among coccus gram positive, Staphylococcus aureus and Staphylococcus coagulase negative show 84.8% and 22.2% of oxacillin resistance, respectively, and Streptococcus viridans group 39.1% of penicillin resistance, with additional 30.4% intermediate resistance. **Discussion:** This study updates the etiology and resistance profile of microorganisms isolated from blood cultures of children with cancer and high-risk NF in five hospitals in Santiago de Chile. Stands out the balance in the percentage of identification of Gram-positive coccus and gram-negative bacilli, different from the predominance of gram-positive coccus described in previous studies from the same centers (1994-1998 and 2004-2009). Polymicrobial identification in 20 cases (10%) is concordant with 10-15% of international reports, event not previously objectified in these institutions. Individually, Escherichia coli (22.8%), Staphylococcus coagulasa negative (18.4%) and Klebsiella spp (16.5%) are the three most frequently isolated. Klebsiella spp has increased its representation, with high resistance profiles (68% extended-spectrum beta-lactamase and 25.9% resistance to amikacin). Our results are part of an active surveillance which is updated every 5 years as an essential tool for the proper management of children with cancer and NF. **FONDECYT 1120800**

Place of Work Hospital Dr. Exequiel González Cortés
Hospital Dr. Roberto del Río
Hospital San Juan de Dios
Hospital San Borja Arriarán
Hospital Dr. Luis Calvo Mackenna
Infectology Commitee, National Child Program of Antineoplasic Drugs (PINDA)

Country Chile

Poster 098

Time to positivity of blood culture: relationship between *Candida spp.* and fungal inoculum

Presenter
Leonardo Siri

First Author
Leonardo Siri

Other Authors
Paulette Legarraga
Patricia García
Cecilia Zumaran
Tamara González
Tomás Sánchez
Ricardo Rabagliati

Introduction: The time to positivity of automated blood culture (TTP) as a predictor of species involved and their relationship with clinical outcome is still a matter of debate. The aim of this study is to determine if the TTP is related to factors such as Candida spp involved and fungal inoculum. In a recent study from our center that included 120 candidemia (Candida albicans 55%, C. glabrata 18,3%, C. tropicalis 11,7%, C. parapsilosis 9,2%), we observed that the TTP was 56,1 ± 35,1 hrs, being the shorter period for C. albicans and the longer for C. glabrata (34,5 ± 18,3 hrs vs. 87,2 ± 46,3 hrs; p<0.001). If the TTP is influenced by fungal inoculum is not well defined, from the clinical point of view the most important fact is to understand is if higher inoculum changes the difference in TTP. **Methods:** We made simulated quantitative blood culture samples with 8 frozen strains of 4 Candida spp. (2 albicans, 2 glabrata, 2 tropicalis and 2 parapsilosis) selected from our recent study, in aerobic blood culture bottles BacT/Alert ® Biomerieux with 4 different amount of inoculum, 0.5 x 10, 1x102, 1x104,1x106 UFC/ml, all in duplicate. We registered TTP for each Candida spp. concentration and analyze differences between species and initial fungal inoculum. **Results:** An inverse relationship was observed between the progressive fungal inoculum and the TTP, with shorter incubation time for C. parapsilosis (17,9 hrs), then C. albicans (22.8 hrs), C. tropicalis (30.2 hrs) and the longest for C. glabrata (33.2 hrs) with the minimus inoculum. On the contrary, with maximum inoculum there were shorter TTP and less differences among Candida spp.: C. parapsilosis (7,3 hrs), C. albicans (7.9 hrs), C. tropicalis (10.45 hrs) and C. glabrata (6.5 hrs) as observed in the figure. **Conclusions:** The TTP of blood culture is inversally proportional to the initial fungal inoculum. That's mean that there are some clinical scenarios with higher fungi inoculum where TDP couldn't predict the Candida spp. involved in the candidemia episode.

Place of Work School of Medicine. Pontificia Universidad Católica de Chile

Country Chile

Poster 099

In vitro susceptibility testing of essential oils against carbapenem-resistant Enterobacteriaceae (CRE) and selected standard strains

Presenter
Jan Patterson

First Author
Jan Patterson

Other Authors
Jose Cadena Zuluaga
Nathan Wiederhold
Kristy A Traugott
Cindy Kelly
Steve Dallas

Background: Antibiotic resistance is an increasing problem in immunosuppressed patients. Alternative anti-infectives must be explored. The U.S. National Action Plan for Combating Antibiotic-Resistant Bacteria calls for developing non-traditional therapeutics, including natural compounds such as essential oils (Goal 4.4). **Goals:** The in vitro activity of essential oils and the oil blend, Thieves® (cinnamon, clove, lemon, eucalyptus, rosemary) were studied against CRE from our institution. Selected ATCC isolates were also tested to explore the potential spectrum of essential oils. **Methods:** CRE were defined as isolates resistant to imipenem, meropenem AND resistance to ceftriaxone, cefotaxime, or ceftazidime using CLSI methods. 23 CRE were identified from 2014-15) at university-affiliated hospitals. Isolates were grown overnight on TSA; 0.5 McFarland suspensions in sterile water were swabbed over Mueller-Hinton agar using the Kirby- Bauer method. 20 ul of full-strength oils were pipetted onto blank paper disks in a sterile dish. Separate dishes were used for each oil to avoid mixing oils. Disks were placed aseptically onto the plates immediately after inoculating disks. Plates were incubated overnight at 37C in ambient air. **Results:** The zone diameter ranges for Gram-positive organisms ATCC strains S. pneumoniae, S. pyogenes, S. aureus and MRSA were as follows: Lavender 11-26, Lemongrass 36 - >50, Oregano 29-52, Thieves® 16-36, Thyme 34 - >50. Zone diameter ranges for Gram-negative CRE clinical isolates including C. freundii, E. aerogenes, E. coli, K. pneumoniae, S. marcescens and ATCC strains E. coli were as follows: Oregano 12-34, Thieves® 11-16.5, Thyme 11-38. The zone diameter range for P. aeruginosa ATCC strain was as follows: Oregano – 7, Rosemary – 0, Thieves® - 11, Thyme – 8. **Conclusions:** Essential oils oregano and thyme had the largest zones of inhibition against CRE organisms, followed by lemongrass and Thieves®. Oregano and Thieves® had the largest zones of inhibition for P. aeruginosa. Lemongrass had very large zones of inhibition against Gram-positive ATCC strains, followed by oregano, thyme, Thieves®, and lavender. The in vitro and in vivo activity of essential oils against clinical pathogens deserves further study.

