EDITORIAL

Candida auris is Coming

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Unlike its near homophone—*S. aureus, C. auris* gets its name from a more humble source. It is so named because it was first isolated from the external auditory canal of an elderly lady in Tokyo in 2009.[1] Reports of cases of *C. auris* have steadily increased since then.

Curiously, five different geographic clades of *C. auris* which are genetically distinct have emerged almost simultaneously across the world.[2] There has been no satisfactory explanation for this phenomenon yet. *C. auris* has now been isolated in over 40 countries across the world. Every continent except Antarctica has reported cases of *C. auris*.

The first report of *C. auris* in India was published in 2013,[3] and the cases reported in India have been rapidly multiplying since. Despite this, *C. auris* has usually ranked number 4 or 5 in the order of frequency among various *Candida* species identified from most hospitals in our country. *C. tropicalis*, *C. albicans*, and *C. parapsilosis* were the top three *Candida* species identified from the ICUs in our country according to the annual report published by the Indian Council of Medical Research in early 2021[4] (*C. glabrata* and *C. auris* were joint number 4).

In this issue of the IJCCM, Prayag et al.[5] have reported that *C. auris* was the most common *Candida* species isolated in their institution. Forty-three percent of all the episodes of candidemia in their institution were due to *C. auris*. This is a matter of great concern.

Unlike *C. tropicalis* and *C. parapsilosis* (which it seems to be replacing), *C. auris* is usually multidrug resistant. *C. auris* is genetically similar to *C. lusitaniae* and *C. haemulonii* and this could be the reason for its multidrug resistance. Though *C. auris* is less virulent than *C. albicans*, it is associated with higher mortality. This could be probably because patients do not get appropriate therapy in time. Studies have also revealed that *C. auris* is capable of escaping the innate immune response, thus contributing to the higher mortality.[6] In the study by Prayag et al., however, the mortality associated with *C. auris* though higher than that with *C. albicans* was similar to that with *C. parapsilosis* and *C. tropicalis* (around 30%).

C. auris has a fondness for human skin, especially the axillae and groin. These colonies can remain on the skin for several months, if not years. Unlike most other *Candida* species, *C. auris* is easily spread from person to person. At least in this respect, it behaves like its near-namesake *S. aureus* rather than like a *Candida*. *C. auris* can also persist on both moist and dry surfaces for several weeks and can become ubiquitous in a hospital quite easily.

Thus, both asymptomatic carriers and contaminated surfaces can easily cause outbreaks of *C. auris* in hospitals. Regular environmental cleaning is therefore very important. Sodium hypochlorite and hydrogen peroxide are active against *C. auris,* but the quaternary ammonium compounds are not. Strict contact isolation measures should be instituted for both colonized and infected patients. The efficacy of decolonization of these patients with chlorhexidine and/or topical antifugal creams is not yet established.[7]

This study by Prayag et al. was conducted between December 2019 and July 2021 when the coronavirus disease-2019 (COVID-19) pandemic was raging. A higher incidence of nosocomial infections by multiresistant bugs was reported across a majority of ICUs dealing with COVID-19 in our country. This had to do with the breakdown in infection control practices in these COVID ICUs. Unfortunately, this was not the explanation for the high incidence of *C. auris*. Approximately only 10% of the patients infected were from the COVID ICU (personal communication with Dr Prayag). The fact that around 90% of the patients infected with *C. auris* were from non-COVID areas makes the finding even more disturbing. The only risk factor that was common to nearly all these patients was the receipt of antibiotics. This again emphasizes the role of antimicrobial stewardship.

Though this was a single center study, the institute in which it was conducted is representative of most of the tertiary care ICUs in our country and is likely to mirror the situation in many other ICUs in India. It is also quite likely that many institutions are missing cases of *C. auris* because labs quite often misidentify *C. auris* for other *Candida* species (most commonly *C. haemulonii*).[8] Though it might not be practical to have MALDI-TOF in each lab, it is important for tertiary care hospitals to ensure that the library in their automated culture systems is updated to include *C. auris*.

The only bright spot in this bleak article is that all the guidelines for dealing with candidemia viz—removal of central line, ID consultation, repeat blood cultures, and dilated fundus examination—were followed in a majority of the patients. The institution has set a benchmark that hopefully other institutions in our country will follow.

"Winter is coming" was the motto of House Stark in the "Game of Thrones." It is a term used by fans of the show to signify that something bad is going to happen. This article by Prayag et al. should serve as a portent. Unless we really tighten up on active surveillance, infection control, and antimicrobial stewardship,[9] "winter" will come into our ICUs soon.

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References

1. Satoh K, Makimura K, Hasumi Y, Nishiyama Y, Uchida K, Yamaguchi H. *Candida auris* sp. nov., a novel ascomycetous yeast isolated from the external ear canal of an inpatient in a Japanese hospital. Microbiol Immunol 2009;53(1):41–44. DOI: 10.1111/j.1348-0421.2008.00083.x.
2. Lockhart SR, Etienne KA, Vallabhaneni S, Farooqi J, Chowdhary A, Govender NP, et al. Simultaneous emergence of multidrug-resistant *Candida auris* on 3 continents confirmed by whole-genome sequencing and epidemiological analyses. Clin Infect Dis 2017;64(2):134–140. DOI: 10.1093/cid/ciw691.
3. Chowdhary A, Sharma C, Duggal S, Agarwal K, Prakash A, Singh PK, et al. New clonal strain of *Candida auris*, Delhi, India. Emerg Infect Dis 2013;19(10):1670–1673. DOI: 10.3201/eid1910.130393.
4. Annual report: antimicrobial resistance research and surveillance network. January 2020 to December 2020. Division of Epidemiology and Communicable Diseases, ICMR.
5. Prayag PS, Patwardhan S, Panchakshari S, Rajhans PA, Prayag A. The Dominance of *Candida auris*: A Single-center Experience of 79 Episodes of Candidemia from Western India. Indian J Crit Care Med 2022;26(5):558–561.
6. Johnson CJ, Davis JM, Huttenlocher A, Kernien JF, Nett JE. Emerging fungal pathogen *Candida auris* evades neutrophil attack. mBio 2018;9(4):e01403–e01418. DOI: 10.1128/mBio.01403-18.
7. Forsberg K, Woodworth K, Walters M, Berkow EL, Jackson B, Chiller T, et al. *Candida auris*: the recent emergence of a multidrug-resistant fungal pathogen. Med Mycol 2019;57(1):1–12. DOI: 10.1093/mmy/myy054.
8. Vila T, Sultan AS, Montelongo-Jauregui D, Jabra-Rizk MA. *Candida auris*: a fungus with identity crisis. Pathog Dis 2020;78(4):ftaa034. DOI: 10.1093/femspd/ftaa034.
9. Spivak ES, Hanson KE. *Candida auris*: an emerging fungal pathogen. J Clin Microbiol 2018;56(2):e01588. DOI: 10.1128/JCM.01588-17.