Patients hospitalized with COVID-19 were three times as likely to die than those with seasonal influenza

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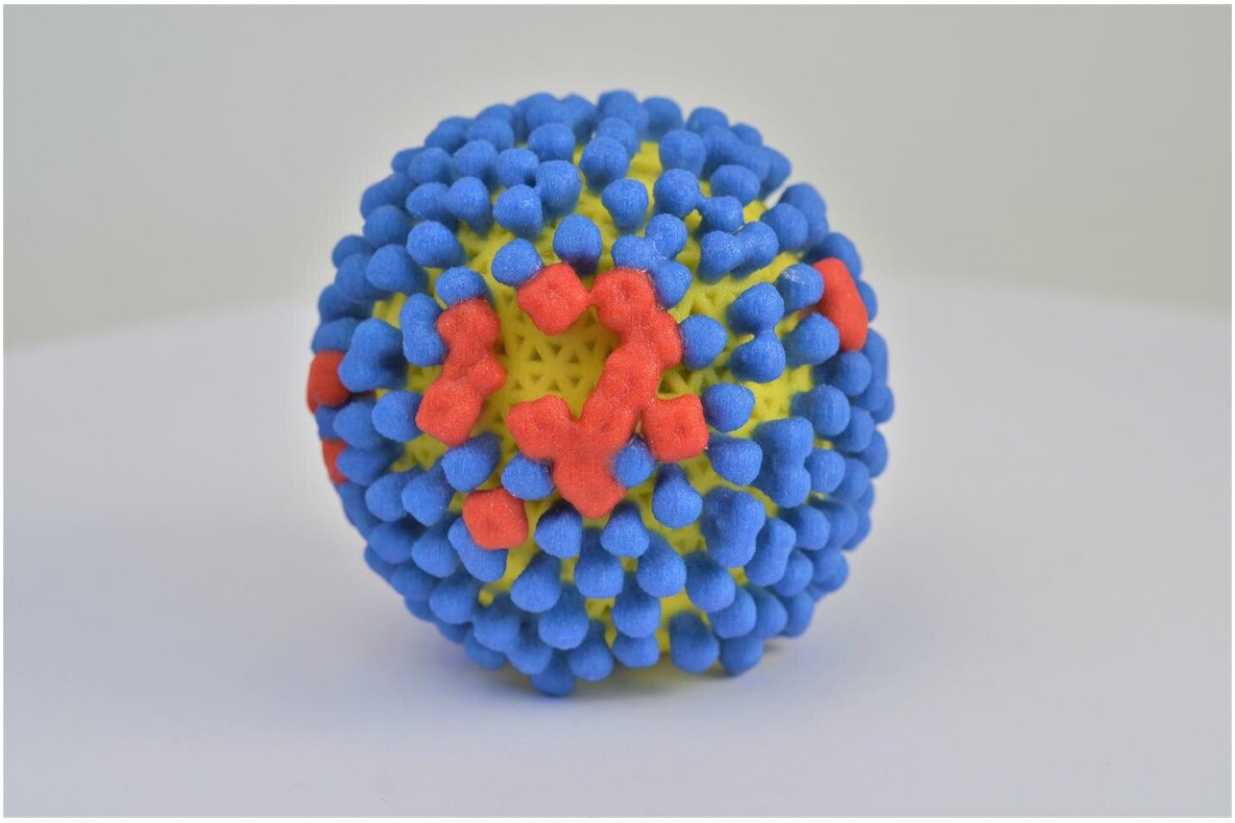

Influenza viruses, like the model shown here, display several kinds of surface proteins on their exteriors. Credit: NIAID

Adults (aged 18 or older) hospitalized with COVID-19 are at higher risk

of complications and death than those with influenza, despite being younger and having fewer chronic illnesses, according to a retrospective cohort study conducted at the Hospital del Mar in Barcelona.

The findings, presented at this year's European Congress of Clinical Microbiology & Infectious Diseases (ECCMID) in Lisbon, Portugal (23-26 April), also suggest that COVID-19 is associated with both longer stays in hospital and intensive care, and costs nearly twice as much to treat.

For the study, researchers examined medical records of 187 patients (average age 76 years, 55% male) admitted to hospital with seasonal influenza infection between 2017 and 2019, and 187 COVID-19 patients (average age 67 years, 49% male) hospitalized during the first wave of the pandemic between March and May, 2020, who all required oxygen therapy at admission. In both cohorts, patients were enrolled consecutively until the required sample size was reached. The study compared clinical characteristics, healthcare resource use outcomes (including length of stay, admission to intensive care), hospital costs, and death.

Influenza patients tended to have more existing chronic illnesses and problems performing activities of daily living than COVID-19 patients, but were less likely to have overweight or obesity (BMI of 25kg/m^2 or more).

The analysis found that COVID-19 was associated with higher risk of infection severity and admission to ICU (26 [14%] influenza vs 69 [39%] for COVID-19; see table in notes to editors). In addition, COVID-19 patients were more likely to experience certain complications such as acute kidney injury, blood clots, and moderate to severe acute respiratory distress syndrome (where the lungs cannot provide the body's vital organs with enough oxygen); while influenza

patients were more likely to suffer from bacterial pneumonia (see table in notes to editors/abstract).

Overall, 29/187 (15%) COVID-19 patients and 10/187 (5%) influenza patients died of any cause within 30-days of hospitalization, and the death rate after 90 days was even higher (19%; 35/187 vs 6%; 12/187). The authors note that there were no differences in mortality trends between the three seasonal influenza periods studied.

After accounting for potential confounders including age, comorbidities, sex, disease severity, presence of pneumonia, and corticosteroid treatment, researchers found that COVID-19 patients were more than three times as likely to die within 30 and 90 days of being admitted to hospital than influenza patients.

Further analyses showed that COVID-19 patients spent far longer in hospital (average [median] 14 days vs 11 days) and ICU (17 vs 10 days) compared with influenza patients. Moreover, the average cost of critical care for COVID-19 patients was almost twice as much as for influenza patients (€21,350 vs €12,082). Pharmacy treatment and testing costs were also significantly higher in the COVID-19 group.

"Our findings suggest COVID-19 is far more lethal than influenza", says lead author Dr. Inmaculada Lopez Montesinos from the Hospital del Mar in Barcelona, Spain. "Despite influenza patients being older and having more comorbid illnesses, COVID-19 patients had consistently worse health outcomes and were considerably more expensive to treat. Even for those people who are lucky enough to survive COVID-19 and make it out of the hospital, they will be forever scarred by the consequences. It is vital that people get fully vaccinated and boosted against both viruses."

The authors acknowledge that several limitations of their study, including that it was conducted in one tertiary-care hospital in Spain, so

the findings might not be generalizable to other populations. They also note that no genotyping studies were conducted, and although it is highly likely that COVID-19 patients were affected by wild-type B.1, the results may not reflect the current scenario in which multiple SARS-CoV-2 variants are circulating globally. Likewise, the absence of vaccinated COVID-19 patients during the study period may not reflect the current profile of inpatients with COVID-19.

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