Place of Work University of Texas HSC San Antonio. University Health System, So. Texas Veterans HCS. San Antonio TX

Country USA

Poster 100

CMV Antibody in Later Period After Kidney Transplantation

Presenter
Mikhail Zubkin

First Author
Mikhail Zubkin

Other Authors
Oleg Kotenko
Valeriy Chervinko
Irina Kim
Lyudmila Artyuhina
Nadiya Frolova
Flora Baranova

Background and goals: CMV infection can determinate the prognosis of kidney transplantation recipients and duration of graft function. Currently viremia is considered as the main factor of possible evolution of direct and indirect effects of the virus. However, widely used in clinical practice methods of PCR diagnostic are imperfect and possible do not allow to correctly estimate the infectious process activity. The aim was to find CMV infections signs by determination the levels of IgG and IgM CMV antibody in later period after kidney transplantation. **Materials and methods:** Blood sera of 48 kidney transplantation recipients (age 49±13 yrs.) were included in research. It has passed more than 3 years after transplantation (102 ±56 mo). Also 28 blood sera samples from healthy donors were taken in research. IgG and IgM CMV antibody quantitative level was done by ELISA method and viral load was done by RT-PCR (VECTOR-BEST, Russia). **Results:** There were not a signs of viremia and clinical symptoms of CMV infections in 46 of 48 recipients. High levels of CMV IgG antibody (> 50 PE/ml) were found in blood in 15 of 46 patients (32.6%), and these values were more than 5 times higher than in donor blood sera ($p<0.01$). Avidity of antibodies of recipients did not differ from donors. In researching group of recipients and donors the level of IgM CMV antibody was based on OD450. In both groups, the optical density levels did not reach values that allow considering the results as positive. However, the level of OD450 was higher in recipients sera (0.19±0.08) than in donors sera (0.09±0.02); $p<0.05$. Moreover, there was a small group of 14 recipients, who were done needle biopsy because of deterioration of graft functions. High levels of IgG CMV antibody was detected in 61.3% of these patients. **Conclusions:** the high levels of CMV IgG antibody and higher levels of IgM CMV antibody in the group of recipients than in donors may be caused by possible transient activity of CMV infection or low level of viral load, usually not identified in common research methods. Further researches should use more frequent studies and highly sensitive methods of estimation of viral load.

Place of Work G. N. Gabrichevsky Moscow Research Institute of Epidemiology and Microbiology

Country Russia

Poster 101

Standardization and validation of a real time PCR for the diagnosis of histoplasmosis using three molecular targets in an animal model

Presenter
Luisa F. López

First Author
Luisa F. López

Other Authors
César O. Muñoz
Diego H. Cáceres
Ángela M. Tobón
Vladimir N. Loparev
Oliver Clay
Tom Chiller
Anastasia Litvintseva
Ángel González
Beatriz L. Gómez

Introduction: Histoplasmosis is considered one of the most important endemic and systemic mycoses worldwide. Currently, a few molecular techniques have been developed for its diagnosis. **Goals:** The aim of this study was to evaluate three real time protocols for different protein-coding genes (100-kDa, M and H antigens). **Materials and methods:** Formalin-fixed and paraffin-embedded (FFPE) lung tissues, from BALB/c mice inoculated i.n. with 2.5x106 Histoplasma capsulatum yeast or PBS control, were obtained at 1,2,3,4,8,12 and 16 weeks post-infection. Additionally, a collection of DNA from cultures of H. capsulatum (34 strains) and other medically relevant pathogens (35 strains of related fungi and one of Mycobacterium tuberculosis), were used. **Results:** All the lung tissue samples from H. capsulatum-infected animals, in the first week post-infection, were positive for all protocols tested. Samples at the remaining periods were negative for all protocols, except for two samples that were positive for the 100-kDa protein and H antigen in the second week post-infection, and one sample also positive for the H antigen in the eighth week post-infection. All samples from uninfected mice (controls) were negative for all protocols evaluated. Sensitivity and specificity for the three targets were 100% when DNAs of the different cultures were used. **Conclusion:** Herein, we successfully standardized and validated three qPCR assays for detecting H. capsulatum DNA in FFEP tissues, suggesting that these molecular assays are promising tests for diagnosing this mycosis in clinical samples.

Place of Work

Medical and Experimental Mycology Group, Corporación para Investigaciones Biológicas (CIB), Medellín, Colombia
Mycotic Diseases Branch, Centers for Disease Control and Prevention, Atlanta, GA, USA
Oak Ridge Institute for Science and Education (ORISE), Oak Ridge, USA
Biotechnology Core Facility Branch, Centers for Disease Control and Prevention, Atlanta, GA, USA
School of Medicine and Health Sciences, Universidad del Rosario, Bogotá, Colombia
Cell and Molecular Biology Group, Corporación para Investigaciones Biológicas (CIB), Medellín, Colombia
Basic and Applied Microbiology Research Group (MICROBA), School of Microbiology, Univ. de Antioquia, Medellín, Colombia

Country Colombia & USA

Poster 102

Zika and Chikungunya viruses in oncohematological patients and Human Stem Cell Transplant recipients.

Presenter
Bárbara Pereira

First Author
Clarisse Machado

Other Authors
Bárbara Pereira
Alvina Felix
Maria Carolina Oliveira
Luis Darrigo
Mair Souza
Eduardo Paton
Fabia Neves
Vergilio Colturato
Belinda Simões

Background. Aedes mosquitoes are well adapted in domestic environments and widely spread in tropical regions. Since 2015, Brazil is experiencing a triple epidemic of Dengue, Chikungunya (CHKV) and Zika (ZIKV) viruses; the latter two probably following the path of dengue, which is endemic in most parts of the country since the eighties. In addition, Brazil is the second country in absolute number of kidney and liver transplants, and performed more than 2,000 hematopoietic stem cell transplant procedures (HSCT) in 2015. In the presence of the triple epidemic in Brazil, we proposed a prospective and collaborative study to assess the prevalence, morbidity and mortality of Dengue, Chikungunya and Zika infections in oncohematological patients and HSCT recipients. The present study reports the first cases of Zika and Chikungunya infections diagnosed in these populations. **Methods.** Hematopoietic stem cell transplant recipients as well as oncohematological patients from Brazilian HSCT centers were invited to participate in this prospective and collaborative study which started in February 2016. A case-definition approach was used to prompt diagnostic investigation. Blood and urine samples were taken from patients fulfilling the case-definition criteria and were sent to the Virology Laboratory of the Institute of Tropical Medicine to be processed by real time an in-house PCR. RNA extraction was done with the iPrep™ PureLink® Total RNA Kit (Invitrogen, Carlsbad, CA, USA). Clinical data were recorded in follow-up forms at inclusion, and 7 and 30 days thereafter. The medical history and physical examination from each suspected case were transcribed to an online database. **Results.** From February to May 2016, 26 patients fulfilling the case definition criteria were included in the study. Nineteen patients had received hematopoietic stem cell transplants and seven were being treated for hematological disorders. During this period, nine cases (34.6%) of arbovirus infection were identified among symptomatic patients: three cases of DENV (11.5%), two cases of CHKV (7.7%) and 4 cases of ZIKV (15.4%). So far, the most severe cases were observed only in patients with dengue virus, highlighting the viremia persistence (more than 30 days), bleeding and all with thrombocytopenia(<20,000/mm3). In the two patients with proven CHKV infections, the duration of fever was less than two days, and the most significant symptom was joint pain that resolved in a few days. One oncohematological patient acquired ZIKV infection immediately before transplantation and the viremia lasted at least 7 days. This patient had a delayed neutrophil engraftment (27 days) after HSCT. All cases reports will be thoroughly described at the poster. **Conclusions.** With the expansion of the geographic distribution of the Aedes mosquitoes, arbovirus infections are a constant threat to transplant recipients living in or traveling to endemic or epidemic regions. Our preliminary data suggest a mild to moderate morbidity of Chikungunya and Zika infections in oncohematological and HSCT patients, probably similar to immunocompetent population. The three dengue cases were the most severe cases observed in the present study. The impact of ZIKV infection in engraftment delay need to confirmed in the future. Similarly, longer follow-up is necessary to evaluate the occurrence of any neurological disability in ZIKV cases. A better understanding of this scenario will come as more cases are reported.

