

## Medical Mycology – Great Achievements and Approaches at the University Hospital of Cologne

Professor Oliver A. Cornely and PD Dr Philipp Köhler from the University Hospital of Cologne and their team are experts and scientific researchers in medical mycology and help to improve the international situation with different fungal projects. A Progress Report on the work of the past 5 years was just published and shows the different aspects of the work in Cologne. The Cologne Excellence Center consists of specialists from various disciplines and is eagerly working on closing gaps in this field with regular publications and with the special project “One World One Guideline”.

Medical Mycology is an underrepresented field in medicine. Without good reason: 150 people die every hour of fungal infections, which is a higher number than people dying of TB or malaria. Additionally, fungal infections are among frequently overlooked causes of death among intensive care patients, as only about half of cases are properly diagnosed.

### ECMM (European Confederation of Medical Mycology) Excellence Center in Cologne

The ECMM was instituted at the Institut Pasteur in Paris, France, in 1993. The purpose of the confederation is to foster science and research, to coordinate scientific and clinical activities and to organize mycology conventions and training programs. In 2017, the University Hospital of Cologne was appointed ECMM Diamond Excellence Center. This status was prolonged for another 5 years in 2021 and requires excellence in laboratory and clinical mycology as well as participation in ECMM-supported clinical or epidemiological studies. The Cologne center is led by Professor Cornely and PD Dr Philipp Köhler.

### ECMM Progress Report

In their “Progress Report 2017-2021” they give insight in their past and future work, summarizing the main projects in Cologne. “Much of ECMM’s work focuses on standardizing diagnostics and treatment and developing guidelines”, explains Professor Cornely. “By doing so, we thrive to ensure that patients receive the best possible treatment. It is also our goal to allow for conditions that specifically differ by country or region and to support improvements also in Africa, Asia and Latin America.” The ECMM Consulting Service, various networks and the EQUAL Scores offer opportunities for prompt and tangible help. Research comprises various areas: clinical trials are conducted and the research agenda is adapted to current or upcoming needs as illustrated by the studies on COVID-19 associated mycoses.

## “One World One Guideline” Project

The work on guidelines for rare fungal infections is an important part at the University Hospital in Cologne to pool the expertise of specialists worldwide and derive general recommendations from it. Currently, data is being compiled for the guideline for the species *Aspergillus*.

With an increase in immunocompromised patients, the risk of fungal infections, triggered by known species such as *Candida* and *Aspergillus* or also by newly emerging and often drug-resistant moulds such as *Mucorales*, is also growing. Despite the prevalence and associated risk, fungal infections are by definition rare diseases. This means that resources for research are more limited than in other medical fields. It is true that new diagnostic and therapeutic options are now available in large hospitals. "What is missing, however, are up-to-date guidelines for optimal diagnosis and therapy," says Professor Cornely. Closing this gap is one of the main goals of the ECMM and its partners.

"Since the end of 2021, we have been collecting data for a guideline on *Aspergillus* for about a year. To do this, we are working with three major international professional societies: the ECMM, the IHSAM (International Society for Human and Animal Mycology) and the ASM (American Society for Microbiology)," Professor Cornely elaborates. To ensure orderly work, there is a tutorial video for all interested parties and contributors. The team in Cologne acts as a contact, coordinators on different continents and in EU regions help with the exchange of information and organization.

## Upcoming Study Publication

Professor Oliver A. Cornely, PD Dr Philipp Köhler et. al. have recently carried out a study on patients suffering from COVID-19 with the fungal disease *Aspergillus* tracheobronchitis that has been published as ‘Early View’ publication in the European Respiratory Journal.

The fungus *Aspergillus* causes severe complications in COVID-19 ARDS patients. Professor Cornely and his team conducted a retrospective study on the occurrence of *Aspergillus* tracheobronchitis at the University Hospital of Cologne between 03/2020 and 02/2021 with 69 patients in need of intensive care medicine. COVID-19 influences the immune system and often leads to respiratory distress syndromes in severe cases. This interaction in turn causes an increased occurrence of fungal infections. Especially in severely ill patients, it is important to recognize and treat the infection quickly.

Professor Cornely and PD Dr Köhler evaluated risk factors and make recommendations on diagnosis and treatment. "Alertness to this superinfection, fast and correct diagnosis is crucial

for optimal treatment here" says PD Dr Köhler, "which is why we are also looking forward to the new guidelines. The more experience we have, the more specifically we can treat the patients. Prompt initiation of the best possible therapy is needed to improve patients' outcomes."

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**"Progress Report 2017-2021":**

<https://www.ecmm.info/ecmm-excellence-centers/> (Excellence Center Cologne)

**More Information:**

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