THE PATHCARE NEWS

COVID-19 ASSOCIATED PULMONARY ASPERGILLOSIS (CAPA)

COVID-19 and ARDS

In individuals with co-morbidities, defective immune responses to SARS-CoV-2 may allow unrestricted viral replication which elicits hyperinflammation and severe complications such as acute respiratory distress syndrome (ARDS).

COVID-19 resulting in ARDS has recently emerged as an important disease that predisposes patients to secondary pulmonary aspergillosis.

Risk factors for CAPA

- Severe lung damage during the course of COVID-19.
- The use of corticosteroids in those with ARDS.
- The use of broad-spectrum antibiotics in intensive care units.
- The presence of comorbidities such as structural lung defects.

Rates and mortality

Several studies and case-series from Europe have reported high rates of CAPA among patients with COVID-19, ranging from 20–35% of cases with ARDS.

The development of CAPA was fairly rapid, with a median of 6 days and range of 3–28 days after ICU admission. Mortality was reported to range between 44.5–66.7%.

Laboratory diagnosis

Authors encouraged prompt initiation of systemic antifungal therapy immediately after obtaining positive results from a respiratory specimen (e.g. Aspergillus PCR, culture or galactomannan detection) and also if Aspergillus was detected in samples from the upper respiratory tract (e.g. tracheal aspirates). They recommended that Aspergillus PCR or galactomannan testing should be a routine procedure for critically ill patients, specifically for those suffering from ARDS.

Aspergillus PCR as a standalone test performed on a respiratory sample e.g. BAL or tracheal aspirate, is now available from PathCare.

Therapy

Voriconazole or Posaconazole remains the recommended first-line treatment for CAPA, with liposomal amphotericin B regarded as an alternative option. If a lack of response to therapy is experienced, the addition of an echinocandin to an azole or liposomal amphotericin B should be considered.

Notes:

If voriconazole is used, therapeutic monitoring of serum concentrations of this drug is advised to reduce adverse effects.
Posaconazole may have fewer treatment side effects.

Further reading:

COVID-19 Associated Pulmonary Aspergillosis (CAPA)—From Immunology to Treatment. *J Fungi* 2020 Jun;6(2):91

Prevalence of putative invasive pulmonary aspergillosis in critically ill patients with COVID-19. *Lancet Resp Med* 2020 Jun;8(6):e48-e49

COVID-19-associated invasive pulmonary aspergillosis. *Ann Intensive Care* 2020 Jun;10(1):71

Invasive Aspergillosis as an Under-recognized Superinfection in COVID-19. *Open Forum Infect Dis* 2020 Jul;7(7)

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