Place of Work Virology Laboratory, Institute of Tropical Medicine, University of São Paulo, SP
HSCT Program, Amaral Carvalho Foundation, Jahu, SP
Faculty of Medicine of Ribeirão Preto, University of São Paulo, SP
HSCT Program, Hospital de Câncer de Barretos, SP
Santa Casa de Misericórdia de Itabuna, BA

Country Brazil

Poster 103

Mycetoma, epidemiological aspects in an urban hospital

Presenter
Norma Fernández

First Author
Norma Fernández

Other Authors
Luciana Farias
Iris Nora Tiraboschi

Introduction: Mycetoma is a neglected tropical disease, usually diagnosed after years of evolution in patients in rural areas after a traumatic inoculation of the pathogen. This leads to them developing a chronic and progressive infection. Reporting cases are rare outside endemic areas of our country. **Objective:** To report cases of mycetoma diagnosed in a university hospital in Buenos Aires, Argentina. **Materials:** A retrospective study on medical records of patients diagnosed with mycetoma was conducted, including demographic, etiologic and clinical data in the period between 1984 and 2016. **Results:** We report 18 patients diagnosed with mycetoma for over a period of 32 years. Males were predominately affected (72%), with a sex ratio of 2.6:1. All patients were adults, aged between 27-82 years old. Thirty-eight percent (38%) of patients resided outside of rural areas; only 55% (10/18) have performed rural tasks. Local trauma was identified in 27% of cases; snake bite in 11%. The duration of the disease ranged from 2 months to 43 years. Anatomic location of mycetomas included arm (1), hand (1), gluteus (2), foot and ankle (7), leg (4), epidural in lumbar spine (1), foot and inguinal (1) and foot and back (lumbar area) (1). The diagnosis was performed by direct observation of grains in fresh examination in all cases. Grains, needle aspiration and surgical biopsies were cultured in different media: lactrimel, Sabouraud, brain heart infusion and Lowenstein agar. Diagnosed isolates included Nocardia spp in 9 cases (50 %), Actinomadura madurae in 5 (28%), Trematosphaeria grisea in 2 patients (11%) Streptomyces somaliensis in one (5.5%) and Scedosporium apiospermum in 1 patient (5.5%). The treatment was aimed according etiological agents. Outcomes were undetermined in some patients due to abandonment of the medical follow-up. **Conclusion:** Despite the fact that mycetoma is a low prevalence disease and mainly located in rural environment, it may be diagnosed without this background without delay to avoid consequent morbidity.

Place of Work División Infectologia. Hospital de Clínicas José de San Martín. Universidad de Buenos Aires

Country Argentina

Poster 104

Clinical onset in patients with human immunodeficiency virus

Presenter
María Inés Jean-Charles

First Author
María Inés Jean-Charles

Other Authors
Natalia Frassone
Cecilia Garelli
Romina Maria Bertuzzi

Introduction: Human immunodeficiency virus (HIV) induces a chronic and progressive process with a huge spectrum of manifestations and complications from primary infection to opportunistic infections and tumors. The natural history of disease is characterized by a post- infection asymptomatic period, which has an average of 10 years but can be variable. The appearance of clinical complications usually occurs after this period, and patients are known as typical progressors. Clinical onset of AIDS consists in identifying opportunistic disease AIDS or lymphocytes CD4 less than 200 cels/ uL in patients, including confirmation of HIV positive serology and classification as AIDS case. These patients come to consult with a depleted immune system and high viral replication, a situation which, accompanied by a lack of antiretroviral or late onset of this therapy, makes evolve unfavorably, present more complications and die in greater proportion. Failure to detect early disease not only has a negative impact on the patient, also on the rest of the population itself. In the first case, because they will benefit less from treatment and in the second, because it is more likely to transmit the virus to others. The proportion of these patients has increased worldwide. Deficiencies in the control program and detection of new cases could be involved in their genesis. This study point is to evaluate which is de most common reason for consultation in patient without HIV previous diagnosis, time of diagnosis in our hospital, probably lost opportunities, immune status at diagnosis and clinical manifestations. **Materials and methods:** Clinical story from patients admitted at Hospital Italiano de Córdoba from January 2014 till June 2016 where checked out. Inclusion criteria was positive HIV serology checked with second test, diagnosis in admission, during internment or at consulting room. Exclusion criteria included people with previous HIV diagnosis, false positive test checked with second test. **Results:** From included patients (N=26) Reason of consultation was: fever 38.46% weight loss 23.07% diarrhea 11.53% lab result of medical control 11.53 sensory loss 7.69% skin lesions 3.8% %. The diagnosis was: pneumonia 30.76% (8 patients) 3 of which was P.carinii, 1 Rodhococcus spp, 3 B. tuberculosis. Wasting syndrome 11.53%. Pulmonar TBC 11.53%. Acute retroviral syndrome 11.53% Kaposi's sarcoma 7.69%. Non-Hodgkin lymphoma 3.8%. Cryptococcus neoformans 2%. At diagnosis moment CD4 average was ±136.57 / mm3, the age average was ± 55.6 years. 2 patients where co-infected with VHC. Total mortality was 15.38%. **Conclusion:** Primary HIV infection causes a recognizable clinical syndrome that is often underdiagnosed. Acquisition of HIV does occur, even in persons with relatively few sexual partners, and advanced age. We should take advantage of every medical consult to ask patients about performing an HIV test.

Place of Work Hospital Italiano de Córdoba Country Argentina

Poster 105

Bacteraemia in febrile neutropenic patients with haematological malignancies: bacterial isolates, patterns of resistance and application of a therapeutic protocol in the Hospital de Clinicas Manuel Quintela - Montevideo, Uruguay 2011- 2015

Presenter
Noelia Ferreira

First Author
Sofía Grille

Other Authors
María Noel Spangerberg
Rosario Palacio
Graciela Pérez Sartori
Lilian Díaz
Julio Medina

