
Candida auris in newborn infants

Frequently Asked Questions

1. What is *Candida auris*?

Candida auris is fungal (yeast-like) pathogen within the *Candida* genus, which has caused healthcare-associated outbreaks of serious infections on several continents. This pathogen can live on the skin, inside the human body (e.g. in the gut) or in the environment. *C. auris* causes serious infections such as bloodstream infections, meningitis, bone infections, burns/wound infections and urinary tract infections. *C. auris* infections are difficult to treat because it is resistant to important antifungal medicines: Most *C. auris* isolates are resistant to fluconazole, an important first-line antifungal medicine. In some parts of the world, more than 40% of isolates can be resistant to two or more major classes of antifungals. Patients with *C. auris* infections are also at high risk of dying, with a reported in-hospital mortality of up to 70%.

2. Who is at risk for an invasive *C. auris* infection?

C. auris can cause infections among hospitalised patients of all ages, including newborn infants. Premature neonates in particular, are at a high risk of *Candida* bloodstream infections. Risk factors for *C. auris* bloodstream infection among neonates are likely similar to those of infections with other *Candida* species and include a very low birth weight, prematurity, central venous catheter (CVC) use, necrotizing enterocolitis, total parenteral nutrition, mechanical ventilation, abdominal surgery and prior or prolonged broad-spectrum antibiotic use, among others. A prolonged stay in hospital, between 3-4 weeks, would also likely put a newborn infant at increased risk to develop *C. auris* infection.

3. Where do *C. auris* infections occur in South Africa?

Based on current surveillance data collected by the NICD, *C. auris* is the second most common cause of *Candida* bloodstream infections in private-sector hospitals and the fourth most common cause in public-sector hospitals. Most *C. auris* infections have occurred in Gauteng province. Large on-going outbreaks have been reported at several Johannesburg and Pretoria hospitals from 2015 onwards, with most cases occurring in private-sector facilities. The first cases of *C. auris* bloodstream infection in neonatal units were reported in August 2017.

4. How is *C. auris* transmitted?

Transmission patterns of *C. auris* have not been well established. However, *C. auris* is known to contaminate the hospital environment and areas surrounding infected or colonised patients. Spread of *C. auris* among patients is most likely through the hands of healthcare workers and/ or contaminated materials such as shared equipment, linen and hospital furniture.

5. **What are the signs/ symptoms of *C. auris* infections among neonates?**

Neonates with *C. auris* bloodstream infection may not display clear symptoms/ signs of sepsis. Signs of suspected bloodstream infection may include lethargy, poor feeding, glucose instability, a low platelet count, episodes of apnoea or an increased need for respiratory support.

6. **How are *C. auris* infections diagnosed?**

Infants suspected of having *C. auris* bloodstream infection should have a blood culture specimen taken as soon as possible. *C. auris* is difficult to identify in the routine diagnostic laboratory and most laboratory methods have misidentified this organism as other fungi. If a local laboratory is unable to identify *C. auris* accurately, the isolate should be referred for further confirmatory testing. Isolates may be sent to the NICD for confirmatory tests.

7. **How are *C. auris* infections treated among neonates?**

For neonates or infants less than 2 months old, amphotericin B deoxycholate should be used as first-line treatment of invasive infections. As *C. auris* is almost uniformly resistant to fluconazole, this agent should not be used for treatment. Fluconazole prophylaxis is not recommended in South African neonatal units where azole-resistant *Candida parapsilosis* is already endemic. Source control is very important: where feasible, every effort should be made to remove devices such as CVCs and umbilical catheters. Antifungal treatment duration is standard as for infections caused by other *Candida* species; treatment for candidaemia should be continued for 14 days after documented clearance of *Candida* from the bloodstream (one blood culture per day until negative) and symptoms related to this infection have resolved. There is no evidence for combination antifungal therapy at present for *C. auris* infections. Consultation with a paediatric infectious disease specialist or clinical microbiologist is recommended.

8. **How can *C. auris* infections be prevented in neonatal units?**

NICD recommends that babies with confirmed *C. auris* invasive disease/ colonisation be isolated or cohorted, if possible. Units with current outbreaks should ensure strict adherence to infection prevention and control (IPC) protocols, particularly hand antisepsis. Thorough cleaning of the incubator/ cot is warranted when an infected/ colonised baby leaves the unit. If an infected/ colonised baby is referred to another unit, the receiving team should be notified. The best way to prevent the spread of *C. auris* is to practice effective hand hygiene using soap and water, followed by an alcohol hand rub, before and between patient care activities. In addition, contact precautions such as wearing gloves and aprons are recommended.

9. **Where can I find more information?**

Detailed interim guidance for management of *Candida auris* infections in South African hospitals are available on the NICD website: www.nicd.ac.za under 'C' in 'Diseases A-Z'.

For Clinical or infection control advice to health care professionals only, call or email Dr Nelesh Govender 011-555-0353 / neleshg@nicd.ac.za or Dr Erika van Schalkwyk: 011-386-6452 / erikab@nicd.ac.za or the NICD Doctor-on-call: 082 883 9920 (for use by healthcare professionals only).

For laboratory-related enquiries call the Centre for Healthcare-Associated Infections (HAIs), Antimicrobial Resistance (AMR) and Mycoses: 011-555-0381