Sarah Crisci
2/5/24

Candida auris in New York State: A Case Study

Introduction

Candida auris (*C. auris*), a drug-resistant fungus, was first identified in Japan in 2009.[1] The first case in New York occurred in 2013 but was not identified until 2016. Over 330 cases occurred between 2016 and 2019, leading New York State to examine existing mitigation strategies and consider new requirements for hospitals and nursing homes.[2]

Facts of the case

The United States Centers for Disease Control and Prevention (CDC) first distributed an alert about *C. auris* in June 2016 following reports of cases in healthcare facilities in several countries.[3] Though it was first identified in 2009, *C. auris* was retrospectively identified as early as 1996 in South Korea.[3] Three cases in New York, in May 2013, April 2016, and June 2016, were retrospectively identified following the June 2016 alert.[4] Over the next three years, more than 330 cases were identified in New York.[2]

Most *C. auris* cases in New York have occurred in healthcare facilities in New York City, specifically in Manhattan, Brooklyn, and Queens.[1] Globally, *C. auris* is most often hospital-acquired and can cause infections in the blood, wounds, and ears.[3] These infections can have high mortality and are difficult to treat. Most *C. auris* cases are resistant to at least one antifungal drug, despite being treatable with multiple medications; however, some cases are resistant to all three major antifungal classes, making them impossible to treat.[3]

Epidemiological aspects of the event

One study examined *C. auris* in New York healthcare facilities from 2013 to June 2017 through positive cultures.[4] Cases were categorized as clinical cases if the specimen was taken to diagnose or treat disease, or as screening cases if the specimen was taken for surveillance purposes.[4] Cultures were carefully examined because *C. auris* can be misidentified as other species.[4,5] Samples were taken from suspected cases, those who resided in the same room as confirmed cases, and through environmental surveillance samples.

The study identified 51 clinical cases and 61 screening cases. The 30-day mortality rate among clinical cases was 27% and the 90-day mortality rate was 58%.[4] However, most patients had comorbidities so it remains unknown how many deaths were directly attributable to *C. auris*.[4] 1,136 screening cultures were taken from persons who resided in, were admitted to, or worked in hospitals, long-term care facilities (LTCF), and ventilator-equipped skilled nursing facilities (VSNF), and 61 cases were identified. 781 environmental samples were taken, and 62 were positive. Most of the positive samples were taken from surfaces and objects in case-patients' rooms and mobile equipment used in their rooms.[4] Cases were mostly identified in Manhattan, Queens, and Brooklyn. The cost was not mentioned.

Management of the event

C. auris was made nationally notifiable in 2018.[6] At that time, most US cases were in New York City, New Jersey, and Chicago. In April 2018, New York State issued an advisory requesting all confirmed or suspected *C. auris* isolates be sent to the Wadsworth Center Mycology Laboratory (WCML) in Albany.[7] The CDC supported the WCML to enhance lab capacity. However, results often took several days, or even up to a week.[1] While waiting for results, patients are isolated, which is challenging for facilities to accommodate.[1]

Additionally, New York State mandated that *C. auris* cases be reported to the NYS Department of Health (NYSDOH) Regional Epidemiologist or the Bureau of Healthcare Associated Infections Central Office. The 2019 NY Times article mentions that the control practices were not working, and health officials started discussions around new requirements.[1] However, it is unclear if these requirements were implemented. The latest NY State advisory about *C. auris* was published in August 2022.[5] By this time, 1,144 clinical cases and 1,460 surveillance cases had been identified.[5] Cases had been identified at 73 hospitals, 63 LTCFs, and seven other types of healthcare facilities.[5] The 2022 advisory included recommendations for healthcare facilities to review CDC information, follow CDC infection prevention and control recommendations, collaborate among staff on infection prevention, submit suspected or confirmed isolates to the WCML, and monitor the CDC and NYSDOH website.[5]

The requirements discussed in the NY Times article would have included mandatory pre-admission screening and isolation. A pilot study conducted from 2017-2019 included universal screening at five high-risk hospitals and nursing homes.[8] Positive rates ranged from 2.5% in a cardiac care unit to 22.0% in a nursing home.[8] The study found the highest rates among nursing home ventilator units; results were returned in a median of five days, with 88.4% of results returned within seven days; and screening required significant effort by staff.[8] Considering the slow turnaround time for screening results, the resources involved, and the difficulty in isolating patients while waiting for results, it is understandable that NYS did not mandate universal screening.

Communications of the event

Communications were initially poor, as the NYSDOH did not release information about where the infections were occurring.[1] Eventually, this changed, and they released a list of facilities that had dealt with these infections. Further, despite the CDC alert in June 2016, NYSDOH did not issue an advisory until April 2018.[7] By that point, there had been over 260 cases in New York.[2] NYSDOH issued additional advisories in 2019 and 2020, however, each of these focused on sending samples to the lab. Finally in 2022, an advisory included recommendations for healthcare facilities on handling cases of *C. auris*.

Summary

C. auris is a dangerous fungus with a high mortality. First identified in New York in 2013, the number of cases has grown rapidly, with over 4,151 cases as of January 19, 2024. Despite following recommendations from the CDC, NYS healthcare facilities face challenges in providing isolation rooms for patients while waiting for lab results, which often have high turnaround times. More needs to be done to curb transmission of *C. auris* in New York.

Sarah Crisci
2/5/24

References

1. Richtel M. To Fight Deadly Candida Auris, New York State Proposes New Tactics. *New [9]York Times*. https://www.nytimes.com/2019/05/23/health/candida-auris-hospitals-ny.html. Published May 23, 2019.
2. Get the Facts About Candida Auris. www.health.ny.gov. https://www.health.ny.gov/diseases/communicable/c_auris/
3. Clinical Alert to U.S. Healthcare Facilities - June 2016. *New York State Department of Health.* https://www.cdc.gov/fungal/candida-auris/candida-auris-alert.html Published 2016.
4. Adams E, Quinn M, Tsay S, et al. Candida auris in Healthcare Facilities, New York, USA, 2013–2017. *Emerging Infectious Diseases*. 2018;24(10):1816-1824. doi:https://doi.org/10.3201/eid2410.180649
5. Health Advisory: Update to healthcare facilities regarding multidrug-resistant Candida auris in New York State. *New York State Department of Health.* https://www.health.ny.gov/diseases/communicable/c_auris/providers/docs/notification_8-30-2022.pdf Published August 30, 2022.
6. Standardized Case Definition for Candida auris clinical and colonization/screening cases and National Notification of C. auris case, clinical. *Council of State and Territorial Epidemiologists.* https://cdn.ymaws.com/www.cste.org/resource/resmgr/ps/2018ps/18-ID-05_Dec2018_Update.pdf Published December 2018.
7. Laboratory Advisory – Request for Isolates. *New York State Department of Health.* https://www.health.ny.gov/diseases/communicable/c_auris/providers/docs/2018_advisory.pdf Published April 5, 2018.
8. Rowlands J, Dufort E, Chaturvedi S, et al. *Candida auris* admission screening pilot in select units of New York City health care facilities, 2017-2019. *American Journal of Infection Control.* 2023;51(8):866-870. https://www.ajicjournal.org/article/S0196-6553(23)00048-2/fulltext