Proffered Oral

PO1

Histoplasmosis in Israeli Travelers

Michael J. Segel, Judith Rozenman, Mark D. Lindsley, Tamar Lachish, Neville Berkman, Ami Neuberger and Eli Schwartz
Sheba Medical Center

Histoplasmosis is one of the more common endemic human mycoses. The majority of infections are acquired in the Americas. We report 23 cases of histoplasmosis in Israeli travelers. All traveled to endemic areas; 22 to Latin America, one to North America. Fourteen cases had visited bat habitats, including 9 who visited a specific cave infested by bats in Lanquin, Guatemala. Fourteen of the 23 patients were symptomatic; all presented within 3 months of their return from Latin America. The majority had respiratory symptoms; however 28% presented with prolonged febrile illness only.

Asymptomatic patients were diagnosed during the evaluation of incidental radiological findings or because a travel partner had been suspected of Histoplasma infection. These patients were diagnosed 16-120 months after their return from the endemic region.

Serological testing was positive in 75% of symptomatic cases but only 22% of asymptomatic cases.

Histoplasmosis should be considered in travelers returning from Central or South America with respiratory or febrile illness within weeks of return, particularly if exposed to bat habitats. Serological and urinary antigen testing are useful for diagnosis of “early” presenters but wane over time, and thus are of limited utility in late presenters. Evaluation of travel partners may be a useful adjunct in the returning traveler suspected of having current or healed histoplasmosis. The histoplasmin skin test, if available, may be of use when attempting to diagnose histoplasmosis in non-endemic areas.

PO2

Occupational Exposure to Aspergillus spp. in Poultry and Swine Feed Production

Carla Viegas,1,2 Raquel Sabino1,3 and Anita Quintal Gomes1,4

1Environment and Health RG, Lisboa School of Health Technology, Polytechnic Institute of Lisbon, Lisbon, Portugal; 2Environmental Health Institute, Faculty of Medicine from Lisbon University, Lisbon, Portugal; 3Mycology Laboratory, Instituto Nacional de Saúde Dr. Ricardo Jorge, Lisbon, Portugal and 4Institute of Molecular Medicine, Faculty of Medicine of Lisbon, Lisbon, Portugal

Workers from feed production often develop allergic respiratory symptoms and fungi, are likely to be a significant contributing factor to these symptoms. This study intended to characterize fungal contamination in two feed production units, one for poultry and other for swine consumption. We aimed at identifying which unit presented the highest risk of occupational exposure to Aspergillus spp. Twelve air and twelve surfaces’ samples were collected from the two studied units through impaction and swabbing methods, respectively. After laboratory processing and incubation of the collected samples, quantitative and qualitative results were obtained, with the identification of the isolated fungal species. For molecular analysis, 300L of air were also collected from each same sampling site using the impinger method. Real Time PCR (RT-PCR) was done to perform the molecular detection of the Aspergillus sections Fumigati and Flavi (only the toxigenic strains). In the poultry feed production isolates belonging to the Aspergillus fumigatus species-complex (section Fumigati) were the most abundant in air (46.6%). In the swine feed production no isolate from Aspergillus genus was collected. Regarding the results obtained through molecular methods, A. fumigatus complex was detected in one sampling site in poultry feed production and in two sampling sites in swine feed production where this species-complex was not isolated by conventional methods. Altogether, the results we obtained with cultural methods showed that feed production on poultry was the setting where the highest number of isolates belonging to Aspergillus spp was found. Importantly, the molecular tools applied during this study enabled to target selected fungal indicators, allowing a more precise characterization of the Aspergillus spp. occupational burden in these settings.

PO3

The Fungi: Silent Neighbors or Hidden Threat?

Aleksandra Barac,1 Vesna Tornic Spirci,1,2,3 Marina Pekmezovic1 and Valentina Arsic Arsenijevic1

1National Reference Laboratory for Medical Mycology, Institute for Microbiology and Immunology, Faculty of Medicine, University of Belgrade, Belgrade, Serbia; 2Clinic for Allergology and Clinical Immunology, Clinical Centre of Serbia, Belgrade, Serbia and 3Faculty of Medicine, University of Belgrade, Belgrade, Serbia

Introduction The pathogenesis of fungal rhinosinusitis/FRS was widely investigated but the relationship of the fungal presence in environment and development of FRS is not yet revealed. We evaluated the relationship of the presence of fungi on sinonasal mucosa with fungal presence in home air of patients with their clinical characteristics.