Introduction: Infections are one of the main causes of death in neutropenic patients with onco-hematologic diseases. Bacteremia is found in 10-25% of the febrile neutropenia (FN) episodes, especially in those with profound and sustained neutropenia (absolute neutrophil count below 100/uL for more than 7 days), with high mortality rates per episode. Gram-negative bacteria are the most frequent isolation, with increasing resistance patterns. Local epidemiological bacterial isolates and resistance patterns are crucially important in determining first-choice empirical therapy, which determines the prognostic of the patients. **Objectives:** -Describe the bacterial isolates in blood cultures and its resistance patterns. -Identify if the initial antibiotic therapy was appropriate regarding the bacteria isolations. -Evaluate the application and compliance with the Hospital de Clinicas protocol for initial antibiotic therapy of FN in onco-hematologic diseases. **Methods:** Retrospective observational study held in Hospital de Clínicas Manuel Quintela Montevideo – Uruguay from August 1st 2011 to December 31st 2015. Bacteremia of first episode of FN in high risk hemato-oncologic patients, older than 18 years old, were analyzed. **Results:** A total of 200 episodes of neutropenia were observed, 82/200 (41%) FN and 20/82 (24%) bacteraemias in 19 patients. Mean age was 37 years (range 18-78), females 12/19 (60%). Median neutropenia duration was 26 days, and profound neutropenia 14 days. Regarding antibacterial prophylaxis, 95% received it. The primary diseases were acute myeloid leukemia 75%, (50% in induction phase), acute lymphoblastic leukemia (10%) and non-Hodgkin's lymphoma and Hodgkin lymphoma 15%. In 50% of the episodes of FN the origin was not found, in the rest: 15% was cutaneous, 10% pulmonary, 10% abdominal, 10% catheter associated infection and urinary 5%. 95 % were late bacteraemias with a predominance of Gram negative bacteria, 65% of them multi resistant. More than one bacteria were isolated in 3/20 positive blood cultures. The isolations were the following: 23 bacteria: 20 Gram-negative bacilli y 3 Gram-positive coccus. E coli 11, 4 of them produced extended spectrum b-lactamase (ESBL), K. pneumoniae ESBL (4), E. cloacae (3), S. maltophilia (1), P. aeruginosa (1), methicillin-resistant Staphylococcus aureus (MRSA) (1), S. epidermidis (1), S. mitis (1). Regarding the application of the protocol for empirical antibiotic treatment we found that there was compliance with it in 55 % (11/20) and there was not in 45 % (9/20). The empirical antibiotic treatment was appropriate in 65% (13/20) vs. when the protocol was followed the antibiotic choose was appropriate in 95% of the episodes, on the contrary when it was not followed the treatment was appropriate in only 25% of the episodes. The crude mortality was 6/20 (30%) (4 acute myeloid leukemia in induction phase and 2 non-Hodgkin's lymphoma in second line therapy). **Conclusions:** The majority of bacteraemia were late and the majority by Gram-negative bacteria, 65% of them multi resistant. All of them were susceptible to carbapenemes. There was a compliance with the initial antibiotic empirical therapy protocol in 55% of the episodes, and in this group the treatment was appropriate in 95%. The application of an initial antibiotic treatment protocol is very important and it is necessary to improve the compliance with it in the unit.

Place of Work Hospital de Clinicas Manuel Quintela, Montevideo Country Uruguay

Poster 106

Analysis of episodes of Febrile Neutropenia in a Single Referral Center for Pediatric Oncology

Presenter
Adriana Maria Paixao de Sousa da Silva

First Author
Adriana Maria Paixao de Sousa da Silva

Other Authors
Letícia Maria Acioli Marques
Priscila Costa Pimentel
Antonio Sergio Petrilli
Fabianne Carlesse

Fever during chemotherapy-induced neutropenia may be the only indication of a severe underlying infection, because signs and symptoms of inflammation typically are attenuated. Overall mortality rates are about 5% in patients with solid tumours and as high as 11% in some haematological malignancies. In this context, several institutions adopt risk stratification to guide conduct. These risk stratifications differ, taking into account the clinical and microbiological characteristics of each institution. So, our aim was to check the protocol adopted in our institution regarding risk stratification and patient outcomes. We conducted a retrospective study using data of medical records of patients with febrile neutropenia (FN) treated at the Pediatric Oncology Institute - GRAACC/UNIFESP, a referral center of pediatric oncology in Brazil, from January to June 2016. Neutropenia was considered with neutrophil count <500/mm3 or <1000/mm3 with a tendency to fall to <500/mm3 within 48 hours. We adopted fever as axillary temperature ≥37.5o C in three steps with an interval >4 hours within 24 hours or isolated ≥38o C. Patients were considered at high risk when they had relapsed ALL, AML or comorbidities; as well as patients less than 3 years of age and subjected to high intensity chemotherapy. Patients classified as low risk were treated as outpatients with oral or intravenous therapy and those at high risk were hospitalized and performed intravenous therapy. In this period, there were 104 patients with 152 febrile neutropenia episodes and median age of 7.4. We had 65 patients with solid tumours (62.5%) and 37 haematological malignancies (35.6%) – 15 ALL, 14 non-Hodgkin's lymphoma, 7 AML and 1 CML. There were 89 episodes classified as High risk (58.6%) and 63 low risk (41.4%). Of those classified as high risk, 44 (49.4%) were fever of unknown origin (FUO), 27 (30.4%) microbiologically documented infections (MDI) and 18 (20.2%) clinically documented infections (CDI). Of the MDI, we had 20 (74.1%) Bloodstream infections (BSI), 6 (22.2%) urinary tract infections (UTI) and 1 (3.7%) other infection. Of the BSI, 23 agents were isolated: 14 (60.9%) Gram Positive – 9 coagulase-negative Staphylococci, 3 S. aureus and 2 S. viridans – and 9 (39.1%) Gram Negative – 3 E. coli, 2 K. pneumonie, 1 K. oxytoca, 2 P. aeruginosa, 1 other. In the UTI, 5 (83.3%) Gram Negative – 2 E. coli, 1 K. pneumonie, 1 P. aeruginosa, 1 Proteus mirabilis – and 1 yeast – Trichosporon spp. In those CDI, we had 9 (50%) gastrointestinal infections, 4 (22.2%) respiratory infections, 3 (16.7%) sepsis, 1 skin infection and 1 surgical site infection. Of those low risk patients, 34 were improperly classified, leaving 29 patients for analysis. There were 23 (79.3%) FUO, 4 (13.8%) MDI and 2 (6.9%) CDI. In the MDI, we observed 3 (75%) UTI – 2 E. coli, 1 K. pneumonia – and 1 BSI (25%) – Bacillus cereus. And of those with CDI, there were 1 respiratory infection and 1 skin infection. There was only one death at the high risk group. When we compared the patients with low risk and high risk with regard to the evolution to documented infection, we found that low-risk patients evolved more with FUO (p=0.0092). In conclusion, the high risk patients evolved more to documented infections. This finding makes us think that the risk stratification protocol adopted in the institution is in good assessment of the main risk factors for unfavorable outcomes in these patients.

