



Fifth Decennial

**International Conference
on Healthcare-Associated
Infections March 18-22, 2010**



[Main Menu](#) [Browse by Day](#) *or* [Program](#) [Author](#) [Keywords](#)

227 Zygomycosis Outbreak Associated with Hospital Linens

Friday, March 19, 2010

Grand Hall (Hyatt Regency Atlanta)

Jonathan Duffy, MD, MPH, CDC, Atlanta, GA

Julie Harris, PhD, MPH, CDC, Atlanta, GA

Emily Newhouse, CDC, Atlanta, GA

Arunmozhi Balajee, PhD, CDC, Atlanta, GA

Judith Noble-Wang, PhD, Division of Healthcare Quality Promotion, CDC, Atlanta, GA

Lynne Sehulster, PhD, CDC, Atlanta, GA

Sarah Gilbert, CDC, Atlanta, GA

Michele Howard, MS, CDC, Atlanta, GA

Heather O'Connell, CDC, Atlanta, GA

Erin Stanley, MPH, Louisiana Office of Public Health, Metairie, LA

Carol Rao, MS, ScD, CDC, Atlanta, GA

Tom Chiller, MD, MPH, CDC, Atlanta, GA

Background: Zygomycosis is an invasive fungal infection caused by mucormycetes (formerly zygomycetes), a ubiquitous group of molds including *Rhizopus* species. Infections are rare, usually occur in people with an underlying medical condition, can affect various body sites, and have a case fatality rate of > 50%.

Objective: We investigated an outbreak of *Rhizopus* among Hospital A patients to identify the environmental source and prevent further infections.

Methods: A case was defined as illness consistent with mucormycete infection confirmed by culture or histopathology. Retrospective case-finding was performed by reviewing hospital databases starting from 1993. Case-patient medical records were reviewed for clinical course and exposure to items and locations within the hospital. Environmental samples were collected from air and surfaces at Hospital A and the laundry facility of its linen supply company. Fungal species isolated from patients and the environment were identified and subtyped using DNA sequencing and Inter Simple Sequence Repeat (ISSR) methods, respectively.

Results: Nine cases were diagnosed at Hospital A since 1993, with six cases temporally clustered from August 2008 to July 2009. One of these was a community-associated case of meningoenophalitis, but five were hospital-associated cutaneous

infections in patients ranging in age on admission from 0 days to 13 years. Hospital length of stay at first sign of infection was 20 – 51 days. Admitting diagnosis categories were: cardiac (2), hematologic (2), preterm birth (1). All five had established risk factors for zygomycosis, including acidosis (4) and bone marrow transplantation (1). Cases occurred on different wards served by different air handling systems. Hospital linens (sheets, pillowcases, gowns) were the only items common to all the cases. Environmental cultures taken at Hospital A demonstrated *Rhizopus* species from 26 (40%) of 65 swabs of clean linens and areas in contact with clean linens, and from 1 (4%) of 25 samples from items not in contact with linens. Hospital A changed linen supply companies, replaced all linens, and disinfected linen storage areas. Hospital air and surface cultures (n=29) taken 3 weeks later were negative. All specimens available for testing (13 environmental and 4 patient) were identified as *Rhizopus oryzae*. One patient isolate was available for subtyping and was genotypically related to an isolate from a clean linen transport cart. Non-*Rhizopus oryzae* mucormycetes were recovered from 7 (88%) of 8 surface cultures from the linen company laundry facility.

Conclusions: Hospital linens likely acted as a vector bringing *Rhizopus* in contact with susceptible patients in this outbreak. *Rhizopus* might have contaminated linens at the laundry facility or during delivery to the hospital. Hospital linens should be laundered, shipped, and stored in a manner that minimizes exposure to environmental contaminants.

See more of: Fungal Infections

See more of: Abstracts

<< Previous Abstract | Next Abstract >>