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Improved Prognosis in Cystic Fibrosis: Consideration for Intensive Care during the COVID-19 Pandemic

To the Editor:

The dramatic improvement in prognosis for individuals with cystic fibrosis (CF) must not be overlooked in deliberations about the use of intensive care during the coronavirus disease (COVID-19) pandemic.

Thanks to advances in treatment options and improvements in care, the median predicted survival for people with CF in the United States is approaching 50 years of age and steadily climbing (1). With the recently approved combination modulator elexacaftor/tezacaftor/ivacaftor (Trikafta), which addresses the basic defect in CF, many people with CF are experiencing transformational improvements in quality of life and lung function that will undoubtedly further increase survival.

For patients with advanced CF lung disease, the outlook has also dramatically improved. Before the U.S. Food and Drug Administration approved Trikafta, the median survival for patients with CF and $FEV_1 < 30\%$ predicted was shown to be >6.5 years (2). Recent studies reveal improving critical care outcomes, with unanticipated survival and functional recovery from respiratory failure precipitated by influenza and other acute infections. These data prompted the developers of the 2020 Cystic Fibrosis Foundation consensus guidelines for the care of individuals with advanced CF to recommend that these individuals should be considered eligible for intensive care (3).

As states and hospitals turn to emergency triage plans to ensure that scarce medical resources are allocated wisely, we are concerned that some plans use the mere presence of existing health conditions, including CF, as a determining factor in these decisions. This approach fails to recognize that CF has a wide range of disease manifestations. Just as importantly, putting CF in the same category as other chronic lung diseases fails to account for the fact that individuals with CF typically are decades younger and more functional than those with more common chronic lung diseases. Although it is important to give frontline healthcare workers guidance during this crisis, considering all chronic lung diseases as similar, both as a risk factor for higher mortality from COVID-19 pneumonia and as a rationale for denying life-saving intensive care to people with CF, is too simplistic.

Alarmingly, several states have created regional triage plans that reflect an outdated understanding of CF and run the risk of denying care without taking current clinical realities into account. For example, Tennessee includes the presence of CF with $FEV_1 < 30\%$ as a reason for denying hospital admission (4). Although risk stratification is important when allocating resources, the blanket exclusion of individuals with CF and $FEV_1 < 30\%$ predicted is based on an inaccurate understanding of the current survival outcomes for patients with CF and does not factor in the short- and long-term impacts of disease-modifying CF therapy.

The University of Pittsburgh has proposed an algorithm that looks beyond the presence of an underlying condition with the application of a multiprinciple allocation framework to aid providers in these difficult times (5). This algorithm uses a life expectancy of <5 years, before COVID-19 infection, as an indicator of lower priority for critical care or ventilator use. Individuals with CF and $FEV_1 < 30\%$ predicted have a predicted median survival of >5 years, and that rate predates the widespread availability of the transformational therapy Trikafta. Accordingly, individuals with advanced CF lung disease should not have a lower priority for intensive care.

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We are in unprecedented times, and healthcare teams may face tremendously difficult decisions related to rationing ventilators and offering intensive care. As states and institutions consider revising existing triage plans or formulating new ones, decision-makers should be careful to avoid language that excludes patients from receiving care because of an underlying condition without carefully considering the prognosis for those individuals. It is vitally important that crisis standards of care factor in accurate, disease-specific prognostic information as patients are triaged. ■

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SARS-CoV-2 Viral Load in Clinical Samples from Critically Ill Patients

To the Editor:

An outbreak caused by a newly identified coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first reported in Wuhan, China, in December 2019 (1) and has since spread across mainland China and to other countries. The clinical spectrum of coronavirus disease (COVID-19) ranges from asymptomatic to severe disease, and studies in China showed that 5.0% of patients had been admitted to the ICU (2, 3). Real-time RT-PCR assays are recommended for the diagnosis of SARS-CoV-2 infection (4). A previous study reported SARS-CoV-2 viral loads in upper-respiratory specimens from patients with COVID-19 (5). Here, we investigated the viral load in specimens from multiple sites and the duration of viral shedding in respiratory-tract samples from laboratory-confirmed critically ill patients with COVID-19 requiring ICU admission.

Methods

We conducted a retrospective, descriptive study that included 16 consecutive critically ill patients with COVID-19 who had been admitted to the ICU of the First Affiliated Hospital of Guangzhou Medical University. The study was approved by the Ethics Committee of the First Affiliated Hospital of Guangzhou Medical University. The requirement for informed consent was waived for the retrospective collection of data. A protocol was developed for sample collection when the first patient was admitted to the ICU, as follows: serial samples from the upper respiratory tract (throat and nasal swabs) and lower respiratory tract (sputum or endotracheal aspirate [ETA]) were collected daily during the first week after admission and every 2–3 days after the first week, until two sequential negative results were obtained or the patient was discharged from the ICU. Plasma, serum, conjunctival swabs, and urine samples were also collected in the first week after ICU admission. Fifteen patients tested negative in these samples, and in the remaining patient, sample collection was discontinued when two sequential negative results were obtained. Fecal samples were

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