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Press release
For immediate publication

COVID-19: The global problem of fungal infection of the lung
Med Uni Graz experts publish a potential prophylaxis

Graz, 30 September 2021: Med Uni Graz scientists are not only involved in the clinical treatment of COVID-19 patients in intensive care but also in scientific research, which is reflected in their high impact publications. In a current paper, experts demonstrate one consequence of COVID-19 disease in patients in intensive care that is probably little known: Fungal infection of the lung is becoming a growing problem. As this research shows, the solution might be to administer an antifungal prophylaxis to COVID-19 patients in intensive care units.

COVID-19: Graz researchers regularly provide new insights

Since the start of the COVID-19 pandemic, the research group of Stefan Hatzl, Gernot Schilcher and Robert Krause at the Medical University of Graz has dealt at length with the treatment of COVID-19 patients in intensive care units. Not only do the scientists formulate the current recommendations for University Hospital Graz together with many other colleagues but they also devote themselves to answering scientific questions. For example, the benefit of administering plasma to COVID-19 patients in intensive care has been proven and prominently published. Researchers recently published a paper in the renowned international journal "Critical Care" on how to address the problem of a fungal infection in seriously ill COVID-19 patients.

The global health problem of fungal infection of the lung with COVID-19

From the perspective of intensive care physicians, fungal infections in COVID-19 patients are an increasingly common problem. "Currently the so-called 'black fungus pandemic' in Indian COVID-19 patients is a growing concern for global health authorities," reports Robert Krause, interim head of the Division of Infectious Diseases at Med Uni Graz. The term "black fungus" used above all in the media refers to a fungal superinfection with molds from the genus of Mucorales spp. It is also known that COVID-19 patients who develop this superinfection have an especially poor chance of survival. It is not completely clear why these alarming developments have affected inhabitants of the Indian subcontinent in particular. "At the center of the debate is the warm and humid tropical climate, the poor health care of the population especially in relation to chronic diseases such as diabetes and the broader use of corticosteroids required to treat COVID-19," explains the expert. Fungal infections are a growing problem in Europe as well, especially in COVID-19 patients that require intensive care. In European patients and patients in the West, however, *Mucorales* molds ("black fungus") only occur in rare cases while the problem is *Aspergillus* molds. Given these circumstances, a new disease has developed: COVID-19-associated pulmonary aspergillosis (CAPA).

Disease with life-threatening consequences

"As part of our research, we have investigated all COVID-19 cases at Med Uni Graz and University Hospital Graz that have required intensive care treatment. We were the first in Austria to define a specific incidence rate for CAPA in intensive care units," summarizes Stefan Hatzl. In the intensive care unit at University Hospital Graz, 17% of patients have developed at least one symptom that meets the diagnostic criterion of a CAPA. The diagnosis of CAPA is made an average of six days after the patient enters the intensive care unit. "In the next step, we investigated the effects of a CAPA diagnosis on the patient's prognosis. We were able to show that nearly all patients who developed CAPA died: 87% of COVID-19 patients died following diagnosis of a mold infection. We were also able to show that CAPA was an independent prognostic parameter for the death of COVID-19 patients," summarizes Gernot Schilcher.

Antifungal prophylaxis as a potential global lifeline

The focus of this research was on preventing this disease with a limited prognosis by finding and employing a CAPA prophylaxis. "In our study, we were able to show that prophylactic administration of an antifungal drug with a defined effect on molds was able to prevent cases of CAPA. In the group of patients with antifungal prophylaxis, only 2% of patients developed CAPA compared with 17% in the group without antifungal prophylaxis," says Robert Krause.

This research is the first worldwide to investigate the effectiveness of antifungal prophylaxis in preventing CAPA in patients in intensive care. The conclusions of this publication may also be of significance to the "black fungus" pandemic since the antifungal used in the study is also effective against Mucorales spp. Thus it can be employed as a prophylaxis against fungal infection and used to prevent the dreaded Indian fungus.

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Link to publication
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