

Candida auris: A Multidrug Resistant Fungus and an Emerging Cause of High Mortality

Candida auris was first reported in 2009 from Japan as a cause of otitis media and subsequently reports of blood stream infections emerged from Southeast Asia, India and Middle East. It was initially identified from Pakistan in 2015 when clinical isolates were sent to US Centers for Disease Control and Prevention (CDC) in the setting of an outbreak of invasive infections in what was being identified as *Saccharomyces* at one of the tertiary care centers in Karachi. This led to issuance of an alert to clinicians by CDC in June 2016.¹

Since its global emergence, *Candida auris* has been associated with invasive infections which are extremely difficult to treat and have high mortality with approximately sixty percent in-hospital mortality reported from centers worldwide.² The crude mortality rate from Pakistan was reported at 72 % in a recently published systematic review.³ The claim to fame of *Candida auris* is the fact that it is multidrug resistant unlike other candida species and is not only resistant to most azoles but displays variable susceptibility even to echinocandins and amphotericin B. Hence, treatment can be very challenging especially in resource limited settings.⁴

Candida auris is known to cause invasive infections mostly bloodstream infections (BSIs) and has been isolated from a variety of clinical specimens including bile, urine, pus and tissue culture. Among the risk factors for infection are underlying medical co-morbidities, immunocompromised state, use of invasive devices and exposure to health care facilities especially if patient had stay in intensive care unit. Moreover, the infections are known to occur after prior exposure to broad spectrum antimicrobials particularly antifungals.⁵ Alarming, *Candida auris* has been associated with ability to cause outbreaks in health care settings. This is being linked to its ability to persist on inanimate objects like mattresses, medical equipment and furniture that comes in contact of patients. It get transferred from these sites to the hands of the health care providers and this is the proposed mechanism of transmission in critical care settings. Hence, CDC has emphasized on good hand hygiene compliance in addition to strict standard and contact precautions as well as terminal cleaning and disinfection of rooms of infected patients with appropriate disinfectants in order to curb patient to patient transmission.^{4,6}

Candida auris has been known to harbor resistance to almost all classes of antifungals. Clinical isolates from different parts of the world including Pakistan were greater than 90 percent resistant to fluconazole and approximately 35 percent resistant

to amphotericin B.¹ Moreover, the species is known to develop resistance quite rapidly and hence continuous surveillance is required. Although the drug of choice is not clearly defined, empiric treatment with an echinocandin is recommended till susceptibility is available. This can be cost prohibitive in resource limited settings like Pakistan where availability of echinocandin is still a distant possibility for most centers leading to usage of Amphotericin B in such a scenario with variable success. Combination therapy has also been advocated by experts but data on this is scarce. Patients usually require close monitoring for signs of treatment failure and for de novo resistance on therapy. It is also imperative to have an antifungal stewardship program to discourage inappropriate use of antifungals and for early identification of *Candida auris* and implementation of contact precautions and isolation measures to minimize transmission.⁶

In conclusion, *Candida auris* is a deadly pathogen and requires concerted efforts on the part of health care providers, infection preventionists, medical microbiologists and infectious diseases specialists to contain its spread and prevent outbreaks in health care settings.

References

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