

BACKGROUND

COVID-19, caused by SARS-CoV-2, has emerged as a global public health emergency and has been the main cause of intensive care admission during the pandemic. Invasive pulmonary aspergillosis (IPA) superinfection has been reported in case series of critically ill patients. Mexico has been widely affected by SARS-CoV-2. We present a case series of COVID-19-associated IPA at a teaching hospital in Mexico City.

OBJECTIVE

Describe the clinical characteristics of critically ill patients with COVID-19 and invasive pulmonary aspergillosis in a tertiary teaching hospital in Mexico City

METHODS

We performed a retrospective analysis of COVID-19 patients admitted to the ABC Medical Center from March 13 to June 1, 2020. Only those with severe or critical COVID-19 were hospitalized. Patients with a diagnosis of putative IPA were analyzed. SARS-CoV-2 was diagnosed by Real-Time PCR from nasopharyngeal swabs. Aspergillus antigen testing in tracheal aspirate and serum was done with Aspergillus-specific galactomannoprotein (GP) ELISA (*Euroimmun Medizinische Labordiagnostika*). The study was approved by the hospital ethics committee.

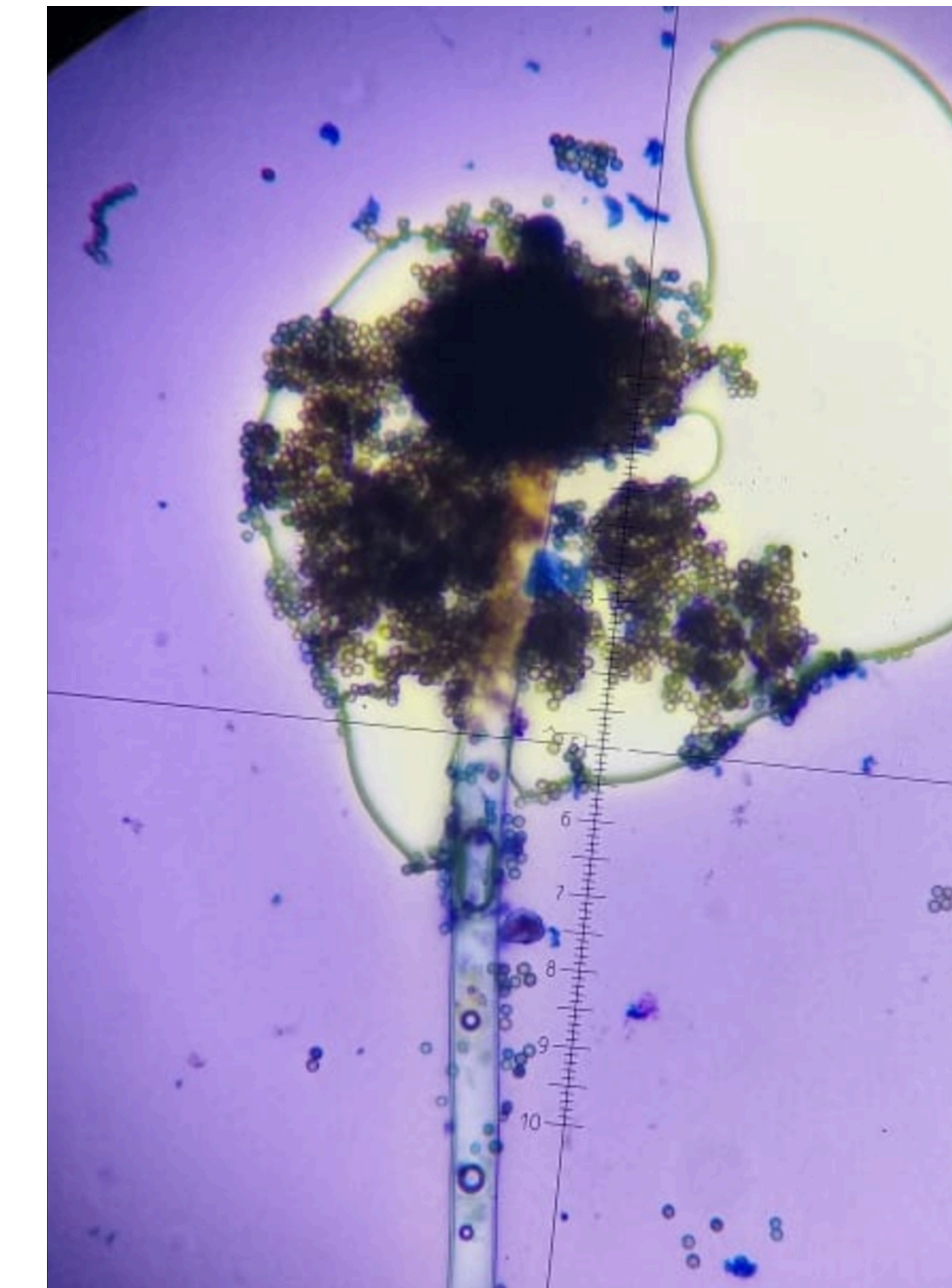
RESULTS

During the study period, 154 patients were admitted due to severe or critical COVID. Amongst them, 47 required invasive mechanical ventilation (IMV). Overall, we identified seven (14.9%) cases of IPA. The mean age was 59.7 ± 17.8 years and five were male. All our patients had comorbidities, but none were under previous immunosuppressive treatment. All had critical COVID-19 pneumonia requiring IMV. All but one patient received corticosteroids, and five patients were treated with tocilizumab before IPA diagnosis.

Putative IPA was diagnosed in six cases (86%) by a positive GP in tracheal aspirate, additionally in one of these, the tracheal aspirate culture also grew *Aspergillus niger*. The remaining one (14%) had a positive serum GP. The median time from COVID-19 to IPA diagnosis was 10 days.

There were five bacterial co-infections, three with *Pseudomonas aeruginosa*, one with *Stenotrophomonas maltophilia*, and one with *Mycobacterium tuberculosis*. Six patients were treated with isavuconazole and one voriconazole. Patients were on antifungals for 4-6 weeks.

Follow-up was made until patients were either discharged or dead. Three patients (42.8%) died and another four were discharged. The mean days of hospital were 29.6 ± 15.1 in fatality cases compared to 23.5 ± 8.1 days in those who were discharged alive.



Aspergillus niger isolated from a tracheal aspirate of a critically-ill COVID-19 patient

CONCLUSIONS

COVID-19-associated IPA had a lower prevalence than previously reported in other series. However, it appears to be linked to high mortality and could be associated with other bacterial coinfections, mostly nosocomial.

REFERENCES

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