744

Hybrid Immunity Associated With Faster Symptom Resolution Among Adults With SARS-CoV-2 Infection

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BACKGROUND

- While prior vaccination and infection have been shown to play a protective role against infection, little is known about their impact on acute symptom resolution.
- In this study we identified predictors of symptom resolution in acute COVID-19.

METHODS

VISION

- Prospective observational study of adults (≥18yrs of age) with acute COVID-19 in North Carolina
- Tested positive for SARS-CoV-2 within prior 7 days
- 26 symptoms asked daily for 14 days (online survey)

Statistical Methods

- Probability of symptom resolution: Inverse probability censoring weighted (IPCW) Kaplan-Meier curves
- 14-day restricted mean survival time (RMST)
- RMST differences, 95% confidence intervals (bootstrap)

Analysis Eligibility Criteria

- Symptom onset ≤ 7 days prior to enrollment
- Complete covariate data needed for IPCW

Endpoint: time of symptom resolution

- First of 2 consecutive days reporting no symptoms

Characteristic	N = 2,731[1]
Sex at birth	
Female	2,006 (73%)
Male	724 (27%)
# prior infections, vax recency	
No prior infections, Vaccinated ≤ 6 months	670 (25%)
No prior infections, Vaccinated > 6 months	785 (30%)
No prior infections, Unvaccinated	74 (2.8%)
1+ prior infections, Vaccinated ≤ 6 months	340 (13%)
1+ prior infections, Vaccinated > 6 months	735 (28%)
1+ prior infections, Unvaccinated	57 (2.1%)

TABLE 1: Baseline Characteristics; [1]n (%)

Hybrid immunity is associated with a 2.7 day faster symptom resolution than no prior vaccination/infection during the first 14 days of acute COVID-19

RESULTS

- Overall estimated probability of acute symptom resolution at 14 days since symptom onset = 53%

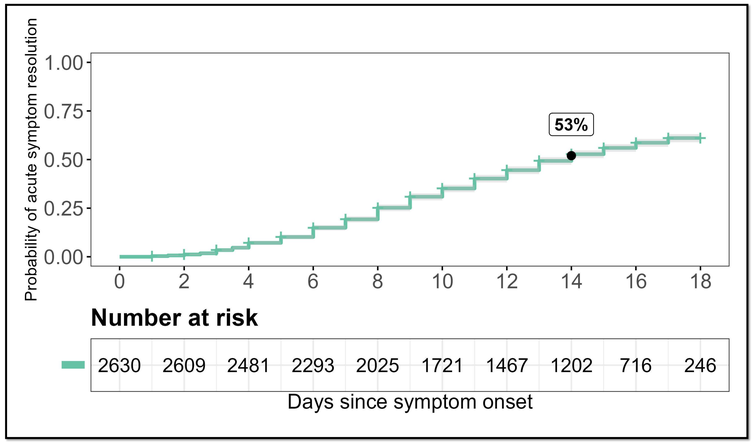


Figure 1: Overall cumulative probability (95% CI) of acute symptom resolution.

Characteristic	N = 2,731[1]
Age (yr)	
Median (Q1, Q3)	47 (36, 61)
18 – 34	616 (23%)
35 – 49	908 (33%)
50 – 64	679 (25%)
65+	528 (19%)

TABLE 1 (cont.); [1]n (%)

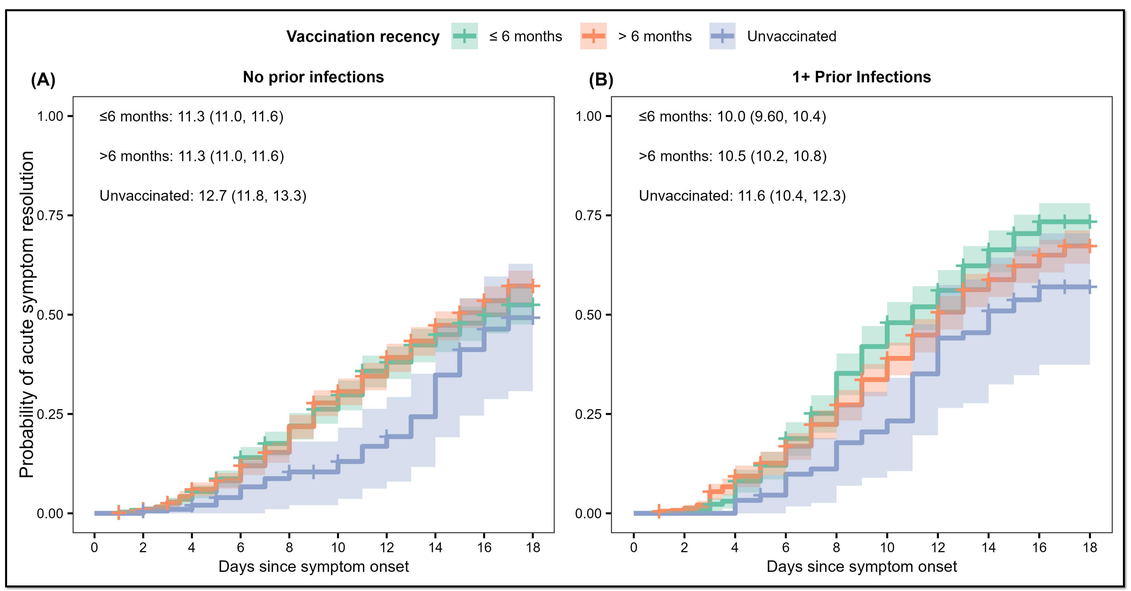


Figure 2: Cumulative probability (95% CI) of acute symptom resolution stratified by hybrid immunity. Plot annotations are 14-day RMST estimates and 95% CIs (days).

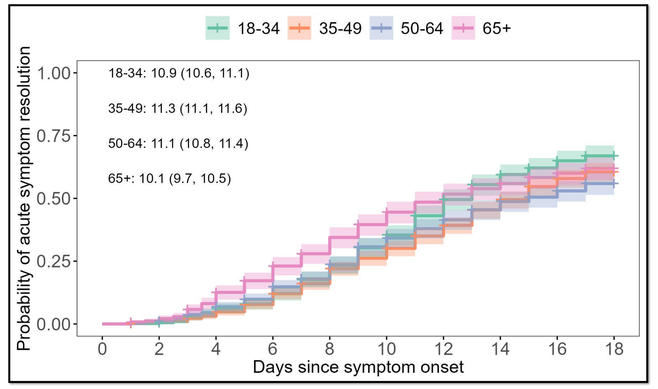


Figure 3: Cumulative probability (95% CI) of acute symptom resolution stratified by age. Plot annotations are 14-day RMST estimates and 95% CIs (days).

CONCLUSIONS

- **Unvaccinated** adults, with or without prior infection, had the lowest cumulative probability of acute symptom resolution.
- These findings suggest that vaccination has a beneficial effect on acute COVID-19 symptom resolution.
- The faster resolution of acute COVID-19 symptoms in **older** adults (65+) showed faster acute symptom resolution, potentially resulting from more recent vaccination.

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PLAIN LANGUAGE SUMMARY

Vaccination was associated with a faster time to acute COVID-19 symptom resolution.