Candida auris: A Fungus Among Us

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What is *Candida auris*?

- **CANDIDA AURIS: EPIDEMIOLOGY**

- • First isolated in 2009 from ear discharge of a female patient in Japan; now reported in >45 countries worldwide
- • Healthcare-associated outbreaks common
- • Mortality ~65%-70%
- • Primarily infects the usual spectrum of compromised individuals including those with uncontrolled diabetes mellitus, chronic renal diseases, neutropenia, and those on immunosuppressive therapy, broad-spectrum antimicrobials, and those with indwelling medical devices, or at extremes of age.
- • Causes an array of human diseases ranging from fungemias, surgical/nonsurgical wound infections, urinary tract infections, meningitis, myocarditis, skin abscesses, to bone infections.

- Bandara N, Smaranayake L. Med Mycology 2022;60:myac008; Lone S, Ahmad A 2019;62:620-637; Garcia-Bustos V, et al.
- Microgoranisms 2021;9:2177

Epidemiologic Characersitics

- > 75% of isolates from blood
- Age range 21-96 years, 56% male
- Extensive healthcare exposure (acute care hospitals, LTACHs, nursing homes with ventilator units)
- Multiple underlying medical conditions and indwelling devices
    - Tracheostomy tube, central venous catheter, gastrostomy tube

Definition of terms

- MDRO- Multi drug resistant organisms
- C.auris- Candida auris
- Infection- It occurs when a pathogen invades a body site and causes signs and symptoms of disease
- Colonization- an organism can be found in or on the body but its not causing any symptoms or disease

Candida auris

- Candida auris (C. auris) is a type of yeast/fungus that can cause severe illness
- It is often resistant to antifungal treatments
- It spreads very easily in healthcare settings through direct contact
- It is hardy in the environment and can survive for weeks on surfaces
- Patients may be colonized with C. auris and asymptomatic

Why the hype with C.auris?

Candida auris is an emerging multi-drug resistant yeast that can cause severe invasive infections associated with high mortality

Candida auris can survive on surfaces and medical equipment, spread from patient to patient and lead to outbreaks in healthcare settings

Risk of infection or colonization with Candida auris is greatest among our most vulnerable patients. These are patients with:

- a.) extensive healthcare exposures
- b.) infected or colonized with another MDRO
- c.) invasive medical devices

C. auris colonization lasts for years and may be indefinite

C. auris- Symptoms

Symptoms of a C. auris infection depend on where in your body the fungus infects. Some symptoms could include:

- Fever
- Chills
- Lethargy (extreme tiredness)
- Low blood pressure
- High heart rate (tachyardia)
- Low body temperature (hypothermia)
- Pain, pressure or feeling of fullness in ears

(C. auris ear infection)

Since many people who get C. auris infections are already seriously ill, symptoms of C. auris may not be noticeable

Risk Factors

- Immunosuppressive conditions
- Infection/colonization with other MDROs
- Recent antibiotic or antifungal use
- Medical device use-
  - Tracheostomy/ Ventilator
- Frequent or prolonged stays in healthcare facilities, especially vSNFs and LTACHs
  - Outpatient exposure not usually of concern
- Not a threat to the general public or healthy individuals

Can cause invasive infections and high mortality

8% of colonized patients have positive clinical specimens of which half are blood stream infections