Material and methods The prospective study with 136 patients with chronic rhinosinusitis/CRS was conducted in the National Reference Medical Mycology Laboratory, Faculty of Medicine, University of Belgrade. Study design included: 1) anamnesis data; 2) measurements of molds specific IgE/sIgE and total IgE Ab, absolute eosinophil/Eo count and skin prick test; 3) rhinologic and CT observation; 4) mycological finding of sinonasal nasal aspirate and 5) air sampling from the patient’s bedroom.

Results (i) 30.4% patients with positive molds sIgE Ab had severe forms of CRS with more often presence of NP (p=0,025); (ii) 46.4% of patients with positive sIgE Ab had positive fungal finding on nasal mucosa; (iii) in Serbia the prevalence is 1.3% for allergic FRS/AFRS and 2.8% for FRS; (iv) patients with AFRS had more frequent asthma (p=0,024) and CRS lasting more than 10 years (p=0,000); (v) 225 fungus was found in air samples, the most common were A. niger (57%) and Penicillium sp.(26%).

Conclusion Huge amount of fungal spore in the air of patient’s living area should be threat for development of FRS in predisposing patients. Next studies should clarify the mechanism by which airborne fungi turn from ‘normal flora’ into triggers of immunological reactions, resulting in FRS.

PO4

Production of Echinocandins by Fusarium MS-R1

Segula Masaphy
MIGAL- Galilee Research Institute, Kiryat Shmona, and Tel Hai College, Upper Galilee, Israel

Fungal infections, especially candidiasis, are on the rise in human populations, leading to a continuous search for novel potential chemicals in order to expand the range of drugs. Filamentous fungi are important sources of bioactive secondary metabolites, many of which are used in medicine. This includes production of anti-fungal metabolites that are used to treat human and animal fungal infections.
Among the antifungal drugs used in medicine, the echinocandins are considered to be relatively safer than those derived from azole or polyene compounds. *Fusarium* strain MS-R1, that produces an antifungal compound was isolated in our laboratory and identified by molecular means as a member of the *Fusarium beachiyamamum* complex. The active metabolite was extracted, purified and identified as a novel echinocandin. It’s activity against range of candida species was determined, showing activity mainly against *Candida albicans* and *C. tropicalis*. Further studies on the production of the antifungal metabolite by the fungal mycelium were conducted in both solid and liquid media, with optimization of cultural conditions such as inoculum age and size and medium manipulations.

**PO5**

**Analysis of Mechanisms of Bacterial (*Serratia marcescens*) Attachment, Migration and Killing of Fungal Hyphae**

Tal Maya, Tal Hover, Sapir Ron, Hani Sandovsky, Nitzan Kijner and Nir Osherov

Department of Clinical Microbiology and Immunology, Sackler School of Medicine, Tel-Aviv University, Tel-Aviv, Israel

Interactions between bacteria and fungi are well documented in the literature. To the best of our knowledge no such interactions have been described regarding the gram negative bacterium *Serratia marcescens*. An incidental finding in our laboratory found a remarkable capacity of *S. marcescens* to migrate along the mycelium of *Zygomycete* molds. In this work, we conducted a series of experiments to better define the nature of this phenomenon. We found that migration of *S. marcescens* along fungal mycelium was restricted to *Zygomycete* molds, and several *Basidiomycete* spp. No migration was seen on any mold of the phylum Ascomycota. *S. marcescens* migration did not necessitate fungal viability or surrounding growth medium, as bacteria migrated along aerial hyphae as well. *S. marcescens* did not exhibit growth tropism towards *Zygomycete* mycelium. Bacterial migration along hyphae proceeded only when the hyphae grew into the bacterial colony. *S. marcescens* cells initially swarmed along the hyphae, formed attached microcolonies that grew and coalesced to generate a biofilm covering the mycelium. Flagellum-defective strains of *S. marcescens* were able to migrate along *Zygomycete* hyphae, although significantly slower than the wild-type strain. Bacterial attachment to the mycelium does not necessitate type I fimbrial adhesion since mutants defective in this adhesin migrated equally well or faster than the wild type strain. Killing does not depend on the secretion of *S. marcescens* chitinases as mutants in which all three chitinase genes were deleted retained wild-type killing abilities.

Better understanding of the mechanisms by which *S. marcescens* binds, spreads and kills fungal hyphae could serve as an excellent model system for such interactions in general; fungal killing could be employed in agricultural fungal biocontrol.

