Candida auris: a latent threat to critically ill patients with COVID-19

Jose Y Rodriguez[1,2,3,4], Patrice Le Pape[5], Olga Lopez[2], Kelin Esquea[3], Anny L Labiosa[4], Carlos Alvarez-Moreno[5,6]

1.Centro de Investigaciones Microbiológicas del Cesar (CIMCE), Valledupar, Colombia;
3.Clínica alta complejidad Valledupar, Colombia
3. Clínica Laura Daniela, Valledupar, Colombia,
4.Instituto Cardiovascular del Cesar, Valledupar Colombia.
5.Département de Parasitologie et Mycologie Médicale, Université de Nantes, Nantes Atlantique Universités, EA1155 – IICiMed, Faculté de Pharmacie, Nantes, France
6. Facultad de Medicina, Universidad Nacional de Colombia, Bogotá, Colombia;
7. Clínica Colsanitas, Clínica Universitaria Colombia, Bogotá, Colombia

Corresponding author:

Jose Y. Rodriguez, M.D.

Email: jyrodriguezq@gmail.com

Dear Editor:

We read the article by White et al(1). with great interest. The proposed strategy will probably elucidate the true role of COVID-19-associated invasive fungal infections, especially COVID-19-associated pulmonary aspergillosis (CAPA). We have not found the same incidence of CAPA, probably due to the absence of an active search. However, we detected an increase in the number of fungemias in critically ill COVID-19 patients.

We report 20 cases of fungemia in hospitalized patients with SARS-CoV-2 infection in 4 institutions in the northern region of Colombia from June to September 2020. We reviewed medical records and evaluated microbiological, demographic and clinical variables. Mortality was evaluated at 30 days after isolation of the yeast. Pathogen identification was performed by matrix-assisted laser desorption/ionization time-of-fight (MALDI-TOF) mass spectrometry (Bruker Daltonik, Bremen, Germany). SARS-CoV-2 infection was confirmed by RT PCR for SARS-CoV-2.

The epidemiological and demographic characteristics, underlying conditions, treatments and outcomes of the 20 patients are shown in table 1.All patients received β-lactam antibiotics at the time of admission, and 5 patients received prophylactic antifungal therapy before the development of fungemia (3 with fluconazole and 2 with caspofungin). Nineteen of the 20 patients received steroids as part of the COVID-19 treatment The mean number of days from admission to the time of diagnosis of fungemia was 17.7 (range 6-35 days).

The mean number of days from blood culture to antifungal treatment initiation was 3.9. Fifteen patients received antifungal treatment, Twelve (60%) patients died, and the mean number of days from the diagnosis of fungemia to the time of death was 6.1 (range 0-24 days). Six patients had fungemia caused by *C. auris*, four by *C. albicans,* 4 by *C. tropicalis*, 3 by *C. parapsilosis*, 1 by *C. orthopsilosis*, 1 by *C. glabrata* and 1 by *Trichosporum asahii*

The association between COVID-19 and fungemia can be multifactorial as a consequence of the severity of the disease (most patients required ventilatory support, invasive hemodynamic monitoring, and a prolonged stay in the ICU) and previous use of antibiotics and steroids. Currently, the use of steroids is part of the standard of care in managing patients with COVID-19 and hypoxemia. Although bacterial coinfection is low, the use of antimicrobials is common; therefore, the antimicrobial stewardship program must be strengthened for patients with SARS-CoV-2 infection as part of preventive strategies for the development of fungemia (2-3)

In this case series, the time to develop fungemia was more significant than that reported by White et al. (17.7 days vs. 9 days), as was the mortality of this group of patients (60% vs. 47.1%).

The prevalence of nonalbicans Candida fungemia in this group of patients, 15/19 (78.94%), is striking. The northern region of Colombia is an endemic zone for *C. auris*(4). In places where *C. auris* is endemic, despite the strict control measures in place in the management of SARS-CoV-2 infection, coinfections by this microorganism continue to occur. Given the multiresistant characteristics of *C. auris* and the difficulties of eradicating it, we must not let our guard down in the era of COVID-19 in regard to both infection control policies and antimicrobial stewardship, including antifungals.

None of the authors has any conflicts to disclose.

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Table 1. Epidemiological and demographic characteristics, underlying conditions, treatments and outcomes of patients with COVID-19 and fungemia in 4 institutions in northern Colombia.

Sex		
	Men	13 (65%)
	Women	7 (35%)
Age (mean; range)		63 (1-86 years)
Reason for admission		
	COVID-19	17 (85%)
	Extensive burns	2 (10%)
	Cholecystitis	1(5%)
Comorbidities		
	Arterial hypertension	11 (55%)
	Diabetes	6 (30%)
	Chronic renal failure	5 (25%)
	Cancer	2 (10%)
ICU admission		20 (100%)
Mechanical ventilation		19 (95%)
Number of days from admission to initiation of mechanical ventilation (mean)		3 days
Central venous catheter		19 (95%)
Bladder catheter		19 (95%)
Hemodialysis		10 (50%)
Packed red blood cell transfusion		10 (50%)
Parenteral nutrition		2 (10%)
Use of dexamethasone		19 (95%)
Use of β-lactams		20 (100%)
Isolated yeast		
	C. auris	6 (30%)
	C. tropicalis	4 (20%)
	C. albicas	3 (20%)
	C. parapsilosis	3 (15%)
		1 (5%)
	C. orthopsilosis	1(5%)
	C.glabrata *Trichosporum asahii*	1(5%)
Antifungal treatment		15(75%)
	Fluconazole	8 (40%)
	Caspofungin	5 (25%)
	Voriconazole	2 (10%)
30-day mortality		12 (60%)