Isolation of Candida auris from Ear of Otherwise Healthy Patient, Austria, 2018

Shiva Pekard-Amenitsch, Agnes Schriebl, Wilhelm Posawetz, Birgit Willinger, Bettina Kölli, Walter Buzina

Author affiliations: AGES–Austrian Agency for Health and Food Safety, Graz, Austria (S. Pekard-Amenitsch, A. Schriebl); Private otorhinolaryngology practice, Graz (W. Posawetz); Medical University of Vienna, Vienna, Austria (B. Willinger); Medical University Graz, Graz (B. Kölli, W. Buzina)

DOI: https://doi.org/10.3201/eid2408.180495

The emerging pathogen Candida auris is isolated mostly from hospitalized patients and often shows multidrug resistance. We report on the isolation of this yeast in Austria from an outpatient’s auditory canal. The isolate showed good susceptibility against antifungals except for echinocandins; the patient was treated successfully with topical administration of nystatin.

The yeast Candida auris was first isolated from the external auditory canal of a person in Japan in 2009 (1). Reports from all continents except Australia (2) exist, but an outbreak in Europe was reported only recently, from a hospital in London (3). Major outbreaks of C. auris from countries in Europe have been reported from the United Kingdom and Spain, and sporadic isolations have been reported in Germany, France, Belgium, and Norway (2,4). We report on an isolation of C. auris in Austria, cultivated from an infection of the external auditory canal (otitis externa).

In January 2018, an otherwise healthy 22-year-old man came to an established otorhinolaryngology practice with an infection of the external auditory canal (otitis externa). The isolate showed good susceptibility against antifungals except for echinocandins; the patient was treated successfully with topical administration of nystatin.

Address for correspondence: Martin Martinot, Medecine Interne et Rhumatologie, Hôpital Pasteur, 39 Ave de la Liberte, Colmar 68024, France; email: martin.martinot@ch-colmar.fr

References

which the isolate grew on the chromogenic media and on malt extract agar was 42°C.

We further examined the isolate using the VITEK 2 system (bioMérieux). This system (version 08.01) identified the yeast as C. auris but with only 90% probability. We transferred the isolate to another laboratory and to the Austria national reference laboratory for antifungal susceptibility testing and molecular identification. Repeated examination with 2 more VITEK 2 systems with different versions (07.01, 99% probability C. haemulonii; 08.01, 98% probability C. duobushaemulonii) and the VITEK MS system (no identification) failed to identify the yeast correctly. Two different MALDI Biotyper Systems (Bruker Daltonics, Bremen, Germany) failed to identify the isolate with the in vitro diagnostic library. However, using the research use only library, we identified the isolate as C. auris with scores of 1.72 (formic acid extraction with additional washing step) to 1.96 (formic acid extraction) of a log(score) value between 0.00 and 3.00, which translates to a low confidence identification.

For molecular analysis, we extracted DNA from the isolate and performed PCR with the primer pairs ITS5 and ITS4 for the internal transcribed spacer region of the rRNA gene and NL-1 and NL-4 for the D1/D2 region of the large subunit of the rRNA gene (5,6). We then purified the amplicons and sequenced them with the same primers as for PCR. We submitted the sequence data of both sequences to GenBank under accession nos. MH071441 (ITS) and MH071440 (D1/D2). We deposited the strain for public use in the CBS-KNAW yeast collection of the Westerdijk Fungal Biodiversity Institute in Utrecht, the Netherlands, where it was assigned strain no. CBS 15366.

For antifungal susceptibility tests, we used 3 systems: the European Committee on Antimicrobial Susceptibility Testing (EUCAST) microdilution method (http://www.eucast.org/ast_of_fungi/), Micronaut (Merlin Diagnostica, Bornheim, Germany), and Etest (bioMérieux). Despite reports from other studies (2,7), our strain showed good antifungal susceptibilities for the tested antymycotics except for the echinocandins; their MICs were higher than those for the EUCAST breakpoints for C. albicans, for example. However, no breakpoints have been determined for C. auris. In the case of anidulafungin, Etest revealed a lower MIC than did the other tests. The susceptibility results (in MIC, µg/mL, by test) in detail are as follows: amphotericin B, 0.5–1.0 (EUCAST, Micronaut); anidulafungin, 0.012–0.125 (EUCAST, Micronaut, Etest); caspofungin, 0.032–0.125 (EUCAST, Micronaut); micafungin, 0.064–0.125 (EUCAST, Micronaut, Etest); 5-flucytosine, <0.064 (EUCAST, Micronaut); fluconazole, 0.25–0.5 (EUCAST, Micronaut, Etest); itraconazole, ≤0.03 (Micronaut, Etest); posaconazole, ≤0.008–0.032 (EUCAST, Micronaut, Etest); voriconazole, ≤0.008–0.016 (EUCAST, Micronaut, Etest); and isavuconazole, 0.002 (Etest).

We treated the patient twice weekly for 3 weeks with an oral suspension of nystatin; the patient did not return for the next 4 weeks. Thereafter, we examined the patient’s ears by otoscopy and found that the external ear canal was only slightly reddened and there were no signs of fungal growth.

In conclusion, C. auris is isolated not only from hospital settings and from severely ill patients but also from otherwise healthy persons. Despite new developments of databases and libraries for mass spectroscopy and biochemical-based instruments, molecular identification (e.g., ITS or D1/D2 domain of rDNA) is still the most, or in many cases the only, tool to identify C. auris reliably.

About the Author
Dr. Pekard-Amenisch is head of the Department of Clinical Microbiology and Serology, National Reference Centre for Yersinia at the Austrian Agency for Health and Food Safety (AGES), Institute of Medical Microbiology and Hygiene, Graz, Austria. Her primary research interest is medical microbiology, particularly bacteria of the genus Yersinia.

References