Aspergillosis in COVID-19 era in Dominican Republic

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BACKGROUND

COVID-19-associated Pulmonary Aspergillosis (CAPA) and Invasive Pulmonary Aspergillosis (IPA) represent a difficult diagnostic challenge to the clinician. Moreover, during the COVID-19 pandemic, as airway invasive procedures were limited due to fear of contamination, these diagnoses were even harder to make, as one of the most useful diagnosis tools, bronchoscopies, were postponed. The aim of this study was to describe the epidemiology and risks factors of Aspergillosis and CAPA in a Dominican tertiary health care facility during the COVID-19 pandemic

METHODS

A retrospective, cross-sectional, case-series study was carried out were all patients during the COVID-19 pandemic from March 2020 - March 2022 in HGPS who had a galactomannan (GM) test were analyzed. Using E-records patients with positive galactomannan (GM) tests were identified, and the following variables were evaluated: demographics, laboratories, risk factors, comorbidities, CT scans and prognosis. Cases were classified as CAPA (Probable, possible or proven according to classification ECMM/ISHAM), or IPA.

RESULTS

Out of 77 patients who underwent a GM test, 10 had a positive result; 40% of these were probable CAPA and 60% were IPA. 7 were co-infected with multidrug-resistant pathogens from which 71.4% died; overall median age was 56.9 years (minimum 29 – maximum 71). Most radiological findings from the probable CAPA group were classified as typical invasive pulmonary aspergillosis. Major documented risk factors and comorbidities were lymphopenia, prolonged steroids use, hypertension, diabetes mellitus and mechanical ventilation.

Only **one** patient was female

The overall mortality rate was **60%** and **50%** for the probable CAPA group

Table 1. Characteristics of patients with COVID-19-associated Pulmonary Aspergillosis (CAPA) and Invasive Pulmonary Aspergillosis (IPA)

Patient	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7	Patient 8	Patient 9	Patient 10
Sex	Female	Male	Male	Male	Male	Male	Male	Male	Male	Male
Age	29	61	58	68	56	71	47	56	53	70
Comorbidities	Falcemia, Deep Venous Insufficiency, Osteomyelitis right lower extremity	Aplastic Anemia, Hypertension, Deep Vein Thrombosis	Sarcoidosis, Hypertension, Pulmonary Fibrosis, Renal Ectopia	Hypertension, Diabetes, Chronic Kidney Disease Peritoneal Dialysis, Deep Venous Insufficiency, Heart Failure	Diabetes, Pulmonary Fibrosis	Diabetes, Hypertension	Multiple Myeloma	Hypertension, Diabetes, Chronic Kidney Disease, Bilateral Transplantation	Hypertension, Diabetes, Bladder Cancer, Hepatomegaly	Hypertension, Diabetes, Kidney Transplant, Pulmonary Hypertension
UCI	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No
Mechanical ventilation	N/A	Yes	N/A	N/A	No	Yes	Yes	Yes	N/A	N/A
Corticosteroid	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
SARS-COV-2	No	No	Yes	No	Yes	Yes	No	Yes	No	No
Galactomannan	0.85	0.75	0.54	0.77	1.16	1.97	1.03	3.67	0.77	2.68
Deceased	No	Yes	No	Yes	No	Yes	Yes	Yes	No	Yes

CONCLUSION

An increase in both CAPA and IPA screening is needed in patients who present risk factors such as mechanical ventilation, prolonged use of steroids, or renal replacement therapy. Screening for GM in bronchoalveolar lavage, mycologic cultures and histopathologic tests, are needed for an improvement in the diagnostic classification as well as the clinical outcome of these patients.

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