Joseph A Lewnard et al.

Effectiveness of nirmatrelvir–ritonavir in preventing hospital admissions and deaths in people with COVID-19: a cohort study in a large US health-care system

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Abstract

In the USA, oral nirmatrelvir–ritonavir is authorised for use in patients aged 12 years or older with mild-to-moderate COVID-19 who are at risk of progression to severe disease and hospitalisation. We aimed to establish the effectiveness of nirmatrelvir–ritonavir in preventing hospital admissions and death in people with COVID-19 in an outpatient prescribing context in the USA.

Methods

In this matched observational outpatient cohort study in the Kaiser Permanente Southern California (CA, USA) health-care system, data were extracted from electronic health records of non-hospitalised patients aged 12 years or older who received a positive SARS-CoV-2 PCR test result (their index test) between April 8 and Oct 7, 2022, and had not received another positive test result within the preceding 90 days. We compared outcomes between people who received nirmatrelvir–ritonavir and those who did not receive nirmatrelvir–ritonavir by matching cases by date, age, sex, clinical status (including care received, the presence or absence of acute COVID-19 symptoms at testing, and time from symptom onset to testing), vaccination history, comorbidities, health-care seeking during the previous year, and BMI. Our primary endpoint was the estimated effectiveness of nirmatrelvir–ritonavir in preventing hospital admissions or death within 30 days of a positive test for SARS-CoV-2.

Interpretation

In a setting with high levels of COVID-19 vaccine uptake, nirmatrelvir–ritonavir effectively reduced the risk of hospital admission or death within 30 days of a positive outpatient SARS-CoV-2 test.

YanXie et al.

Association of Treatment With Nirmatrelvir and the Risk of Post–COVID-19 Condition

JAMA, March 2023; doi:10.1001/jamainternmed.2023.0743

Abstract

Importance Post–COVID-19 condition (PCC), also known as long COVID, affects many individuals. Prevention of PCC is an urgent public health priority.

Objective To examine whether treatment with nirmatrelvir in the acute phase of COVID-19 is associated with reduced risk of PCC.

Design, Setting, and Participants This cohort study used the health care databases of the US Department of Veterans Affairs (VA) to identify patients who had a SARS-CoV-2 positive test result between January 3, 2022, and December 31, 2022, who were not hospitalized on the day of the positive test result, who had at least 1 risk factor for progression to severe COVID-19 illness, and who had survived the first 30 days after SARS-CoV-2 diagnosis. Those who were treated with oral nirmatrelvir within 5 days after the positive test (n = 35 717) and those who received no COVID-19 antiviral or antibody treatment during the acute phase of SARS-CoV-2 infection (control group, n = 246 076) were identified.

Exposures Treatment with nirmatrelvir or receipt of no COVID-19 antiviral or antibody treatment based on prescription records.

Main Outcomes and Measures Inverse probability weighted survival models were used to estimate the association of nirmatrelvir (vs control) with post–acute death, post–acute hospitalization, and a prespecified panel of 13 post–acute COVID-19 sequelae (components of PCC) and reported in relative scale as relative risk (RR) or hazard ratio (HR) and in absolute scale as absolute risk reduction in percentage at 180 days (ARR).

Conclusions and Relevance This cohort study found that in people with SARS-CoV-2 infection who had at least 1 risk factor for progression to severe disease, treatment with nirmatrelvir within 5 days of a positive SARS-CoV-2 test result was associated with reduced risk of PCC across the risk spectrum in this cohort and regardless of vaccination status and history of prior infection; the totality of findings suggests that treatment with nirmatrelvir during the acute phase of COVID-19 may reduce the risk of post–acute adverse health outcomes.

VasilikiTsampasian et al.
Risk Factors Associated With Post–COVID-19 Condition - A Systematic Review and Meta-analysis
JAMA, March 2023; doi:10.1001/jamainternmed.2023.0750
Abstract
Importance Post–COVID-19 condition (PCC) is a complex heterogeneous disorder that has affected the lives of millions of people globally. Identification of potential risk factors to better understand who is at risk of developing PCC is important because it would allow for early and appropriate clinical support.

Objective To evaluate the demographic characteristics and comorbidities that have been found to be associated with an increased risk of developing PCC.

Data sources Medline and Embase databases were systematically searched from inception to December 5, 2022.

Study Selection The meta-analysis included all published studies that investigated the risk factors and/or predictors of PCC in adult (≥18 years) patients.

Data Extraction and Synthesis Odds ratios (ORs) for each risk factor were pooled from the selected studies. For each potential risk factor, the random-effects model was used to compare the risk of developing PCC between individuals with and without the risk factor. Data analyses were performed from December 5, 2022, to February 10, 2023.

Main Outcomes and Measures The risk factors for PCC included patient age; sex; body mass index, calculated as weight in kilograms divided by height in meters squared; smoking status; comorbidities, including anxiety and/or depression, asthma, chronic kidney disease, chronic obstructive

pulmonary disease, diabetes, immunosuppression, and ischemic heart disease; previous hospitalization or ICU (intensive care unit) admission with COVID-19; and previous vaccination against COVID-19.

Conclusions and Relevance This systematic review and meta-analysis demonstrated that certain demographic characteristics (eg, age and sex), comorbidities, and severe COVID-19 were associated with an increased risk of PCC, whereas vaccination had a protective role against developing PCC sequelae. These findings may enable a better understanding of who may develop PCC and provide additional evidence for the benefits of vaccination.