**PO6**

**Isavuconazole susceptibility of 489 clinical *Aspergillus fumigatus* isolates**

Jochem B Buil,1 Johan W Mouton,1,2 Henrich AL van der Lee,1 Willem JG Melchers1 and Paul E Verweij1

1Radboud University Medical Centre, department of Medical Microbiology, Nijmegen, the Netherlands, 2Erasmus Medical Centre Rotterdam, department of Medical Microbiology and Infectious Diseases, Rotterdam, the Netherlands

**Introduction** Isavuconazole (ISA) is a new triazole recently approved for the treatment of invasive aspergillosis. EUCAST has set the clinical breakpoint of ISA for *Aspergillus fumigatus* at >1 mg/L (resistant). In this study, we determined the susceptibility of ISA for 489 *A. fumigatus* isolates and compared the susceptibility to other mold-active azoles.

**Methods** Isolates were prospectively collected between June 2014 and December 2015. Minimal inhibitory concentrations (MICs) were determined by broth microdilution EUCAST method. Isolates were grouped as azole “wildtype” and “non-wildtype” by the use of epidemiological cutoffs for voriconazole, posaconazole and itraconazole (1 mg/L, 0.25 mg/L and 1 mg/L, respectively). The susceptibility of ISA was compared to voriconazole, posaconazole and itraconazole for all isolates as a group and for the defined subgroups by the Spearman’s rank correlation coefficient.

**Results** 279 isolates exhibited a “wildtype” azole phenotype, and 210 were “non-wildtype”. 25/279 “wildtype” isolates had an ISA MIC of >1 mg/L and were thus classified as resistant. 197/210 of “non-wildtype” isolates were classified as resistant. The correlation coefficients for “non-wildtype” isolates were very strong, moderate and weak (p<0.001) for ISA compared with voriconazole, posaconazole and itraconazole, respectively. For wildtype isolates the coefficients were all moderate (p<0.001).

**Conclusion** Most “azole non-wildtype” isolates were also resistant for ISA: susceptibility of ISA of non-wildtype isolates had strongest correlation with voriconazole. Additionally, 25/279 “azole wildtype” isolates were classified as ISA-resistant. Thus, isolates with “wildtype” azole susceptibilities, cannot be automatically assumed susceptible for ISA. Consequently, susceptibility testing of ISA is advised before starting ISA treatment.
Abstracts of the 4th European Confederation of Medical Mycology Educational Symposium

14–16 February 2016, Tel Aviv, Israel

Ecology & Mycology: From the Environment to the Patient's Bed

Organized by the Israel Society for Medical Mycology (ISMM)

Scientific/Organizing Committee
Prof. Esther Segal, Tel Aviv University
Prof. Daniel Elad, The Kimron Veterinary Institute
Prof. Itzchack Polacheck, The Hadassah-Hebrew University Medical Center
Prof. Israela Berdicevsky, The Technion
CONTENTS

Introduction 1
Sponsors 2
Program 3
Invited Abstracts 5
Proffered Oral Abstracts 12
Proffered Poster Abstracts 14
Author Index 17

DISCLAIMER: This abstract book has been produced using author-supplied copy. Editing has been restricted to some corrections of spelling and style where appropriate. No responsibility is assumed for any claims, instructions, methods or drug dosages contained in the abstracts: it is recommended that these are verified independently.
Diagnosis, Therapy and Prophylaxis of Fungal Diseases

Official Publication of Deutschsprachige Mykologische Gesellschaft
Official Journal of the European Confederation of Medical Mycology

ABSTRACTED/INDEXED IN: BIOSIS database; CAB Abstracts; Review of Medical and Veterinary Mycology; Cambridge Scientific Abstracts; Microbiology Section C; Chemical Abstracts; Current Contents/Life Sciences; Derwent Drug File; Elsevier BIOBASE/Current Awareness in Biological Sciences; EMBASE/ Excerpta Medica; Index Medicus; Index Veterinarius; MEDLINE; PASCAL; Research Alert; Science Citation Index; SciSearch; SUBIS Current Awareness in Biomedicine; Veterinary Bulletin; VINITI/ Russian Academy of Science.

PUBLISHER
John Wiley & Sons
9600 Garsington Road
Oxford OX4 2DQ, UK
www.wiley.com

EDITORIAL OFFICE
Ann O’Mahony
Mycoses c/o Editorial Office
e-mail: MYCedoffice@gmail.com;
MYCedoffice@wiley.com

SUBMISSION OF MANUSCRIPTS
Manuscripts should be submitted online at http://mc.manuscriptcentral.com/myc. Full instructions are provided on the site.

