

Supplemental Content

Supplemental method

CAPA diagnostic criteria

The 2020 ECMM/ISHAM consensus criteria define and classify the diagnosis of CAPA as proven, probable, or possible CAPA according to histologic, microbiologic, imaging, and clinical factors ¹. Proven CAPA is demonstrated by the histopathological or direct microscopic detection of fungal hyphae showing invasive growth or aspergillus recovered by culture, microscopy, histology, or polymerase chain reaction of a sample obtained from a sterile aspiration or biopsy from a pulmonary site ¹. Probable CAPA is diagnosed by observation of tracheobronchitis on bronchoscopy and mycological evidence in the form of tracheobronchitis and pulmonary infiltrates on chest CT, combined with mycological evidence obtained from bronchoalveolar lavage ¹. Possible CAPA requires pulmonary infiltrates on CT in combination with mycological evidence obtained via non-bronchoscopic lavage ¹.

Supplemental Tables

Table S1. Summary of Clinical Characteristics and CT Findings of CAPA in Study-Level Analysis

Study [First Author]	Mean or median age	Male number (%)	Patients with diagnosis of CAPA	Patients with available CT findings	Described CT findings
Wang ¹⁶	73	8 (100)	8	2	Nodules with cavities and dendritic signs Consolidation or interstitial changes
Van Biesen ¹⁷	68	5 (55.6)	9	5	Ground glass opacities, consolidations
Lamoth ¹⁸	62	3 (100)	3	3	Multiple consolidations Interstitial infiltrates and ground glass opacities
Alanio ¹⁹	62.7	5 (55.6)	9	3	Typical COVID-19 nodules
Dupont ²⁰	68.4	15 (78.9)	19	19	Ground glass opacities with condensation Pulmonary embolism Cavitation, nodules, bronchiectasis, secondary infection signs
Mitaka ²¹	78.8	4 (100)	4	2	Bilateral consolidation, multifocal ground glass opacities Bilateral cavity lesions, one of which contains an air-fluid level
Meijer ²²	74	0 (0)	1	1	Extensive bilateral ground glass opacities with consolidation and fibrotic bands without pleural effusion Significant bilateral pulmonary emboli
Álvarez Fernández ²³	76	1 (100)	1	1	Bilateral pneumonia with atypical interstitial tissue Cavitated lesions
Bruno ²⁴	68	1 (100)	1	1	Bilateral ground glass opacities and excavated lesions, one of which with a crescent sign

Li ²⁵	55	1 (100)	1	1	Bilateral diffuse ground glass changes, patchy opacities, local consolidation and pleural incrustation or conglutination
Schein ²⁶	87	0 (0)	1	1	Bilateral patchy ground glass opacities related to COVID-19 Three nodular opacities with air crescent sign
Witting ²⁷	72	1 (100)	1	1	Large bilateral cavitory lesions, air-fluid levels, and aspergilloma consolidation, both pleural effusion
Haglund ²⁸	52	1 (100)	1	1	Bilateral infiltrates with consolidation and ground glass opacity
Trujillo ²⁹	55	0 (0)	1	1	Diffuse ground glass opacity, traction bronchiectasis with thickening of bronchial walls and tree-in-bud Cavitory lung nodules (5 cm, 2.5 cm) with thickened irregular walls
Prattes ³⁰	70	1 (100)	1	1	Multiple bilateral ground glass opacities with a crazy-paving appearance Reversed halo
Falces-Romero ³¹	69.5	8 (80)	10	1	Interstitial infiltrates and ground glass opacities
Ghelfenstein-Ferreira ³²	56	1 (100)	1	1	Multiple bilateral ground glass opacities with a crazy-paving pattern Pulmonary nodules (7 mm, 1 mm, 1 mm)
Marr ³³	65.5	9 (45)	20	9	Ground glass opacities and crazy-paving, bronchiectasis, airway wall thickening and irregularity, consolidations and tree-in-bud nodules Large nodules with necrosis and cavitation

Table S2. Relationship of CT Findings with Patient Characteristics

	Group 1 & 2 (N=48)	Group 3 & 4 (N=33)	P value
Sex			0.495
Male	33 (68.8)	19 (61.3)	
Female	15 (31.3)	12 (38.7)	
Age	65.6 ± 12.6	65.8 ± 14.2	0.938
Immunocompromising condition			0.111
Present	19 (39.6)	19 (57.6)	
None	29 (60.4)	14 (42.4)	
ECMM/ISHAM criteria*			0.282
Probable CAPA	12 (57.1)	11 (78.6)	
Possible CAPA	9 (42.9)	3 (21.4)	
	No cavity (N=64)	Cavity (N=22)	P value
Sex			0.754
Male	44 (68.8)	13 (65.0)	
Female	20 (31.3)	7 (35.0)	
Age	64.5 ± 12.4	69.6 ± 14.2	0.113
Immunocompromising condition			0.692
Present	26 (40.6)	10 (45.5)	
None	38 (59.4)	12 (54.5)	
ECMM/ISHAM criteria*			0.215
Probable CAPA	18 (72.0)	5 (50.0)	
Possible CAPA	7 (28.0)	5 (50.0)	

ECMM=European Confederation for Medical Mycology, ISHAM = International Society for Human and Animal Mycology, CAPA= COVID-19-associated pulmonary aspergillosis

We pooled data from 35 patients in an individual patient-level data analysis and 54 patients in a study-level analysis and then performed the analysis.

Data in parenthesis indicated percentage.

*ECMM/ISHAM criteria were evaluated for 35 patients in an individual patient-level data analysis.