Candida auris identification in Piedmont, one year later: more colonizations than infections

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BACKGROUND

Candida auris is an emerging fungus that represents a serious health threat globally, as capable of generating nosocomial-ICU outbreaks, multidrug-resistant, high transmissible. In Northern-Italy, 361 cases were detected in 17 healthcare facilities between July 2019-December 2022. The majority of patients (91.8%) were considered colonized (1,2,3). We describe our experience with *C.auris* colonization/infection among critically ill patients, admitted to a University Hospital referral ICU between July 2021-October 2022.

METHODS

C.auris active screening was reserved to high-risk patients or close contacts until July 2022, then universal screening was added to weekly surveillance cultures.

Candida isolates were identified by MALDI-TOF/MS (Bruker, Germany); MIC determination was conducted by broth microdilution according to EUCAST.

RESULTS

38 patients presented colonization (34) or infection (4) from *C.auris* isolated from skin (35), urine (14), respiratory-tract (8) and blood (4). The average age was 64 years (range 22-88). 28/39 (71.8%)patients were male. The mean SOFA and SAPS II score at ICU admission were 6.72 (2-12) and 46 (27-68), respectively. The mean time from ICU-admission to first isolation was 13 days (1-48).

All patients received broad-spectrum antimicrobials for bacterial infections before *C.auris* identification; 18/39 patients (46.2%) had prior antifungal exposure, with 16/39 patients having previous colonization of other *Candida* species; 17/39 patients (43.6%) had severe COVID-19 illness prior to *C.auris* identification.

Only 5 cases (12.8%) were treated with antifungals as *C.auris* related infections (1 for fever of unknown origin and multisite colonization; 4 for candidemia). Of these, 2 patients died in the ICU (not *C.auris* related-mortality).

Microbiological data showed 100% fluconazole resistant isolates with anidulafungin, caspofungin and micafungin MIC 90 of 0.125, 0.125 and 0.06 mg/L., respectively.

Sex, Age	COVID-19	Comborbidities	SOFA (admission)	SAPS II (admission)	Site of isolation C.auris	Time from ICU Admission to isolations (days)	Antifungal treatment	MV (days)	Steroid	Immunomodulatory agents	RRT	Previous Broad-spectrum ATB	Previous antifungal tp pre candida isolation	Other infections	Outcome at 28 days
F- 57	Yes	HTA, haematological disease, malignancy	9	40	respiratory tract / blood / urine	48 / 64 / 200+	Anidulafungin + liposomal amphotericin B	51	yes	yes	no	yes	yes	VAP KPC; BSI *Candida albicans*	Alive
F 71	No	Smoking, malignancy	7	68	skin / urine / blood	4 / 8 / 66		5	no	no	yes	yes	yes	BSI *Enterococcus faecalis*	Alive
F-74	No	CVDs, haematological disease	6	37	skin / respiratory tract / blood	4 / 60 / 65	Anidulafungin + fluconazole	14	yes	no	no	yes	yes	HAP CMV-DNA / HSV-1; urosepsis *Proteus mirabilis / Enterococcus faecium*	Aliive
M 73	No	Smoking, HTA, CKD, CVDs	11	61	blood	48		49	yes	no	yes	yes	yes	BSI MRSE + *Enterococcus faecium;* VAP KPC	Dead

ICU, Intensive Care Unit; MV, Mechanical ventilation; RRT, Renal replacement therapy; ATB, Antiobiotics; TP, Therapy; HTA, Arterial Hypertension; CVDs, Cardiovascular Diseases; VAP, Ventilator Associated Pneumonia; KPC *Klebsiella Pneumoniae Carbapenemase;* BSI, Blood Stream Infection; HAP, Hospital Acquired Pneumonia; CMV, Citomegalovirus; HSV-1, Herpes Simplex Virus 1; MRSE Methicillin-resistant Staphilococcus Epidermidis.

CONCLUSIONS

The increasing cases may reflect growing diagnostic efforts but highlights the importance of a multidisciplinary bundling of infection control measures. The limited number of *C.auris* invasive infections (10.5%) compared to colonizations deserve an attentive clinical reflection.

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