

Interim study shows effectiveness of one dose of COVID-19 vaccines against hospitalizations in over-80s

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Interim results presented here show the effectiveness of one dose of the Pfizer-BioNTech and Oxford-AstraZeneca vaccines in preventing hospitalization of people in their 80s with multiple comorbidities. The AvonCAP study results are reported for the first time today [3 March]

by researchers from the University of Bristol, University Hospitals Bristol and Weston NHS Foundation Trust (UHBW) and North Bristol NHS Trust (NBT).

AvonCAP, an ongoing surveillance project funded by Pfizer Inc., records detailed information on every adult patient admitted to Bristol's two large NHS hospitals with symptoms, signs and/or X-ray evidence of acute disease in the lungs. The study identified 434 cases from 18 December 2020 (ten days after the UK's COVID-19 [vaccine](#) program began) to 26 February 2021 and who were eligible for vaccination due to being at least 80 years of age by the end of March 2021.

By taking the acute respiratory disease cases who had a positive test for SARS-CoV-2 on hospital admission and those whose test was negative and comparing the immunization rates in the two groups, the effectiveness of one dose of the vaccines has been estimated.

In order to minimize potential biases that could arise due to the rapid changes in the epidemic and the vaccine rollout over this period, the analysis was structured so that comparisons were only made within individual weeks. A measure of social deprivation, whether patients were care home residents and sex—all factors which might influence the risks of getting COVID-19 and of getting immunized—were also considered.

One dose of the Pfizer-BioNTech vaccine, which began to be used on 8 December 2020, was shown to be 71.4 percent effective (95 percent confidence interval [CI] 46.5-90.6) from 14 days after one dose at preventing symptomatic illness severe enough to result in hospitalization. The patients studied had a median age of 87 years.

One dose of the Oxford-AstraZeneca vaccine, which began to be used on 4 January 2021, was shown to be 80.4 percent effective (95 percent CI 36.4-94.5) from 14 days after one dose at preventing symptomatic

illness severe enough to result in hospitalization. The patients studied had a median age of 88 years.

When observations were reconciled to cover the same time period in early 2021, the observed effectiveness of one dose of the two vaccines were almost identical (Pfizer-BioNTech 79.3 percent and Oxford-AstraZeneca 80.4 percent).

These are similar to findings from other studies from Scotland and England made public in recent days. However, the approach taken was different. Instead of linking large databases of test results, immunization records and diagnostic codes for entire populations, this study involved comprehensive and detailed examination of all medical admissions in two admitting hospitals in a single city. This means that the dates of onset of symptoms could be accurately recorded and included in the analysis and compensation made for possible biases due to rapid changes in the vaccine rollout and the transmission of SARS-CoV-2 that occurred during the last three months.

The study also provides very detailed information on the patients who were hospitalized and in whom the vaccines are taking effect. This was a group of very elderly, frail people with many other illnesses and vulnerabilities and it is particularly remarkable that vaccination was able to protect such high-risk people so effectively.

By providing corroborating evidence using a different methodology, the research team provide reassurance that the conclusions now being drawn about the short-term effectiveness of one dose of these two vaccines is valid.

The public health implications of these findings are significant not only for the UK but also for other countries currently developing immunization strategies to protect their vulnerable elderly populations.

Adam Finn, Professor of Paediatrics and Chief Investigator of the study at the University of Bristol, said: "We are very pleased to share these early results that show the UK COVID-19 vaccine program is working better than we could have hoped. We are also delighted our findings could reduce the burden of serious illness in our elderly population and relieve the pressure on the NHS. The AvonCAP study will continue to provide further and more detailed information as time goes on."

Provided by University of Bristol

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