



Invasive fungal infections: case-based presentation in pediatric patients (TOC/ Introduction)

To cite this article: (2010) Invasive fungal infections: case-based presentation in pediatric patients (TOC/ Introduction), Current Medical Research and Opinion, 26:7, 1755-1760, DOI: [10.1185/03007995.2010.491342](https://doi.org/10.1185/03007995.2010.491342)

To link to this article: <https://doi.org/10.1185/03007995.2010.491342>



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Published online: 01 Jun 2010.



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Supplement

Invasive fungal infections: case-based presentation in pediatric patients

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This supplement is in part based on a closed roundtable meeting that was held April 30, 2009 in New York City and was jointly sponsored by Postgraduate Institute for Medicine and Global Education Exchange, LLC. through an educational grant from Merck & Co., Inc. The roundtable is available as a free CME webinar on www.doctorfungus.org. The articles comprising this in-journal supplement were reviewed by two referees utilizing CMRO's customary rigorous peer-review process.

Preface

Invasive fungal infections are a major source of morbidity and mortality in immunocompromised children and neonates, particularly in preterm infants. This in-journal supplement intends to review the current clinical data relating to the presentation and clinical management of pediatric invasive fungal infections, as well as to evaluate current clinical practices in light of recent data to optimize clinical outcomes. The three review articles incorporate case studies to illustrate the salient features of invasive mycoses in infants and children. These cases underscore the inherent complexities of invasive mycoses in children, while providing a better understanding of the risk factors, pathophysiology, and age-appropriate pharmacotherapy for invasive aspergillosis and invasive candidiasis.

The supplement begins with an article by Dr. Theoklis Zaoutis, who provides an overview of candidemia in children and discusses choices of antifungal therapy and treatment recommendations of the Infectious Diseases Society of America. This is followed by a review of neonatal candidiasis by Dr. David Kaufman, with an emphasis on antifungal prophylaxis. Finally, Dr. William Steinbach focuses on the unique clinical features of pediatric aspergillosis and reviews key treatment recommendations. Each of the three articles also brings forth the views of infectious disease thought leaders and clinicians dedicated to the study of pediatric fungal infections.

We are grateful to the authors, who formed the faculty for this CME-accredited educational activity designed to meet the educational needs of pediatricians, infectious disease specialists, general practitioners, and other health-care providers involved in the care and management of pediatric patients with invasive fungal diseases. The articles are based in part on a closed roundtable meeting that was held on April 30, 2009, in New York, NY, USA, which is available as a webinar on www.doctorfungus.org.

We would like to acknowledge Merck & Co., Inc. for providing the educational grant in support of this publication. However, the views expressed are entirely those of the authors. The articles each underwent CMRO's standard, rigorous peer-review process. In addition, the reader is directed to the Program Information, including the CME accreditation statement, and financial disclosures available on page 1755–1760.

Finally, the joint sponsors of this activity, Postgraduate Institute for Medicine and Global Education Exchange, LLC., value your feedback. At the conclusion of this activity, please take the time to complete and return the evaluation form and the CME assessment. Your opinions are important in assessing the effectiveness of this educational activity and in guiding the development of future programs.

Program information

Invasive fungal infections: case-based presentation in pediatric patients

Release Date: July 2010

Expiration Date: July 31, 2011

Estimated time to complete the activity: 1 hour, 45 minutes

Jointly sponsored by Postgraduate Institute for Medicine and Global Education Exchange, LLC.

This activity is supported by an educational grant from Merck & Co., Inc.

Program description

Invasive fungal infections are a major source of morbidity and mortality in immunocompromised children and neonates, particularly in preterm infants. Neonates and pediatric patients have traditionally been underrepresented in clinical trials. Consequently, there is a paucity of pediatric clinical data; many therapeutic decisions in children are often extrapolated from clinical data obtained from adult patients. While many aspects of invasive mycoses are similar between adults and children, there are important differences between the two with respect to the epidemiology of different fungi, their clinical presentations, and the pharmacokinetic parameters of various antifungal agents, such that extrapolations may not always be justified or safe. Furthermore, neonates are so vastly different from older children and adults that they need to be considered separately. Recently, a large pediatric phase 3 clinical trial was concluded and others like it are on the way, which will provide evidence-based, more effective therapeutic strategies for pediatric patients.

