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Tempura/Getty Images

Hospital health care workers are shown during an intubation procedure. The patient has COVID-19.

New bronchoscopic interventions appear promising for patients with COPD

BY ANDREW D. BOWSER

FROM CHEST 2021 ■ Several emerging bronchoscopic treatments have the potential to improve the quality of life for patients with chronic obstructive pulmonary disease, an investigator reported at the annual meeting of the American College of Chest Physicians.

Targeted lung denervation is one promising novel therapeutic option that is safe and may improve clinical outcomes according to investigator Christian Ghattas, MD.

Data from an ongoing phase 3 randomized controlled trial may provide new information on the efficacy of targeted lung denervation in patients with chronic obstructive pulmonary disease (COPD), said Dr. Ghattas, assistant professor of medicine and associate program director for the interventional pulmonary fellowship at the Ohio State University Medical Center in Columbus.

“Outcome data of longer follow-up on previously treated patients will provide us with more

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COVID-19 ICU visit restrictions add to staff stress, burnout

BY NEIL OSTERWEIL

FROM CHEST 2021 ■ During the COVID-19 pandemic, visitation in intensive care units has been restricted for obvious safety reasons, but such restrictions have contributed to the already serious strains on staff, results of a survey indicate.

Among 91 residents, nurse practitioners, and physician assistants who work in ICUs in the Emory Healthcare system in Atlanta, two-thirds agreed that visitation restrictions were necessary, but nearly three-fourths said that the restrictions had a negative effect on their job satisfaction, and slightly more than half reported experiencing

symptoms of burnout, wrote Nicole Herbst, MD, and Joanne Kuntz, MD, from Emory University School of Medicine.

“Because families are not present at bedside, restrictive visitation policies have necessitated that communication with families be more intentional and planned than before the COVID-19 pandemic.

Understanding the ways these restrictions impact providers and patients can help guide future interventions to improve communication with families and reduce provider burnout,” the authors wrote in a poster at the annual meeting of the American College of Chest Physicians (CHEST).

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Higher mortality for ECMO-treated patients in 2nd wave

BY NEIL OSTERWEIL

FROM CHEST 2021 ■ For patients with refractory acute respiratory distress syndrome (ARDS) caused by COVID-19 infections, extracorporeal membrane oxygenation (ECMO) may be the treatment of last resort.

But for reasons that aren't clear, in the second wave of the COVID-19 pandemic at a major teaching hospital, the mortality rate of patients on ECMO for COVID-induced ARDS was significantly higher than it was during the first wave, despite changes in drug therapy and clinical management, reported Rohit Reddy, BS, a second-year medical student, and colleagues at Thomas Jefferson University Hospital in Philadelphia.

During the first wave, from April to September 2020, the survival rate of patients while on ECMO in their ICUs was 67%. In contrast, for patients treated during the second wave, from November 2020 to March 2021, the ECMO survival rate was 31% ($P = .003$).

The 30-day survival rates were also higher in the first wave compared with the second, at 54% versus 31%, but this difference was not statistically significant.

"More research is required to develop stricter inclusion/exclusion criteria and to improve pre-ECMO management in order to improve outcomes," Mr. Reddy said in a narrated poster presented at the annual meeting of the American College of Chest Physicians, held virtually this year.

ARDS severity greater

ARDS is a major complication of COVID-19 infections, and there is evidence to suggest that COVID-as-

sociated ARDS is more severe than ARDS caused by other causes, the investigators noted.

"ECMO, which has been used as a rescue therapy in prior viral outbreaks, has been used to support certain patients with refractory ARDS due to COVID-19, but evidence for its efficacy is limited. Respiratory failure remained a highly concerning complication in the second wave of the COVID-19 pandemic, but it is unclear how the evolution of the disease and pharmacologic utility has affected the clinical utility of ECMO," Mr. Reddy said.

To see whether changes in disease course or in treatment could explain changes in outcomes for patients with COVID-related ARDS,

ECMO mortality rates were significantly higher during the second wave. During the first wave, 33% of patients died while on ECMO, compared with 69% in the second wave ($P = .03$).

the investigators compared characteristics and outcomes for patients treated in the first versus second waves of the pandemic. Their study did not include data from patients infected with the Delta variant of the SARS-CoV-2 virus, which became the predominant viral strain later in 2021.

The study included data on 28 patients treated during the first wave, and 13 during the second. The sample included 28 men and 13 women with a mean age of 51 years.