PRODUCTION EDITOR
Michael John M. Flores
phone: +632 855 8714; +632 855 8790, fax: +632 325 0768
e-mail: myc@wiley.com

OFFPRINTS. For information regarding offprints please contact:
offprint@cosprinters.com
Commercial offprints: bbeyer@wiley.com

TYPESETTING. Scientific Publishing Services, Chennai, India
ISSN 1439-0507 (Online)

BACK ISSUES. Single issues from current and recent volumes are available at the current single issue price from cs-journals@wiley.com. Earlier issues may be obtained from Periodicals Service Company, 351 Fairview Avenue – Ste 300, Hudson, NY 12534, USA. Tel: +1 518 537 4700, Fax: +1 518 537 5899, Email: psc@periodicals.com

COPYRIGHT AND PHOTOGRAPHY. © 2016 Blackwell Verlag GmbH. All rights reserved. No part of this publication may be reproduced, stored or transmitted in any form or by any means without the prior permission in writing from the copyright holder. Authorisation to photocopy items for internal and personal use is granted by the copyright holder for libraries and other users registered with their local Reproduction Rights Organisation (RRO), c.g. Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923, USA (www.copyright.com), provided the appropriate fee is paid directly to the RRO. This consent does not extend to other kinds of copying such as copying for general distribution, for advertising and promotional purposes, for creating new collective works or for resale. Special requests should be addressed to: Permissions@wiley.com

DISCLAIMER. The Publisher and Editors cannot be held responsible for errors or any consequences arising from the use of information contained in this journal; the views and opinions expressed do not necessarily reflect those of the Publisher and Editors, neither does the publication of advertisements constitute any endorsement by the Publisher and Editors of the products advertised.

GENERAL. Mycoses is dedicated to the publication of manuscripts on topics concerning medical or veterinary mycology. Studies on plant pathology or mycological papers on fungi not related to human or veterinary medicine do not lie within the scope of mycoses and will not be accepted. Manuscripts may be published as original communication of normal or short length (Short communication). The submission of review articles both of the mini-review and the full-length type is particularly encouraged. Only papers submitted in English will be accepted (this does not exclude the Latin text required for the description of new species or genera). The editors reserve the right not to accept papers unless adherence to the principles given in the Declaration of Helsinki and the Guiding Principles in the Care and Use of Animals (DHEW Publication NIH) is clear. No charge is made for publication but authors will be required to pay for extensive alterations to agreed papers at proof stage.

EARLY VIEW. Mycoses is covered by Wiley-Blackwell’s Early View service. Early View articles are complete full-text articles published online in advance of their publication in an issue. Articles are therefore available as soon as they are ready. Early View articles are complete and final. They have been fully reviewed, revised and edited for publication, and the authors’ final corrections have been incorporated. Because they are in final form, no changes can be made after online publication. The nature of Early View articles means that they do not yet have volume, issue or page numbers, so Early View articles cannot be cited in the traditional way. They are therefore given a Digital Object Identifier (DOI), which allows the article to be cited and tracked before it is allocated to an issue. After publication in an issue, the DOI remains valid and can continue to be used to cite and access the article.

MANUSCRIPT SUBMISSION
Manuscripts are submitted to mycoses online, i.e. electronically, from the corresponding author’s MyC ScholarOne Manuscripts (formerly known as Manuscript Central account). You will need your files in an electronic format, an Internet connection, and a user ID and password for the site. To begin a new submission go to http://mc.manuscriptcentral.com/myc and log in or create an account to get your user ID and password. Full instructions are provided on the site. If assistance is needed, the Editorial Office can be contacted and will readily provide any help users need to upload their manuscripts. Contact: Mycoses c/o Editorial Office
Ann O’Mahony
E-mail: ann.omahony@ntlworld.com;
MYCedoffice@wiley.com

ELECTRONIC SUBMISSION Manuscripts should be uploaded as Word (.doc) or Rich Text Format (.rtf) files plus separate figure files. GIF, JPEG, PICT or Bitmap files are acceptable for submission, but only high-resolution TIF or EPS files are suitable for production. The files will be automatically converted to a PDF document on upload and will be used for the review process. The text file must contain the entire manuscript including title page, abstract, text, references, tables, and figure legends, but no embedded figures. Figure tags should be included in the file. Manuscripts should be formatted as described in mycoses’ Author Guidelines (below). When preparing your file, please use only standard fonts such as Times, Times New Roman or Arial for text, and Symbol font for Greek letters, to avoid inadvertent character substitutions. In particular, please do not use Japanese or other Asian fonts. Do not use automated or manual hyphenation. For more information on preparing manuscripts for online submission, please read the detailed instructions at http://mc.manuscriptcentral.com/myc. Additional help is available by emailing support@scholarone.com/