Mortality of invasive infections is ~40% within the first 30 days

Infection vs. Colonization

Infection

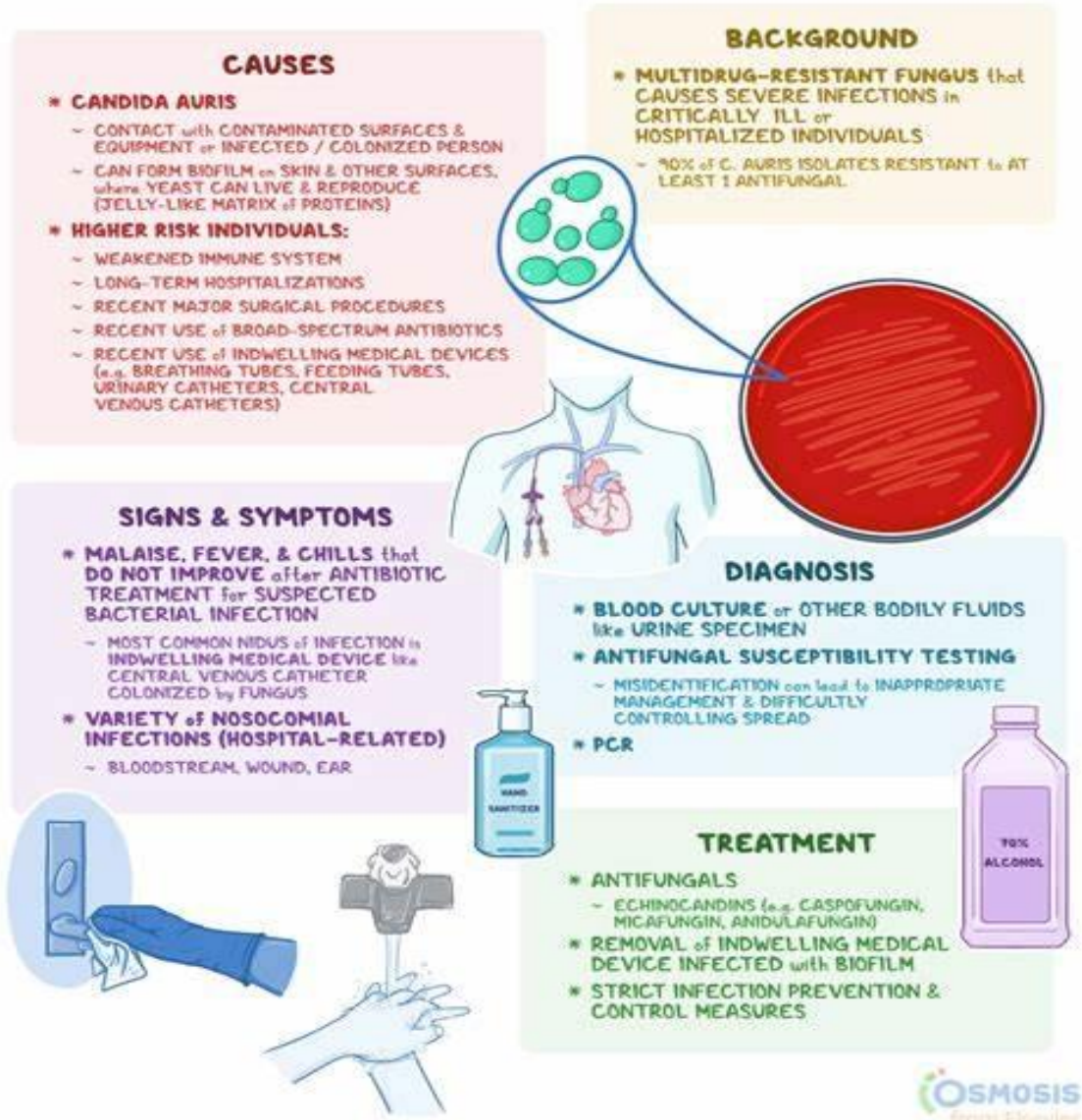
- Presence of signs and symptoms
- Bloodstream, wound, and ear infections have been documented
    - Lung and bladder infections
- Treatment is usually necessary
- Requires use of Transmission-based Precautions

Colonization

- No signs or symptoms detected or reported
- May occur on skin, nares, oropharynx, rectum, and other body sites
- No treatment necessary
- Requires use of Transmission-based Precautions

Colonization

Basic Facts about *Candida auris*



Florida Rates

Florida is currently ranked third in the U.S. for the most cases of Candida auris, a deadly, drug-resistant fungus that spreads in health care facilities. Map data 3/2021

Limited Options for Antifungal Medications to Treat

- Azoles (Ex. Fluconazole, Voriconazole, Posaconazole)
- Echinocandins (Ex. Micafungin, Caspofungin, Anidulofungin)
- Polyenes (Ex. Amphotericin B)

How do we manage C Auris in the Rehab Setting?

