Emulated target trial: The effect of remdesivir and nirmatrelvir/ritonavir on mortality in patients hospitalized with COVID-19 during the Omicron era

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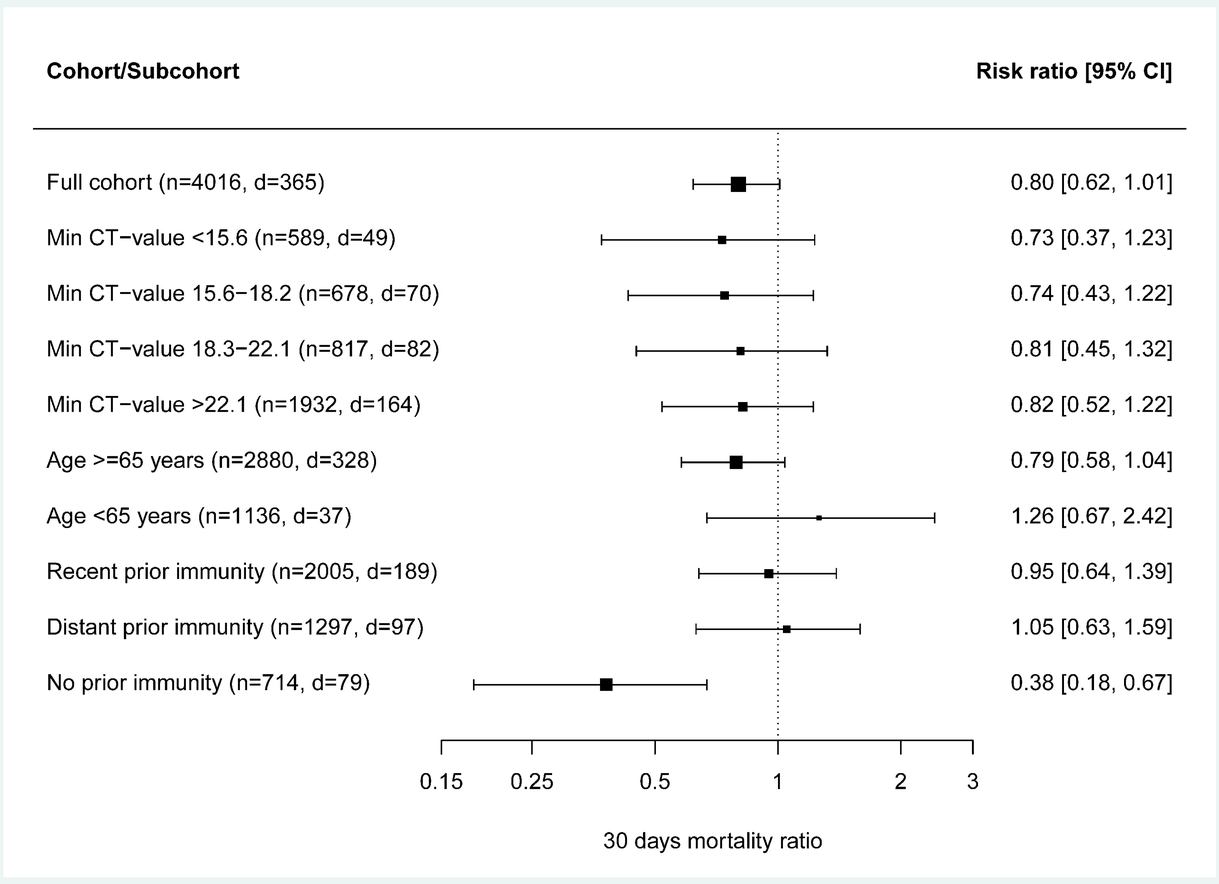
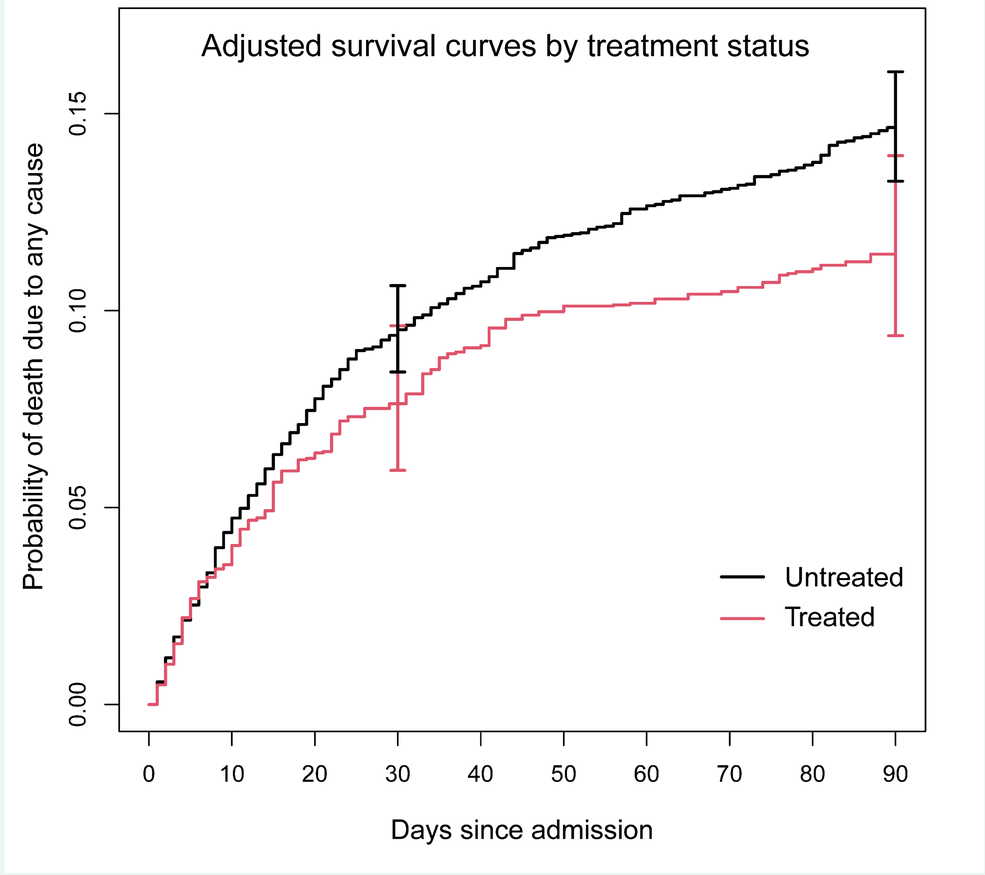
Conclusion