This case-based publication will focus on the pathogenesis, diagnosis, and state-of-the-art treatment of invasive candidiasis and aspergillosis in pediatric patients. This evidence-based update will provide the clinician with a rational approach to the management of systemic fungal infections.

Learning objectives

- Describe the diagnostic workup in neonates and children with invasive fungal infections

- Outline preventive measures and the role of prophylaxis and empiric therapy in neonatal candidiasis
- Specify management strategies for invasive fungal infections in pediatric patients
- Discuss the clinical application of the new developments in antifungal therapy

Target audience

This activity has been designed to meet the educational needs of pediatricians, infectious disease specialists, general practitioners, and other healthcare providers involved in the care of pediatric patients with invasive fungal diseases.

Accreditation statement

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of Postgraduate Institute for Medicine (PIM) and Global Education Exchange, LLC. (GLOBEX). PIM is accredited by the ACCME to provide continuing medical education for physicians.

Credit designation

Postgraduate Institute for Medicine designates this educational activity for a maximum of 1.75 AMA PRA Category 1 Credit(s)TM. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Faculty

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Disclosure of conflicts of interest

The Postgraduate Institute for Medicine (PIM) assesses conflict of interest with its instructors, planners, managers and other individuals who are in a position to control the content of CME activities. All relevant conflicts of interest that are identified are thoroughly vetted by PIM for fair balance, scientific objectivity of studies utilized in this activity, and patient care recommendations. PIM is committed to providing its learners with high quality CME activities and related materials that promote improvements or quality in healthcare and not a specific proprietary business interest of a commercial interest.

The faculty reported the following financial relationships or relationships to products or devices they or their spouse/life partner have with commercial interests related to the content of this CME activity:

Name of Faculty	Reported Financial Relationship
David A. Kaufman, MD	No real or apparent conflicts of interest to report
William J. Steinbach, MD	<i>Consulting Fees & Contracted Research:</i> Astellas, Merck & Co., Inc. <i>Fee for non-CME services:</i> Merck & Co., Inc., Pfizer, Inc.
Theoklis Zaoutis, MD, MSCE	<i>Contracted Research:</i> Merck & Co., Inc. <i>Fee for non-CME services:</i> Cephalon

The planners and managers reported the following financial relationships or relationships to products or devices they or their spouse/life partner have with commercial interests related to the content of this CME activity:

Name of Planner or Manager	Reported Financial Relationship
Meri D. Pozo, PhD	No real or apparent conflicts of interest to report
Jan Hixon, RN, BSN, MSN	No real or apparent conflicts of interest to report
Trace Hutchison, PharmD	No real or apparent conflicts of interest to report
Julia Kirkwood, RN, BSN	No real or apparent conflicts of interest to report
Samantha Mattiucci, PharmD	No real or apparent conflicts of interest to report
Jan Schultz, RN, MSN, CCMEP	No real or apparent conflicts of interest to report

Disclosure of unlabeled use

This educational activity may contain discussion of published and/or investigational uses of agents that are not indicated by the FDA. Postgraduate Institute for Medicine (PIM), Global Education Exchange, Inc. (GLOBEX) and Merck & Co., Inc. do not recommend the use of any agent outside of the labeled indications.

The opinions expressed in the educational activity are those of the faculty and do not necessarily represent the views of PIM, GLOBEX and Merck & Co., Inc. Please refer to the official prescribing information for each product for discussion of approved indications, contraindications, and warnings.

Method of participation

There are no fees for participating and receiving CME credit for this activity. During the period July 2010 through July 31, 2011, participants must (1) read the learning objectives and faculty disclosures; (2) study the educational activity; (3) complete the post-test by recording the best answer to each question in the answer key on the evaluation form; (4) complete the evaluation form; and (5) fax the evaluation form with answer key to Postgraduate Institute for Medicine. A statement of credit will be issued only upon receipt of a completed activity evaluation form and a completed post-test with a score of 70% or better. Your statement of credit will be mailed to you within three weeks.

Media

Journal supplement.

Disclaimer

Participants have an implied responsibility to use the newly acquired information to enhance patient outcomes and their own professional development. The information presented in this activity is not meant to serve as a guideline for patient management. Any procedures, medications, or other courses of diagnosis or treatment discussed or suggested in this activity should not be used by clinicians without evaluation of their patient's conditions and possible contraindications on dangers in use, review of any applicable manufacturer's product information, and comparison with recommendations of other authorities.