- Patient remains on contact isolation throughout the duration of stay
- Correct PPE board with Bleach wipes
- Surveillance of room ensuring staff are using PPE
- Proper education to both nursing and therapy teams
- Communication with family members on our standards and working with family to provide caregiver training safely

Hand Hygiene in facilities where C. auris occurs

- Use Alcohol-Based Hand sanitizer prior to and after performing any hands-on activity with resident
- This includes before and after donning and doffing gloves
- Recommendation to use soap and water if hands are visibly soiled, before eating and after using the restroom

Infection Prevention and Control Measures

- Hand Hygiene
- PPE Use- transmission based precautions and room placement
- Environmental Cleaning and Disinfection
- Auditing- facilitating adherence to IPC measures
- Communication- both internal (staff, visitors, vendors) and external (patient transfer)

The Paradigm has Changed

- *Candida auris* thrives on skin and surfaces
- Contaminates patient rooms
- Capable of serious infections
- Antifungal resistance is the norm

Contact Precautions

Wash Hands

Wear Gown

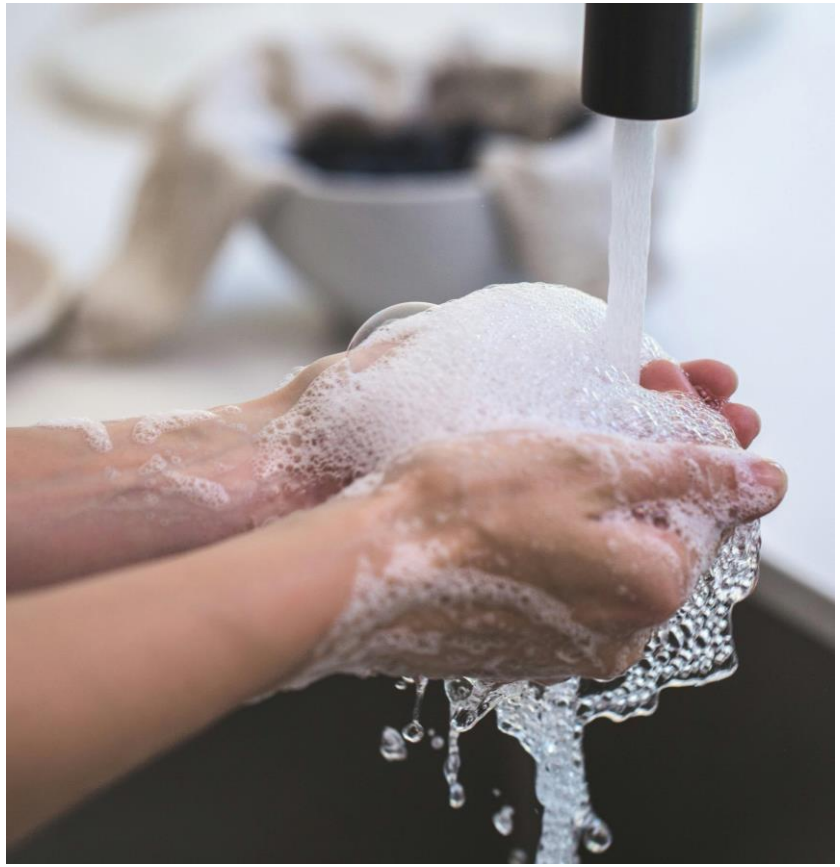
Wear Gloves

Communication

- Use appropriate and legible signs for precautions
- Maintain an up-to-date list of residents meeting criteria for precautions
- Notify internally (unit, floor) and externally (hospital, doctor's office, dialysis clinics) about a resident's MDRO status and precautions recommended to be used

What can family members do to help keep C. auris from spreading?

- Clean hand thoroughly before and after touching each other or area around patient
- Practice good hand washing hygiene at home
- Wear Disposable gloves



