Correspondence

Funga an gene a n a en e e e C na u d ea e 2019 (COVID-19): T e fac and c a enge

Dear Editor,

Since December 2019, an outbreak of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has spread globally. One of the complications observed in COVID-19 cases is secondary infection. When the burden of SARS-CoV-2 increases, the body's immune function decreases, and the probability of fungal infection increases.

The traditional detection methods used for fungal infection, such as culture methods and histopathology, might bring unpredictable biosafety issues, since the relevant specimens cannot be inactivated. Therefore, serological assays for fungal antigens, including (1,3)-β-D-glucan (G), galactomannan (GM), and mannan (Mn) tests commonly used for serological diagnosis fungal infection.[1,2] The sensitivity of G test in invasive Candida and *Aspergillus* infection is 70%—80%, and the specificity is 70%—80%. The serum GM detection is as sensitive as 70%—80%. The sensitivity of mannan detection is 58% and the specificity is 93%. When the combined detection of mannan antigen and antibody can improve the sensitivity of 83% and the specificity of 86%.[3]

In this study, we aimed to illustrate the existence of these fungal antigens from 181 patients with severe COVID-19 in at Hubei Provincial Hospital of Traditional Chinese Medicine (Wuhan, China) between December 31, 2019, and February

Table 1 Positive rates of (1,3)-β-D-glucan (G), galactomannan (GM), and Candida mannan (Mn) tests in different stages of disease and age groups in severe COVID-19 patients.

Stage of disease	No. of patients tested	No (%) of patients with positive results in each indicated test			
		G	GM	Mn	Total (Positive in any of G, GM, MN test)
Early (1–7 days)	15	3 (20.0)	1 (6.7)	0.00 (0)	20.00[3]
Middle (8–14 days)	28	14.28 (4)	7.14 (2)	3.57 (1)	14.28[4]
Late (≥15 days)	138	18.11 (25)	7.97 (11)	1.45 (2)	25.3 (35)
Age (years)	No. of patients	G % (No)	GM % (No)	Mn % (No)	Total % (No)
20–49	25	24 (6)	0.00 (0)	4.00 (1)	24.00 (6)
50–64	57	12.28 (7)	8.77 (5)	1.75 (1)	21.05 (12)
≥65	99	19.19 (19)	9.09 (9)	1.01 (1)	24.24 (24)

Declaration of Competing Interest

The authors declare that they have no competing interests.

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