Improving Survival of Critical Care Patients With COVID-19 in England

Data from the UK suggests that there has been an improvement in the survival of hospitalised patients with COVID-19 in recent months. Case-fatality rate of hospitalised patients declined from 6% in April 2020 to 1.5% by July 2020.

A possible explanation for this shift may be the fact that there has been a shift in the demographics of people admitted with COVID-19. Patients are now younger and overall less comorbid. Therefore, the survival rate has improved. Another possible explanation could be the expansion in in-hospital testing that has resulted in increased identification of potentially asymptomatic and milder cases of COVID-19.

The trend of improving survival was tested in a study to determine if improved survival has also been seen in people with severe COVID-19 requiring critical care and whether the improvement in survival is due to a change in patient demographics.

National data from the COVID-19 Hospitalisation in England Surveillance System (CHESS) were extracted from March till June. CHESS data contains individual-level demographic characteristics including age, sex, ethnicity, admitting hospital and recorded comorbidities. Two cohorts were defined: all patients admitted to high dependency unit (HDU), but not ICU and all patients admitted to ICU. The primary outcome of the study was in-hospital all-cause mortality in the 30 days after hospital admission.

Twenty-one thousand eighty-two patients were eligible for the study, of which 5484 died. 56% of the patients admitted to HDU were male compared with 71% male in the ICU. Mortality risk was highest for people admitted in early March in both HDU and ICU. The risk of mortality improved after the week of March 20 for patients admitted to both HDU and ICU. This improvement in survival was observed after adjustment for patient characteristics (age, sex, ethnicity and comorbidities) and geographic region. Survival improved by 12% per week in HDU and 8.9% in ICU after March 29 onward and up to the week of June 21, 2020. The improvement in survival was consistent across all subgroups and by geographical region (except for the North East and Yorkshire, where improvement was observed in HDU but not ICU).

Findings from this analysis show a substantial improvement in survival for people admitted to critical care with COVID-19 in England, with marked improvement after mid-April compared with earlier in the pandemic. Possible explanations could be temporal changes in disease severity, patient selection for critical care, critical care treatment, hospital capacity and COVID-19 testing. This improving trend remains after adjustment for patient demographics and comorbidities, which suggests that the improvement is not due to changing patient characteristics.

Source: Critical Care Medicine

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