CLEANING PRACTICES

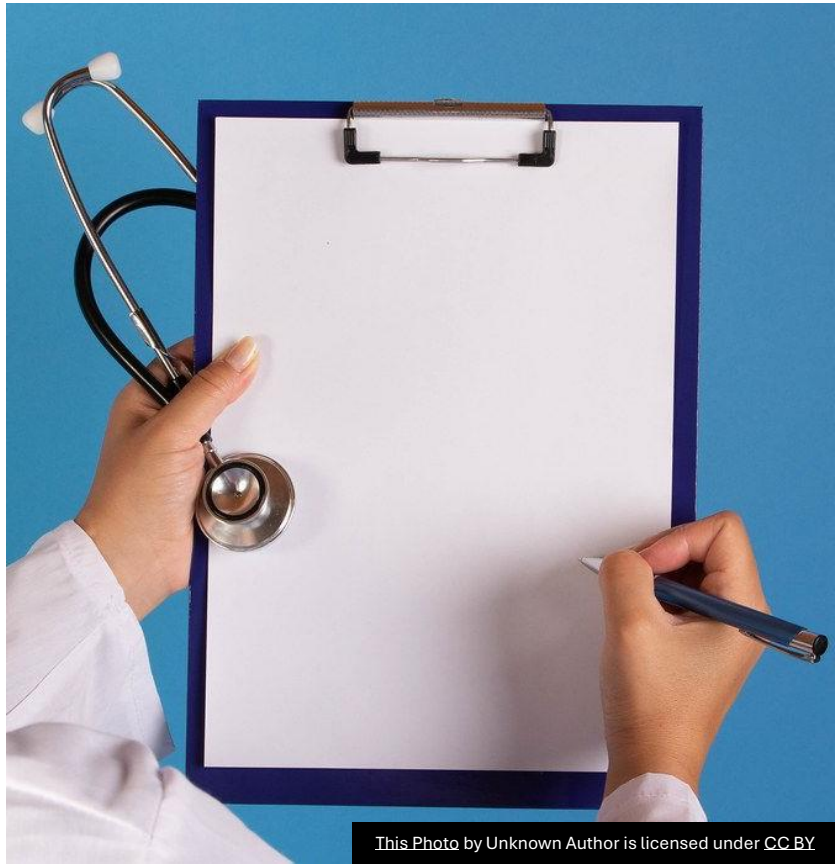
- **Confirm that EPA list P products are being used on the unit. (List P: Antimicrobial Products Registered with EPA for Claims Against Candida Auris)**
- **Perform additional black light/UV spot audits to provide object measurement of cleaning thoroughness**
- **Declutter patients' rooms**

YOU CAN:
To reduce spread to other patients, healthcare personnel should use precautions when caring for patients with C. auris, which may include:

- C. auris is a class A reportable disease and should be Reported to FDOH/HAI program for guidance and support
- Placing the patient on isolation in a different room
- Having healthcare personnel or other caregivers wear gowns and gloves during patient care
- Cleaning the room with products from EPA List P
- Having family members and healthcare personnel clean their hands thoroughly after visiting the patient
- The patient may also be encouraged to wash their hands often

Auditing

- Monitor adherence to infection prevention and control (IPC) practices
- IPC practices include hand hygiene, putting on/taking off(don/doff) PPE, environmental surface and equipment cleaning and disinfection
- Can be either paper or electronic documentation
- Provide prompt (real-time) regular feedback on adherence and related outcomes to healthcare personnel and facility leadership



AUDITS TO IDENTIFY INFECTION CONTROL BREACHES

Focus on additional hand hygiene and PPE audits

Consider who can be recruited to assist? Unit secretaries, interns, clinical coordinators

Environmental cleaning audits:

Black light audits/UV spot audits

Enhanced environmental cleaning instrument logs

Patient Tracking and Discharge Planning

DO NOT DELAY DISCHARGES AND TRANSFERS BASED ON PENDING SCREENING RESULTS

IMMEDIATELY INFORM RECEIVING FACILITIES OF POSITIVE SCREENING RESULTS

EDUCATE PATIENTS WITH POSITIVE SCREENING RESULTS ABOUT C. AURIS

DISCUSSION:

- Junior Thibodaux was admitted to ICU. He underwent multiple complicated cardiac procedures and received multiple antibiotics. He has a tracheostomy and is ventilator dependent.
- He was not initially on any isolation precautions. He had 2 roommates during the 1st week of admission to the step down unit.
- On day 7 from admission, a sputum specimen revealed Carbapenem resistant enterobacteriaceae (CRE). On hospital day 10 Candida auris identified in a blood culture.

DISCUSSION:

Clotile Boudreaux was admitted to an acute care hospital from a SNF unit. The Infection Prevention team has been notified by the micro lab that a blood culture result shows Candida auris from this patient, collected on the 7th day of admission. As the IP, you had read statewide alerts about C.auris and are concerned about an outbreak at your facility. You wonder what you should do about this single case (if anything)?.....

References

- Bandara N, Smaranayake L. Med Mycology 2022;60:myac008; Lone S, Ahmad A 2019;62:620-637; Garcia-Bustos V, et al.
- Florida Department of Health. Candida Auris rates as of March 2021 Map
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- Weber, D. (2022) Emerging Infectious Disease: Candida Auris. The University of North Carolina at Chapel Hill