Place of Work Institute of Pediatric Oncology, GRAACC , Federal University of São Paulo

Country Brazil

Poster 107

Description of computed tomography findings and serum galactomannan results for sinusitis evaluation in hematopoietic stem cell transplant recipients

Presenter
Fernanda Hammes Varela

First Author
Fernanda Hammes Varela

Other Authors
Jessica Fernandes Ramos
Marjorie Vieira Batista
Jayr Schmidt Filho
Vanderson Rocha
Silvia Figueiredo Costa

Background: Hematopoietic stem cell transplantation (HSCT) recipients frequently have infections as a major complication. Sinusitis is a common disease in these specific population, 30-51% of prevalence. It can become a life threatening infection especially when caused by filamentous fungi. **Materials and methods:** A retrospective review was performed between July 2015 and July 2016 including all patients who had received HSCT at a Brazilian Teaching Hospital. Data were obtained through medical records: sinuses computed tomography (CT), performed cultures and serum galactomannan. **Results:** There were performed 144 HSCT, 76.8% autologous, with a mortality rate of 8.3%. Forty patients (57.5% male, 45% allogenic HSCT) undergone sinuses CT within median of 10 days (2 - 233 days) after cell infusion. Six patients (15%) had normal CT. The median of serum galactomannan of sinusitis cases was 0.08 ng/mL, with one patient with positive assay (serum galactomannan 1.5 ng/mL). Four patients (10%) had acute sinusitis with pathology or microbiology confirmation collected by surgical debridement: one caused by Fusarium spp (diagnosed by PCR), one by Rhizopus spp and two by Staphylococcus epidermidis. Both fungal sinusitis occurred in allogenic HSCT recipients with one death. None of them presented positive galactomannan assay or bone erosion at sinuses CT. **Conclusions:** Sinusitis remains a common infectious complication after HSCT. In this presented cohort neither galactomannan nor CT findings could predict severe cases. Just a small portion of patients was submitted to early surgical debridement that is associated with better prognosis. The small number of confirmed cases limited conclusions regarding therapy.

Place of Work Clinicas´ Hospital of University of São Paulo

Country Brazil

Poster 108

Utility of β-D-Glucan for diagnosis and monitoring of chronic disseminated candidiasis in pediatric cancer patients

Presenter
Andreas H. Groll

First Author
Heidrun Herbrüggen

Other Authors
Martina Ahlmann
Birgit Fröhlich
Jörg Steinmann
Peter Rath
Andreas H. Groll

Introduction: β-D-Glucan (BDG) is a useful albeit nonspecific biomarker in patients with suspected invasive fungal diseases and Pneumocystis pneumonitis. Little is known, however, about its utility for diagnosis and response monitoring of chronic disseminated candidiasis. **Methods:** We describe the utility of serum BDG in pediatric cancer patients with chronic disseminated candidiasis. BDG in serum was measured by a commercially available assay (Fungitell®; Associates of Cape Cod, MA, USA) and values obtained at diagnosis and over time during antifungal treatment were correlated retrospectively to patient- and disease related variables. **Results:** Three pediatric patients (2f/1m; 9-18 years) with acute lymphoblastic leukemia (2) and Ewing sarcoma (1) and a diagnosis of probable chronic disseminated candidiasis (EORTC/MSG) were identified between 2013 and 2016. Everybody had a history of prolonged chemotherapy-induced granulocytopenia and mucositis, and two had received prolonged courses of corticosteroids. Chronic disseminated candidiasis was located in spleen, lungs, skin and central nervous system (CNS); spleen, liver, lung; and spleen, liver and CNS; and diagnosed on the basis of imaging findings, a positive BDG assay in serum, and microbiologically documented absence of an alternative bacterial, viral, and parasitic etiology. Patients initially received IV treatment with liposomal amphotericin B and/or caspofungin, followed by PO fluconazole for 53 (treatment ongoing), 184, and 378 days, respectively. A total of 16 BDG values were obtained in the three patients; the time course of BDG during antifungal treatment correlated well with the results of imaging findings. BDG concentrations in serum remained elevated for prolonged periods of time, were independent of clinical symptoms and returned to normal only upon resolution of all imaging findings in the two patients who completed treatment. **Conclusions:** β-D-Glucan (BDG) in serum proved useful for microbiological diagnosis of chronic disseminated candidiasis. BDG concentrations stayed elevated for prolonged periods of time and returned to normal along with the complete resolution of previously abnormal imaging findings.

Place of Work Infectious Disease Research Program, Center for Bone Marrow Transplantation and Department of Pediatric Hematology and Oncology, University Children's Hospital Münster
Institute of Medical Microbiology, University Hospital Essen, University of Duisburg-Essen

Country Germany

Poster 109

Misidentification of Candida auris: experience in a Colombian medical institution

Presenter
Indira Berrio Medina

First Author
Diego H. Cáceres

Other Authors
Indira Berrio Medina
Adriana Marín
Soraya Salcedo
Patricia Escandon
Alex Bandea
Snigdha Vallabhaneni
Tom Chiller
Shawn R. Lockhart

Introduction: Candida auris is emerging as a multidrug-resistant (MDR) pathogen. Its identification using conventional methods has several limitations, often being misclassified as C. haemulonii, Candida spp, Sacharomyces spp or Rhodotorula glutinis. The aim of this study was to describe the discrepancies in the identification of C. auris using the BD Phoenix Yeast-ID system, which does not have C. auris in its database. **Materials and methods:** Using the Bruker MALDI-TOF (Microflex®), we analyzed a total of 35 isolates that were initially identified as C. haemulonii (n=21) and Candida spp (n=14) using the BD/Phoenix Yeast-ID system. These isolates were collected at Clinica General de Norte, Barranquilla-Colombia, from December 2014 to April 2016. **Results:** Of the 21 isolates initially identified as C. haemulonii, MALDI-TOF identification classified 17 isolates as C. auris (81%), 3 as C. haemulonii (14%) and 1 as C. albicans (5%). Of the 14 isolates initially identified as Candida spp, MALDI-TOF classified 10 isolates as C. auris (72%), 3 as C. tropicalis (21%) and 1 as C. haemulonii (7%). **Conclusion:** The BD Phoenix Yeast-ID does not identify C. auris because it is not in the database. High discrepancies were observed in the isolates that were identified as C. haemulonii, 81% of which were actually C. auris. Because C. auris is an emerging MDR pathogen, it is necessary to have laboratory identification systems that can identify this species and distinguish it from other closely related species.

Place of Work

Mycotic Diseases Branch, Centers for Disease Control and Prevention (CDC), Atlanta, EE.UU.
Oak Ridge Institute for Science and Education (ORISE), Oak Ridge, EE.UU.
Centro Internacional de Entrenamiento e Investigaciones Médicas (CIDEIM)
Clínica General del Norte, Barranquilla, Colombia. 5) Grupo de Microbiología, Instituto Nacional De Salud, Bogotá, Colombia.

