Committee to reduce infection deaths

RID GUIDELINES FOR REDUCING THE RISK OF CANDIDA AURIS

Betsy McCaughey, Ph.D.

The Committee to Reduce Infection Deaths is providing guidance to hospitals, sub-acute facilities, and ambulatory facilities on meeting the challenge of Candida auris, an emerging drug-resistant yeast that causes bloodstream infections, wound infections, and ear infections.

Candida auris has all the dreaded characteristics of a superbug.

1. It has high levels of resistance to major anti-fungal drug classes. Treatment options are limited, and mortality rates for Candida auris invasive infections are as high as 45%.
2. It spreads rapidly in healthcare settings, because of its ability to colonize patients, who then shed it, especially from their skin, onto surfaces and fabrics, where it can persist for weeks. That's why although most other Candida species do not spread from patient to patient, Candida auris does.
3. Success in decolonizing patients has been very limited so far.
4. It is also difficult to eradicate Candida auris from healthcare facilities using customary, manual cleaning methods.

For all the above reasons, any healthcare institution confronting Candida auris should swing into action immediately with a rigorous three-pronged approach: Screening-isolation-and disinfection.

SCREENING INCOMING HIGH-RISK PATIENTS FOR CANDIDA AURIS.

The following patients should be screened for Candida auris on admission:

1. Patients treated in a healthcare facility outside the U.S. anytime in the previous year in a country where Candida auris cases have been reported. Check the CDC website for a list of countries.
2. Patients coming from a facility in the U.S. known to have Candida auris.
3. Patients who have spent significant time in a healthcare facility prior to admission, including a long term care facility.
4. In addition, data indicate other risk factors including recent abdominal surgery, presence of a central venous catheter, ventilators or other invasive devices, and recent treatment with anti-fungal medications.

How to screen? Unlike most Candida species, Candida auris is commonly found on the skin, especially in the axilla and groin, as well as in nares. Therefore, in addition to blood specimens to detect active infection, swabs should be taken of these sites. Patients without active infection are often found to be colonized in these sites. COLONIZED PATIENTS SPREAD CANDIDA AURIS, EVEN WITHOUT ACTIVE INFECTION.

The two big challenges in screening are accuracy and speed. Candida auris is often misidentified by laboratories.

Rapid results are also essential, in order to isolate colonized and infected patients and immediately put into place precautions to prevent the pathogen from spreading.

The U.S. FDA has approved the first rapid test to identify Candida auris. On April 20, the FDA announced it is permitting the Bruker MALDI Biotyper Ca System to be marketed for the identification of C. auris. It can produce results in less than one hour and appears to be 100% accurate, according to the FDA press release. “The FDA has confidence in this technology and recognized the need to rapidly address outbreaks both for C. auris and other pathogenic microorganisdms,” Donald St. Pierre, acting director of the FDA’s Office of In Vitro Diagnostics, said in the release.

RID can provide a list of institutions and labs in the Northeast that have this system.

Without rapid testing, any high risk patient should be pre-emptively isolated on admission while waiting test results, if possible.

Any healthcare facility that receives a positive Candida auris test on a patient or suspects a patient has it should contact state and local health authorities and the CDC.

The CDC's AR Lab Network will also perform identification and antifungal susceptibility testing free of charge. That of course, takes time, to ship the isolates to the CDC , wait for them to grow, and then wait for results. . Visit the CDC website listing, How AR Lab Network Works.

Long term care facilities and rehabilitation facilities receiving patients from acute care hospitals should request a system of testing and flagging any patient who has tested positive for Candida auris BEFORE TRANSFER.

ISOLATING COLONIZED AND INFECTED PATIENTS

A patient known to be colonized or infected with Candida auris should be placed in a single room, and contact precautions should apply, including shoe covers. Research shows that Candida auris will spread to many places in the room, not just high-touch surfaces like bedrails. It has been found on window sills and curtains far out of the patient's reach. Shared and mobile equipment brought into an affected patient's room also become contaminated, including infusion pumps, blood pressure cuffs, electrocardiogram leads, and temperature probes. C. auris can last on plastic surfaces for at least two weeks.

THE SAME PRECAUTIONS ARE NEEDED FOR COLONIZED AS FOR INFECTED PATIENTS.

The challenge for long term care facilities is that patients colonized with Candida auris can persist in that colonized state indefinitely. There is little evidence yet of an effective de-colonization regimen. Diluted 4% chlorhexidine gluconate products do not decolonize patients with Candida auris. The CDC recommends that long term care facilities permit colonized patients to leave their rooms and participate in activities, as long as they wash their hands. RID recommends against this.

CONTACT TRACING:

Patients who come in close contact with an infected or colonized patient are at risk and should be screened. CDC and state investigators used swab tests of the groins and axilla of close contacts of patients with Candida auris and found that 12% ,

primiarly patients treated on the same wards as the infected patients, became colonized with Candida auris. CDC Morbidity and Mortality Weekly Report, May19, 2017)

CLEANING AND DISINFECTION

Several customary hospital cleaning products, including quaternary ammonia, do not work against Candida auris. Hydrogen peroxide based products appear effective.

Investigators battling an outbreak in the UK found that cleaning three times a day with chlorine products and then performing a terminal cleaning with chlorine detergent, following by automatic room disinfection with hydrogen peroxide misting, ended the outbreak.

Ultra violet light disinfection equipment does not appear as effective against Candida auris as other pathogens and requires prolonged exposure. Pulsed xenon ultraviolet kills Candida auris on steel plates in laboratory trials.

The CDC recommends that facilities rely on cleaning products labelled effective against Clostridium difficile. A CDC Morbidity and Morality Weekly Report found that bleach (sodium hypochlorite) eradicated environmental contamination on surfaces tested. (MMWR May 19, 2017)

However the continued spread of Candida auris in institutions it has invaded suggests that relying on manual cleaning techniques, no matter what products are used, is not succeeding in stopping the spread of Candida auris. Human fallibility is part of the problem. Hospitals and other facilities need to consider high-tech disinfection methods.

LIMIT TRAFFIC IN AND OUT OF AFFECTED PATIENTS' ROOMS

Because of the high mortality rate from Candida auris and the difficulty of removing it once it becomes embedded in a facility, additional precautions need to be considered.

For example, limiting the traffic of staff into and out of the room, including food service and environmental services staff. Candida auris can be picked up on the shoes of staff and carried facility-wide, as personnel empty waste baskets or deliver and pick up food trays. This needs to be avoided, by using disposable shoe covers and restricting traffic...

Resources:

The best overview is Kaitlin Forsberg, Kate Woodworth, Maroya Walters, Elizabeth L. Berkow, Brendan Jackson, Tom Chiller, Snigdha Vallabhaneni, "Candida auris: The recent emergence of a multi-drug resistant fungal pathogen," Medical Mycology, volume 57, issue 1, Janauary 2019. The RID guidelines are substantially reflective of this important overview.

CDC website

On the use of hydrogen peroxide misting as a high-tech room disinfection, see S. Schelenz, F. Hagen, J.L. Rhodes, A. Abdolrasquli, A. Chowdharya, A. Hall, L. Ryan, J. Shackleton, R. Trimlett, J.F. Meis, and D. Armstrong Jones, M.C. Fisher, "First Hospital outbreak of the globally emerging Candida auris in a European hospital," Antimicrobial Resistance and Infection Control, October, 2016.

For information on the newly approved Bruker rapid testing,
contact www.bruker.com 201-468-4805