

Study suggests overall COVID-19 intensive care mortality has fallen by a third since the start of the pandemic

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A systematic review and meta-analysis of published studies from three continents published in the journal *Anaesthesia* (a journal of the Association of Anaesthetists) shows that overall mortality of COVID-19 patients in intensive care units (ICUs) has fallen from almost 60% at the end of March to 42% at the end of May—a relative decrease of almost one third.

The review also shows ICU [mortality](#) for the disease is not significantly different across the three continents included: Europe, Asia and North America. The study is by Professor Tim Cook, Consultant in Anaesthesia and Intensive Care Medicine, Royal United Hospitals Bath NHS Foundation Trust, Bath, UK, and School of Medicine, University of Bristol, UK, and colleagues.

The researchers searched the MEDLINE, EMBASE, PubMed and Cochrane databases up to 31 May 2020 for studies reporting ICU mortality for adult patients admitted with COVID-19. The primary outcome measure was death in ICU as a proportion of completed ICU admissions, either through discharge from the ICU or death. The definition thus did not include patients still alive on ICU.

A total of 24 observational studies including 10,150 patients were identified from centres across Asia, Europe and North America. In patients with completed ICU admissions with COVID-19 infection, combined ICU mortality across all the studies up to the end of May was 41.6%. This represents a fall of around a third from the 59.5% ICU mortality seen in the studies up to the end of March.

The authors say: "The in-ICU mortality from COVID-19, at around 40%, remains almost twice that seen in ICU admissions with other viral

pneumonias, at 22%."

There are, say the authors, several explanations for the findings regarding decreasing ICU mortality over time. They say: "It may reflect the rapid learning that has taken place on a global scale due to the prompt publication of clinical reports early in the pandemic. It may also be that ICU admission criteria have changed over time, for example, with greater pressure on ICUs early in the pandemic surge."

They add the findings are also likely to reflect the fact that long ICU stays, for example, due slow weaning from a ventilator, take time to be reflected in the data. Critical illness associated with COVID-19 can last for long periods, with approximately 20% of UK ICU admissions lasting more than 28 days, and 9% more than 42 days. They say: "The important message, however, is that as the pandemic has progressed and all these factors combine, survival of patients admitted to ICU with COVID-19 has significantly improved."

The ICU mortality did not differ significantly across continents despite some evidence of variations in admission criteria, treatments delivered and the thresholds for their application. The authors say this is consistent with research findings up until the end of May suggesting that no specific therapy reduces ICU mortality. In the last few weeks dexamethasone has been found to have significant benefit and there is hope this will improve survival further.

They conclude: "This [systematic review](#) and meta-analysis of ICU outcome in patients with COVID-19 found an in-ICU mortality rate of 41.6% across international studies. There were no significant effects of geographical location, but reported ICU mortality fell over time. Optimistically, as the

pandemic progresses, we may be coping better with COVID-19."

Provided by AAGBI

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