Country Colombia

Poster 110

Comparative study for 147 Candida spp. identification and echinocandins susceptibility in isolates obtained from blood cultures in 15 hospitals, Medellin, Colombia

Presenter
Indira Berrio Medina

First Author
Indira Berrio Medina

Other Authors
Natalia Maldonado
Catalina De Bedout
Karen Arango
Luz Elena Cano
Yorlady Valencia
Cristina Jiménez-Ortigosa
David S. Perlin
Beatriz L. Gómez
Carlos Robledo
Jaime Robledo

Introduction: Invasive candidiasis represents over 70% of fungal infections in hospitalized patients with high impact on morbidity and mortality. Due to the importance of echinocandins as first line antifungals in severe Candida infections it becomes crucial to know the epidemiology of these infections and the accuracy of laboratory methods available to identify Candida species and their susceptibility to echinocandins. **Objective:** The aim of this study was to compare the minimum inhibitory concentrations for caspofungin and anidulafungin obtained by broth dilution method and Etest and determine the presence of FKS gene mutations. Also, determine the agreement between the results of species identification obtained by MALDI TOF mass spectrometry and molecular identification. **Material and methods:** The sample consisted of 147 isolates of Candida spp. obtained from candidemia that were collected as part of a previous study in 2010-2011. Molecular identification was performed by sequencing the D1/D2 region of the rRNA gene complex 28 subunits. Parallel identification was performed in a MALDI-TOF mass spectrometer (Vitek MS®) by IVD database version 2.0. The broth dilution test was performed in accordance with the Clinical and Laboratory Standards Institute. Caspofungin and anidulafungin powders were obtained from Sigma (cat. SML0425-25MG) and Pfizer (Peapack, NJ, USA), respectively. The Etests® were performed in accordance with the manufacturer's recommendations. Interpretation of susceptibility was performed by applying the interpretive breakpoints defined by the CLSI in 2012. DNA sequencing of the two hot spot regions of the drug target gene FKS1 and FKS2 was performed in Public Health Research Institute-NJMS Rutgers University, New Jersey. **Results:** The most common species were C. albicans (40.8%), followed by C. parapsilosis (23.1%) and C. tropicalis (17.0%). Overall agreement between the results of identification by MALDI-TOF MS and molecular sequencing was 99.3%. The agreement was 100%, except for C. auris, for which an identification result was not obtain by MALDI TOF method. Susceptibility to anidulafungin and caspofungin found by using broth dilution method method were 98% and 88.4% respectively, while the susceptibility to both echinocandins by Etest was 93.9% and 98.6%. Differences in anidulafungin susceptibility between the two methods were observed in C. parapsilosis, 97.1% by broth dilution method and 79.4% by Etest method. In contrast, susceptibility to caspofungin in C. glabrata was higher by Etest compared to the reference method, 100% and 20% respectively. Overall categorical agreement for anidulafungin and caspofungin was 91.8% and 89.8% respectively. However, differences in agreement were observed according to species and antifungal used; C. parapsilosis showed 76.5% and M. guilliermondii complex 80.0% for anidulafungin and, C. krusei showed 33.3% and C. glabrata 40.0% for caspofungin. Etest results had higher MICs than the BDM method for anidulafungin, in particular against C. parapsilosis and M. guilliermondii complex. No mutations leading to amino acid changes were found in the FKS gene(s) in the 147 Candida spp. isolates analyzed. However, 54 out of 147 isolates, presented polymorphisms (SNPs) in the hot spots sequenced. Forty-six of them (85%) had silent mutations mainly in the FKS1 HS1 and 8 of them (15%) presented silent mutations in FKS1 HS2. The majority of the FKS1 HS1 synonymous mutations were found in C. albicans (82%). **Conclusion:** MALDI TOF MS (Vitek MS) is an excellent alternative for a routine identification of Candida isolates in diagnostic microbiology laboratories, except in places where Candida auris is a frequent pathogen. The data suggest that anidulafungin may be used as a better surrogate than caspofungin for phenotypic susceptibility tests, in particular Etest. The DNA sequencing of the hot spots of the FKS genes data suggest that isolates analyzed in this study are susceptible to echinocandins; however, unknown resistance mechanisms may also explain the resistance found in some isolates. Prospective studies are necessary to know the resistance patterns in Candida isolates since the use of echinocandins is rising, which should have an impact in the increase of resistance. **This work was supported by Merck Sharp & Dohme**.

Country Colombia

Place of Work
Clínica El Rosario, Medellín, Colombia
Corporación para Investigaciones Biológicas (CIB), Medellín, Colombia
Laboratorio Médico de Referencia, Medellín, Colombia
Microbiology School, Universidad de Antioquia (UdeA), Medellín, Colombia.
Public Health Research Institute, New Jersey Medical School, Rutgers University, Newark, NJ
School of Medicine and Health Sciences, Universidad Rosario, Bogotá, Colombia
School of Health Sciences, Universidad Pontificia Bolivariana (UPB), Medellín, Colombia
Centro Internacional de Entrenamiento e investigaciones Médicas (CIDEIM), Cali, Colombia

Poster 111

Candidemia by *Candida auris* in a medical institution in Barranquilla, Colombia

Presenter
Indira Berrio Medina

First Author
Indira Berrio Medina

Other Authors
Diego H. Cáceres
Adriana Marín
Soraya Salcedo
Laura Mora
Natalia Maldonado
Dino Fernández
Elizabeth L. Berkow
Snigdha Vallabhaneni
Tom Chiller
Shawn R. Lockhart

Introduction: Candida auris is an emerging multidrug-resistant (MDR) pathogen associated with invasive infections with high mortality. The aim of this study was to describe the characteristics of patients with C. auris candidemia in a Colombian medical institution. **Materials and methods:** A total of 24 cases of candidemia with C. auris from Clinica General de Norte, Barranquilla-Colombia were analyzed (December 2014 to April 2016). Isolates were identified using MALDI-TOF (Microflex®). Minimum Inhibitory Concentration (MIC) values to antifungals were generated by broth microdilution. **Results:** The age range of patients was between 0 and 89 years, 63% of the cases were male. Eleven patients died (46%), all of the deceased patients presented with major underlying medical conditions, compared with only 5 of surviving patients (38%). Using conservative breakpoints, six of the isolates (25%) were resistant to Amphotericin-B (MIC> 1 ug / ml), two (8%) were resistant to fluconazole (MIC ≥32), one (4%) was resistant to voriconazole (MIC ≥4 mg / ml) and one (4%) was resistant to all the echinocandins (MIC ≥8) and fluconazole. Antifungal treatment was initiated in 73% of patients who died (fluconazole 9%, voriconazole 18% and caspofungin 46%), compared with 100% of the surviving patients (fluconazole 23%, voriconazole 8%, caspofungin 31% and Amphotericin-B 38%). **Conclusion:** High mortality was observed in this study. It is important to note that all patients who died had serious underlying conditions. Some isolates tested had elevated MIC against Amphotericin-B, fluconazole, voriconazole and echinocandins, and one isolate was multidrug resistant. Twenty-seven percent of patients who died did not receive antifungal or only received treatment with Amphotericin-B.

Place of Work Clínica General del Norte, Barranquilla, Colombia.
Mycotic Diseases Branch, Centers for Disease Control and Prevention (CDC), Atlanta, EE.UU.
Oak Ridge Institute for Science and Education (ORISE), Oak Ridge, EE.UU.