All patients had venovenous ECMO, with cannulation in the femoral or internal jugular veins;

some patients received ECMO via a single double-lumen cannula.

There were no significant differences between the two time periods in patient comorbidities prior to initiation of ECMO.



Patients in the second wave were significantly more likely to receive steroids (54% vs. 100%; $P = .003$) and remdesivir (39% vs. 85%; $P = .007$). Prone positioning before ECMO was also significantly more frequent in the second wave (11% vs. 85%; $P < .001$).

Patients in the second wave stayed on ECMO longer – median 20 days versus 14 days for first-wave patients – but as noted before, ECMO mortality rates were significantly higher during the second wave. During the first wave, 33% of patients died while on ECMO, compared with 69% in the second wave ($P = .03$). Respective 30-day mortality rates were 46% versus 69% (ns).

Rates of complications during ECMO were generally comparable between the groups, including acute renal failure (39% in the first wave vs. 38% in the second), sepsis (32% vs. 23%), bacterial pneumonia (11% vs. 8%), and gastrointestinal bleeding (21% vs. 15%). However, significantly more patients in the second wave had cerebral vascular accidents (4% vs. 23%; $P = .050$).

Senior author Hitoshi Hirose, MD, PhD, professor of surgery at Thomas Jefferson University, said in an interview that the difference in outcomes was likely caused by changes in pre-ECMO therapy between the first and second waves.

"Our study showed the incidence of sepsis had a large impact on the

patient outcomes," he wrote. "We speculate that sepsis was attributed to use of immune modulation therapy. The prevention of the sepsis would be key to improve survival of ECMO for COVID 19."

"It's possible that the explanation for this is that patients in the second wave were sicker in a way that wasn't adequately measured in the first wave," CHEST 2021 program cochair Christopher Carroll, MD, FCCP, from Connecticut Children's Medical Center in Hartford, said in an interview.

The differences may also have been attributable to changes in virulence, or to clinical decisions to put sicker patients on ECMO, he said.

Casey Cable, MD, MSc, a pulmonary disease and critical care specialist at Virginia Commonwealth Medical Center in Richmond, also speculated in an interview that second-wave patients may have been sicker.

"One interesting piece of this story is that we now know a lot more – we know about the use of steroids plus or minus remdesivir and proning, and patients received a large majority of those treatments but still got put on ECMO," she said. "I wonder if there is a subset of really sick patients, and no matter what we treat with – steroids, proning – whatever we do they're just not going to do well."

Both Dr. Carroll and Dr. Cable emphasized the importance of ECMO as a rescue therapy for patients with severe, refractory ARDS associated with COVID-19 or other diseases.

Neither Dr. Carroll nor Dr. Cable were involved in the study.

No study funding was reported. Mr. Reddy, Dr. Hirose, Dr. Carroll, and Dr. Cable disclosed no relevant financial relationships.

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communicating with families than they had the previous year.

A large majority (90.5%) also said that video communication (for example, with a tablet, personal device, or computer) was as effective or more effective than telephone communication.

In all, 64.3% of practitioners agreed that visitation restrictions were appropriate, but 71.4% said that the restrictions had a negative effect on their job satisfaction, and 51.8% reported experiencing symptoms of burnout, such as stress, low energy, exhaustion, or lack of motivation.

Casey Cable, MD, a pulmonary disease and critical care specialist at Virginia Common-

wealth Medical Center, Richmond, who was not involved in the study, did her fellowship at Emory. She told this news organization that the study findings might be skewed a bit by subjective impressions.

"I work in a level I trauma unit providing tertiary medical care, and we're using more video to communicate with family members, more iPads," she said. "Their finding is interesting that people felt that they were communicating more with family members, and I wonder if that's a type of recall bias, because at the bedside, you can have a conversation, as opposed to actively talking to family members by calling them, videoing them, or whatnot, and I think that sticks in our head more, about putting in more effort.

I don't know if we are spending more time communicating with family or if that's what we just recall."

She agreed with the authors that visitation restrictions have a definite negative effect on job satisfaction and that they cause feelings of burnout.

"It's tough not having families at bedside and offering them support. When visitors are not able to see how sick their family members are, it complicates discussions about end-of-life care, transitioning to comfort care, or maybe not doing everything," she said.

No funding source for the study was reported. Dr. Herbst, Dr. Kuntz, Dr. Carroll, and Dr. Cable have disclosed no relevant financial relationships.