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was associated with increased mortality, regardless of the aspergillosis status.⁴ This observation might prompt clinicians to start antifungal therapy as soon as *Aspergillus* is recovered, which will substantially increase the use of antifungal drugs in patients with COVID-19 in the ICU. Profiling of patients with severe COVID-19 needs to be improved with regard to their risk of developing opportunistic infections. We previously hypothesised that the risk of developing CAPA depends on the accumulation of factors related to the host, including age and risk factors defined by the European Organisation for Research and Treatment of Cancer and Mycoses Study Group Education and Research Consortium for invasive fungal diseases, factors related to viral infection, including lytic effects and immune dysregulation, and factors related to treatment interventions, including the administration of dexamethasone and tocilizumab.¹⁰ However, the spectrum of secondary infections is broad, also including viral reactivations, such as herpes simplex virus (HSV) and cytomegalovirus (CMV).⁴ In this respect, CAPA might also be seen as a reflection of a broader immunocompromised status and a sign of the severity of the weakened host status. Integrated risk profiling could involve analysing markers of opportunistic pathogens, including SARS-CoV-2, HSV, and CMV viral loads and biomarkers of opportunistic fungal infections, as well as systemic and local host parameters, including inflammatory cells and cytokines associated with inflammatory pathways, endothelial injury, and alveolar type 1 and 2 injury. Risk profiles could then be correlated with immunosuppressive treatments and outcome. Such

an approach might help early identification of patients with severe COVID-19 who might benefit from tailored interventions such as pre-emptive antifungal therapy.

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Risk of COVID-19 hospital admission among children with asthma



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See **Articles** page 191

Throughout the COVID-19 pandemic it has been clear that children are at substantially lower risk of severe disease than adults.¹ Nevertheless, large groups of children with comorbidities have been asked to shield for long durations, forgoing their access to face-to-face education and reducing their social contact, with substantial potential detriment to their mental health and emotional wellbeing. Identification of subgroups of children with comorbidities at increased risk of severe disease compared with their counterparts has

been much slower to become evident than in adults because of the low rates of severe disease. Asthma was recognised as a comorbidity that increases the risk of death and admission to hospital with COVID-19 in adults early in the pandemic.² Subsequently, asthma was identified as a comorbidity that increases the risk of severe disease (admission to critical care, receiving invasive ventilation, or death) in hospitalised children.^{3,4} However, although deaths of children with asthma and SARS-CoV-2 infection have been reported, the deaths

have been attributed to complex comorbidity rather than asthma as a sole diagnosis.⁵

The study by Ting Shi and colleagues⁶ in *The Lancet Respiratory Medicine* is, to our knowledge, the first to use nationally representative linked data spanning primary care, community prescribing, hospital admissions, and deaths to provide a much more detailed insight into the risk of severe SARS-CoV-2 in children aged 5–17 years with asthma in Scotland. The findings from Shi and colleagues' study suggest that compared with children without asthma, the risk of admission to hospital with COVID-19 is increased in children with a diagnosis of asthma in their primary care records, particularly when they have previously been admitted to hospital with asthma (HR 6.40 [95% CI 3.27–12.53]) or have required two or more courses of oral corticosteroids (3.53 [1.87–6.67]) in the 24 months before the study start date (March 1, 2020).⁶

Shi and colleagues use a Cox regression model to study these associations. Although this method of analysis has been used in other studies, such as QCOVID,² the data in this study were collected over a substantially longer duration. This means that the severity of asthma described in the study relates to the 2 years before the pandemic and does not necessarily reflect changes in asthma control that occurred throughout the 16-month study period. The sensitivity analyses suggest that the strong associations observed between previous hospital admission and two or more courses of oral corticosteroids and admission to hospital with COVID-19 are robust, but temporal changes in the rate of admission to hospital are noted within the data. These changes are described according to the predominant SARS-CoV-2 variants (alpha [B.1.1.7] and delta [B.1.617.2]) where the difference in the rate of admission to hospital with COVID-19 between those with well controlled and poorly controlled asthma increased through the pandemic. However, additional variables such as changes in asthma control and rate of presentation to hospital during the study period have not been overtly considered and might influence the rate of admission to hospital as the pandemic progressed.

The US Food and Drug Administration have recently approved licensing of the Pfizer-BioNTech COVID-19 vaccine for children aged 5–11 years and the US Advisory Committee on Immunization Practice now recommend

the use of the vaccine in this age group.^{7,8} The findings of Shi and colleagues' study might be used to identify children in this age range who would benefit most from early receipt of the vaccine. It is particularly interesting to note that this study finds that children with asthma aged 5–11 years without previous hospital admission for asthma and without previous courses of oral corticosteroids have an increased risk of admission to hospital with COVID-19, compared with children without asthma.⁶ The study design results in the youngest of children not receiving corticosteroids or being admitted to hospital with asthma before entering the study due to the diagnostic criteria for asthma.⁹ However, this might not reflect their subsequent asthma control during the study period and the data for this youngest group of children should be treated with caution.

Within this country-wide study, only 67 (1.5%) of 4339 children with asthma and confirmed SARS-CoV-2 infection were admitted to hospital and nine were admitted to the intensive care unit or died with COVID-19, a remarkably small number.⁶ Careful decision making around the delivery of the vaccine to children younger than 12 years is essential. Although children with asthma have been identified as having an increased risk of being admitted to hospital compared with peers without asthma, the overall risk remains very low. A balance between the risk of hospitalisation from SARS-CoV-2 and the low risk of vaccination side-effects needs to be carefully considered before vaccination is contemplated.

Over the coming winter, many well recognised respiratory viruses are anticipated in children, and in combination with seasonal changes, these are expected to increase the frequency and severity of asthma exacerbations.⁹ A focus on excellent asthma control, including the delivery of the influenza vaccine, and improving air quality and hygiene in schools is essential for all children with asthma to reduce their susceptibility to exacerbations over the coming winter.

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Cystic fibrosis: a call for papers for ECFS 2022

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To submit a paper to *The Lancet Respiratory Medicine* go to <https://www.editorialmanager.com/THELANCETRM>

The Lancet Respiratory Medicine is now entering its sixth collaboration with the *Journal of Cystic Fibrosis* to co-host a research session at the European Cystic Fibrosis Society (ECFS) meeting. Last year to provide additional insight into both the peer review process and editorial decision making we were delighted to be joined by *The European Respiratory Journal*. I am pleased to announce that we will

once again have a session involving the three journals at the 2022 ECFS meeting in June 8–11 in Rotterdam, The Netherlands. The aim of this cross-journal session is to provide an educational forum to discuss how the journals operate, and to disseminate the latest cutting-edge findings in this very active field. As previously, it will consist of selected research papers published in the journals, presented by the authors of those papers, with additional discussion from reviewers and editors on editorial processes and decisions made.

The Lancet Respiratory Medicine is therefore looking for high-quality submissions in patients in the field of cystic fibrosis that will have an effect on management. We particularly welcome clinical trials. The journal offers a fast-track publication process. Please submit your paper through our online system mentioning this call for papers in your covering letter. The deadline for submissions is March 11, 2022. We look forward to reading your research that will help shape and improve patients' lives.

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