Country Colombia

Poster 112

Impact of T cell conditioning on Infection Outcomes in Haploidentical Allogeneic Stem Cell Transplant – a single center experience

Presenter
Shariq Haider

First Author
Stephen Robinson

Other Authors
Irwin Walker
Shariq Haider

Background: Haploidentical stem cell transplants have provided an opportunity for nearly all patients to benefit from allogeneic stem cell transplantation when a fully HLA-matched donor is unavailable. Haploidentical transplantation allows partially HLA-matched relatives to be donors, which in turn significantly increases donor availability. Due to the use of partially HLA-matched donors the risk of graft-versus-host disease (GVHD) significantly increases and therefore must be mitigated by either increased immunosuppression or graft manipulation (T-cell depletion). The potential incremental risk of infection with either strategy needs to be considered. **Study Protocol:** Between October 2013 and March 2016 fourteen individuals underwent Haploidenical allogeneic stem cell transplants (HSCT) in Hamilton, Ontario, Canada. A single center retrospective experience was carried out with primary outcome of survival at day 100 and survival at one year. Secondary outcomes examined a spectrum of infections between the two strategies of T cell manipulation. **Results:** The mean age at transplant was 43.6 (SD 13.0). Of the 14 patients, 5 (35.7%) underwent a T-cell depleted HSCT (Kiadis protocol) while 9 (64.3%) underwent a T-cell replete HSCT (Baltimore protocol). Underlying diagnoses included 6 patients (42.9%) with acute myeloid leukemia (AML), 4 patients (28.6%) with relapsed Hodgkin's lymphoma (HL), 2 patients (14.3%) with acute lymphoblastic leukemia (ALL), 1 patient (7.1%) with myelofibrosis, and 1 patient (7.1%) with myelodysplastic syndrome. All-cause mortality at 100 days was 14.3% (2/14) with both of these patients having undergone the Baltimore protocol. The cause of death in both cases was felt secondary to bacterial sepsis. One-year all-cause mortality equaled 42.9% (6/14), with 66.7% (4/6) deemed infection-related. The 4 deaths due to infectious complications all had undergone the Baltimore protocol. Of these, one was due to invasive fungal disease while the other 3 were felt to be secondary to bacterial causes. CMV reactivation occurred in 50% (7/14) of all patients, with 80% (4/5) of the Kiadis protocol patients having at least one episode of reactivation. **Conclusions:** One-year survival data in our Haploidentical Transplant is comparable to matched related donor stem cell transplantation and matched unrelated donor stem cell transplantation. The impact of T cell manipulation on infection related outcomes in a Haploidentical Transplant Patient Group is limited by our small sample size but will be used to revisit infection related preemptive and prophylactic strategies notably with respect to CMV reactivation.

Place of Work McMaster University, Hamilton Ontario
Division of Infectious Diseases (1) (3)
Division of Haematology (2)
Hamilton Health Sciences

Country Canada

Poster 113

The relationship between EBV serologic pattern and immune status of HIV infected individuals with or without antiretroviral treatment.

Presenter
Weronika Rymer

First Author
Weronika Rymer

Other Authors
Malgorzata Zalewska
Milosz Parczewski
Monika Bociaga-Jasik
Brygida Knysz

Background: HIV-infected individuals are at the higher risk of EBV-related lymphoma development. Reactivation and lytic phase of EBV infection is associated with the oncogenic process. Antibodies against early antigens (EA) are detected both in early infection but also reactivation. Immediate early protein BZLF1 is a transcriptional activator that mediates the switch between the latent and the lytic forms of EBV infection and anti-BZLF1 are common detected in EBV-related neoplasma cases. Interpretation of EBV serology is a basis of diagnosis the infection phase, however the biology of EBV and individual immune responses make it difficult. The aim of the study was to determine the relationship between immunological status, antiretroviral treatment and serological markers of EBV infection in HIV positive population. **Materials and methods:** Serological EBV tests were performed in the serum samples of 79 HIV-infected individuals divided by the four groups (group A n=20: CD4 <300 cells/mcl, antiretroviral-treatment naive; group B n=20: CD4<300 cells/mcl on suppressive cART (HIV-RNA, 50 copies/ml); group C n=20: CD4>300 cells/mcl, antiretroviral-treatment naive; group D n=19: CD4>300 cells/mcl on suppressive cART (HIV-RNA, 50 copies/ml). There was no age and sex difference between the groups. Patients with no previous or early EBV infection as with history of cancer were excluded from the study. EBV IgG was detected by recomLine EBV Microgen Diagnostic and include: anti-EBNA-1, anti-p18 (virus capsid antigen; VCA), anti-p23 (VCA), anti-p138 (early antigens; EA), anti-p54 (EA), anti-BZLF1 (immediate early antigen; IEA). Correspondence analysis method was used; two dimensions analysis was performed with at least 85% of representation. **Results:** According to scatter plot of row and column points, our data showed that high titer of anti-EBNA-1 and anti-p18 was detected in groups with antiretroviral treatment (B and D). In group D there was also much common detected anti-p23 with high titer result. There was no relationship observed between the all groups and anti-EA antibodies (anti-p138 and anti-p54). Anti-BZLF1 antibodies were much common detected in groups with low count of CD4+ lymphocytes (groups A and B). **Conclusions:** The immunological status and antiretroviral treatment have no relationship with production of IgG antibodies against early antigens of EBV. The immune suppression has relationship with anti-BZLF1 antibodies production what may be the marker of switching between latent and lytic form of EBV; the clinical application of these observation required another studies.

Place of Work Wroclaw Medical University, Pomeranian Medical University, Jagiellonian University

Country Poland

Poster 114

Clinically Achievable Concentrations of Posaconazole Before and After the Availability of the Delayed Release Tablet and Intravenous Formulations

Presenter
Nathan P. Wiederhold

First Author
Nathan P. Wiederhold

Other Authors
Sheryl Dorsey
Thomas F. Patterson

Objective: Therapeutic drug monitoring of azole antifungals has become a routine part of clinical care in some institutions. With the oral suspension (OS) formulation of posaconazole, this is critical due to the saturable absorption that is observed with higher doses and numerous factors that reduce its oral bioavailability. However, the new formulations of this azole, including a delayed release tablet (DRT) and an intravenous (IV) formulation, are now available in some countries and have been reported to improve the concentrations that are achieved within the bloodstream. We reviewed our experience with posaconazole concentrations before and after the availability of these new formulations. **Methods:** The antifungal drug concentration database in the Fungus Testing Laboratory at the UT Health Science Center San Antonio was queried. This database is populated with antifungal drug levels from human samples sent to our reference laboratory for analysis. All samples were appropriately processed, and posaconazole concentrations were measured either by HPLC or UPLC/MS. For this study, only confirmed human bloodstream (serum/plasma) concentrations were included. The percentage of patients who achieved concentrations above 0.7 mg/L and 1.25 mg/L (concentrations associated with prophylactic and treatment efficacy, respectively) were compared between the periods when only the OS was available and since the release of the DRT and IV formulations in the U.S. **Results:** Overall, 2279 posaconazole concentrations were included, 1548 for only the OS formulation, and 731 since the DRT/IV formulations became available in the U.S. Overall, significantly more patients achieved concentrations above 0.7 mcg/ml and 1.25 mcg/ml after the availability of the DRT/IV formulations (65.3% and 41.4%, respectively) compared to the OS formulation (41.6% and 18.6%, respectively; $p < 0.05$). The percentage of patients achieving high concentrations (i.e., above 3.5 mg/L) was also higher after the availability of the DRT/IV formulations (8.5%) compared to when only the OS formulation was available (0.71%; $p < 0.05$). **Conclusions:** The DRT and IV formulations have resulted in markedly higher bloodstream concentrations of posaconazole. Significantly more patients are achieving concentrations associated with improved prophylactic and therapeutic efficacy with these new formulations compared to those achieved with the OS formulation of this azole. In addition, a higher percentage of patients are also achieving elevated concentrations with these new formulations. It is currently unknown if this will result in more adverse effects associated with posaconazole.