Treatment with remdesivir and/or nirmatrelvir/ritonavir was associated with reduced mortality in hospitalized SARS-CoV-2 infected patients during the Omicron era, primarily in unvaccinated individuals without previous infection





Results

The adjusted risk ratio:

- 0.80 (95% CI, 0.62–1.01) for 30-day mortality
- 0.78 (95% CI, 0.63–0.97) for 90-day mortality

Safety analyses revealed no substantial risk with antiviral treatment

Study population

4016 patients >18 years admitted via the emergency department with a diagnosis indicating infection and a positive polymerase chain reaction SARS-CoV-2 test

2173 Men

1843 Women

Median [IQR] age, 75 [62-83] years

Exposure

771 antiviral treatment within 3 days

651 remdesivir

105 nirmatrelvir/ritonavir

15 treated with both drugs

3245 no antiviral treatment within 3 days

Outcomes

- 30-day mortality (overall n=365)
- 90-day mortality (overall n=554)
- New-onset kidney failure, liver failure, or cardiac arrhythmia

Study design and setting

- Population-based retrospective cohort study of hospitalized patients
- 6 acute care hospitals in Stockholm, Sweden during the Omicron era
- Designed as an emulated target trial, analyzed using cloning, censoring, and inverse probability weighting with no loss to follow-up
- Accounted for socio-economic status, comorbidities, viral load, corticosteroids, disease severity, and vaccination/prior infection

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