



NEWS

A third of covid-19 patients admitted to UK hospitals die

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A third of patients admitted to hospital with covid-19 in the UK died—putting the fatality rate on a par with Ebola—according to a study which tracked the outcomes of 16 749 patients.

The study—the largest detailed description of covid-19 in Europe—found that being obese, male, or elderly reduces chance of survival.¹

The research was carried out by the ISARIC-4 consortium, a UK wide group of doctors and scientists, who are trying to find out who are the most severely affected by covid-19 and why some people have better outcomes than others. The consortium is funded by a grant from UK Research and Innovation.

Data was gathered from 166 hospitals in England, Scotland, and Wales between 6 February and 18 April by 2468 research nurses, administrators, and volunteer medical students. It has been published as a preprint and has not yet been through a formal peer review process

The near real time analysis of data found that 49% of patients were discharged alive, 33% have died, and 17% continued to receive care. Some 17% of patients needed admission to high dependency or intensive care units. Of these, 31% were discharged alive, 45% died, and 24% continued to receive care at the date of reporting. Of those receiving mechanical ventilation, 20% were discharged alive, 53% died, and 27% remained in hospital.

The chief investigator Calum Semple, from the University of Liverpool, said it's a common misconception that covid-19 is just a bad dose of the flu. "Covid-19 is an incredibly dangerous disease. The crude hospital fatality rate is of the same magnitude as Ebola," he said at a briefing on 29 April organised by the Science Media Centre.

The median age of those admitted to hospital was 72 years, the median duration of symptoms before admission was four days, and the median length of stay in hospital was seven days. The most common recorded comorbidities are chronic cardiac disease (29%), diabetes (19%), chronic pulmonary disease excluding asthma (19%), and asthma (14%). Just under half (47%) of patients had no documented comorbidity.

The most common symptoms of the patients admitted to hospital were cough (70%), fever (69%), and shortness of breath (65%).

However, the study found that 4% of patients presented with only enteric symptoms such as abdominal pain, vomiting, and diarrhoea. The authors warn that this may mean that patients may be misclassified to non-covid-19 care areas and pose an additional risk of transmitting the disease.

Semple said that one of the most striking features they had noticed, which makes the disease very different from influenza, is that covid-19 affects men much more than women. "This difference becomes even more apparent the older you get. At every age group more men than women are affected," he said.

Many of the findings are consistent with studies carried out in China—such as associations with age, male sex, and comorbidity. A novel finding from this study is that people who are obese do particularly badly from covid-19. Obesity was recognised as a risk factor in 2009 for pandemic A/H1N1 influenza although not in 2016 Middle East respiratory syndrome coronavirus.

Although the reasons obese people develop such severe covid-19 are not clear, the researchers believe it could be because they have reduced lung function and possibly more inflammation in adipose tissue which might contribute to an enhanced "cytokine storm"—a potentially life threatening over-reaction of the body's immune reaction.

The study found a high death rate among patients who received ward care without being admitted to critical care—55% were discharged alive, 31% died, and 14% remain in hospital.

Annemarie Docherty, a consultant in critical care and researcher at the University of Edinburgh, said this suggested there was appropriate advanced care planning occurring between patients and doctors. "For covid-19, all we can offer is organ support while people are getting better. For a large number of people in hospital this is just not appropriate and people are unlikely to improve with these interventions," she said.

1 Docherty AB, Harrison EM, Green CA, et al. Features of 16 749 hospitalised UK patients with covid-19 using the ISARIC WHO clinical characterisation protocol. www.medrxiv.org/content/10.1101/2020.04.23.20076042v1.

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