Place of Work UT Health Science Center San Antonio
South Texas Veterans Health Care Administration

Country USA

Poster 115

2016 AWARD NOMINEE ICHS-INFOCUS

The Prognostic Significance of Low Mitogen Response following Haematopoietic Stem Cell Transplantation

Presenter
Michelle Yong

First Author
Michelle Yong

Other Authors
Paul Cameron
Monica Slavin
Orla Morrissey
Krystal Bergin
Andrew Spencer
David Ritchie
Allen Cheng
Guislaine Caracelain
Brigitte Autran
Sharon Lewin

Introduction: Recipients of allogeneic haematopoietic stem cell transplantation (HSCT) are profoundly immunocompromised in the first 12 months post transplantation. Clinicians make complex treatment decisions with immunosuppressive drugs in order to prevent graft versus host disease and relapse of primary disease whilst simultaneously balancing the risk of infection and toxicity. A clinically meaningful and simple biomarker of immunosuppression would greatly assist clinicians in their decision-making. We prospectively assessed mitogen response, as a marker of immunosuppression, and clinical outcomes in a cohort study of allogeneic HSCT recipients in the first 12 months post transplantation. **Methods:** A prospective observational multi-centre study of allogeneic HSCT recipients was conducted at the Royal Melbourne Hospital and the Alfred Hospital, Melbourne, Australia between January 2011 and May 2015. Eligible patients received an allogeneic transplant, were older than 18 years and were at risk of cytomegalovirus (CMV) disease. Study bloods were taken pre-transplant and at 3, 6, 9 and 12 months post-HSCT. Mitogen responses were assessed using the Quantiferon-CMV assay which quantifies interferon gamma (IFN-γ) production by ELISA following stimulation with (1) CMV peptide, (2) phytohaemagglutinin (PHA) as a positive control and (3) nil as a negative control. A low mitogen response was defined as IFN-γ < 0.5 IU/ml following stimulation with PHA. Clinical data such as acute graft versus host disease (AGVHD), chronic graft versus host disease (CGVHD), CMV infection and mortality were collected. **Results:** The median age of participants (n=94) was 51 years (IQR 40-56) and the most common indication for allogeneic transplant was acute myeloid leukemia (AML) (35%). Sixty-three percent of transplant recipients received myeloablative conditioning, 54% had unrelated donors and 9% were umbilical cord transplants. IFN-γ levels post PHA at pre-transplant, 3,6,9 and 12 months were 6.48, 2.05, 7.72, 30.5 and 16.63 IU/ml respectively with the lowest levels being at 3 months (Kruskal wallis p=0.0002). There were no significant differences in individuals who received and didn't receive alemtuzumab (n=9) at all time points. A low mitogen response (PHA IFN-γ <0.5 IU/ml) at 3 months post HSCT was associated with CMV disease (Fisher's exact p=0.002) and twelve month all-cause mortality (p=0.02) but not AGVHD (p=0.15), CGVHD (p=0.9) or CMV reactivation (p=0.5). Peripheral blood lymphocyte count was positively correlated to PHA response (r=0.52, p<0.001) and a low lymphocyte count at 3 months (defined as < 1.0) was also associated with 12 month mortality (p=0.05), CMV disease (p=0.003) but not AGVHD (p=0.5) or CGVHD (p=0.6) or CMV reactivation (p=0.28). Overall twelve month survival was strongly associated with responses to PHA measured at 3 months post HSCT being high mitogen response (n=52) vs low mitogen response (n=21) (92% vs 62% respectively Mantel-Cox Logrank test p=0.0006). **Conclusions:** Following allogeneic HSCT recipients at risk of CMV, low mitogen response when measured 3 months post HSCT was predictive of all cause 12 month mortality and associated with CMV disease. Assessment of T cell responses to PHA, 3 months post HSCT may be beneficial to risk stratify interventions for individuals at high risk of infection and poor survival.

Place of Work University of Melbourne

Country Australia

Poster 116

Plasma exposures following posaconazole delayed release tablets in children and adolescents

Presenter
Andreas H. Groll

First Author
Heidrun Herbrüggen

Other Authors
Martina Ahlmann
Silke München
Heike Thorer
Birgit Fröhlich
Carsten Müller
Andreas H. Groll

Introduction: Posaconazole is a recommended option for antifungal prophylaxis in pediatric patients > 12 years of age and approved for this indication in the United States. The novel delayed release tablet formulation has been shown to provide improved oral bioavailability in adults. Little is known, however, about the exposures following administration of the DR tablets in older children and adolescents. **Methods:** In a retrospective descriptive fashion, we analyzed trough concentrations at steady state of posaconazole in all pediatric patients who had received the delayed release tablet formulation between January 2015 and March 2016 for primary or secondary prophylaxis. Dosing was guided by an early population pharmacokinetic model (Neely & Gentry, ICAAC 2015), and drug concentrations in plasma were measured by a validated HPLC method. Laboratory parameters of hepatic function while on treatment and the rate of drug discontinuations due to adverse effects were also assessed. **Results:** 12 patients (8 m / 4 f) with high-risk leukemia (3), recurrent leukemia (6), bone marrow failure (2) and central nervous system histiocytosis (1) of whom 7 were status post allogeneic HSCT were identified. The median age was 14.5 years (r, 10-18; 3 < 13 years), and the median body weight was 43, 5 kg (r, 28-85). Posaconazole delayed release tablets were administered at the approved dosage in 9, and at a modified dose in 3 patients for a median duration of 187 days (r, 20-303). A total of 23 trough levels was obtained; 6 patients had at least 2 levels. The median trough plasma concentration was 2290 +/-1459 ng/L (r, 512-5701); through concentrations were above the dosing target of 700 ng/l in 22/23 occasions. Posaconazole was well-tolerated without AE- related discontinuations or signals of laboratory hepatic toxicity. **Conclusions:** In this small case series, administration of posaconazole delayed-release tablet guided by a population-PK derived dosing algorithm resulted in predictable and potentially effective exposures and was well-tolerated over prolonged time periods.

Place of Work
Infectious Disease Research Program, Center for Bone Marrow Transplantation and Department of Pediatric Hematology and Oncology, University Children's Hospital Münster;
Department of Pharmaceutical and Medical Chemistry, Clinical Pharmacy, University of Muenster
Department of Pharmacology, University of Cologne; Federal Republic of Germany
Country Germany

Agencia de Eventos Totales Ltda.

EVENTOTAL Ltda.
Camino El Alba 8670
Las Condes · Santiago de Chile
Phone (+56) 222 20 45 53 · Fax (+56) 222 24 14 81
www.eventotal.cl
eventotal@eventotal.cl