

SARS-CoV-2

Antibody Test Results and Infection Risk

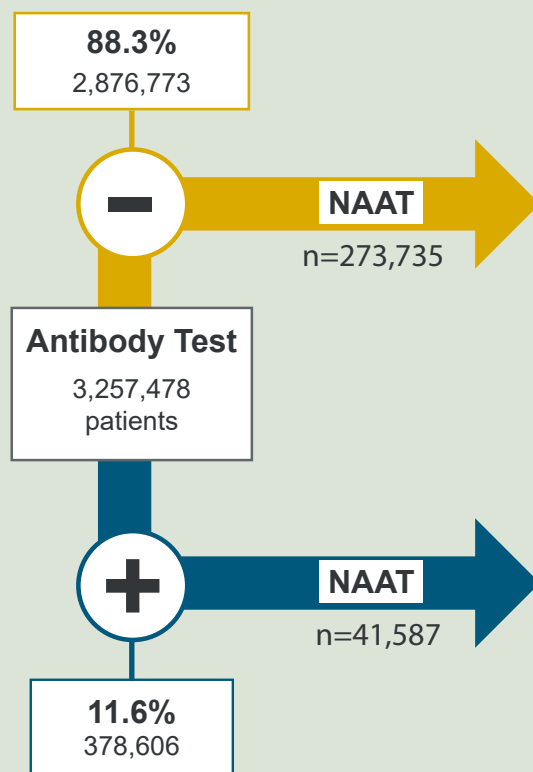
? How are SARS-CoV-2 antibody test results related to risk of future SARS-CoV-2 infection?

Background

SARS-CoV-2 antibodies are useful markers of prior SARS-CoV-2 infection. However, the relationship between SARS-CoV-2 antibodies and risk of future SARS-CoV-2 infection is not well understood.

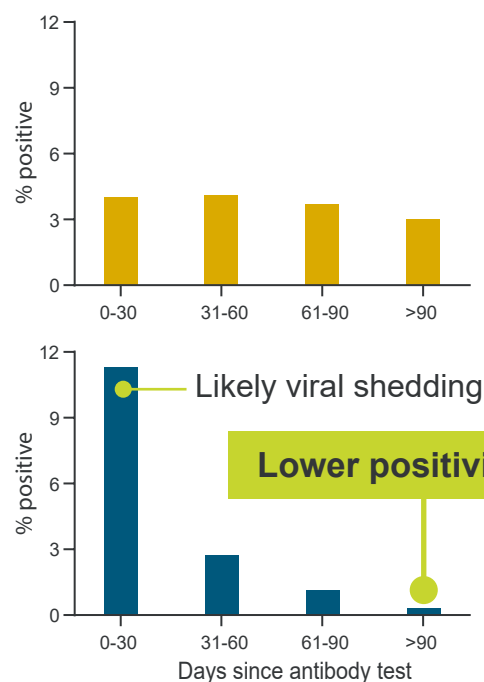
Methods and Results

SARS-CoV-2 NAAT Results Following Antibody Testing



Subsequent Rates of Positive NAAT Tests

315,322 patients had ≥ 1 NAAT test after an antibody test



NAAT, nucleic acid amplification test

→ People with positive SARS-CoV-2 antibody results may have decreased risk of future SARS-CoV-2 infection.

SARS-CoV-2 Antibody Test Results and Infection Risk

Article Title: Association of SARS-CoV-2 Seropositive Antibody Test With Risk of Future Infection

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Background

- Most people who recover from SARS-CoV-2 infection develop antibodies. However, evidence suggesting a protective role of antibodies against future infection is limited.^{1,2}
- Reinfection has been reported in patients with SARS-CoV-2 antibodies, suggesting that seropositivity does not provide complete protection against subsequent infection.^{3,4}
- Understanding the role of serostatus in reinfection may help guide the public health response to the COVID-19 pandemic, including the identification of at-risk populations and deployment of vaccines.
- **Objective:** In this retrospective study, investigators compared the subsequent risk of SARS-CoV-2 infection between patients with past negative and those with past positive antibody test results.

Methods

- Using deidentified data from US commercial laboratories, patients who had an initial SARS-CoV-2 antibody test after December 2019 were categorized according to their test result as seropositive (Ab+), seronegative (Ab-), or having inconclusive serologic results.
- Results of subsequent diagnostic nucleic acid amplification tests (NAATs) were tracked across 4 intervals of 30 days each (0-30, 31-60, 61-90, >90 days) through August 26, 2020.
- Patients were categorized as positive within an interval if they had at least 1 positive NAAT result during that interval.

Results

- A total of 3,257,478 patients were categorized based on an initial SARS-CoV-2 antibody test result:
 - Ab+: 378,606 (11.6%)
 - Ab-: 2,876,773 (88.3%)
 - Inconclusive: 2,099 (0.1%)
- Among patients who were initially Ab+, SARS-CoV-2 positivity by NAAT decreased over the 4 intervals.
 - 0-30 days: 11.3%; 31-60 days: 2.7%; 61-90 days: 1.1%; >90 days: 0.3%
- Among patients who were initially Ab-, PCR positivity remained fairly consistent over the 4 intervals.
 - 0-30 days: 4.0%; 31-60 days: 4.1%; 61-90 days: 3.7%; >90 days: 3.0%

Conclusions

- These findings indicate that patients who are seropositive for SARS-CoV-2 antibodies are initially more likely to test positive for SARS-CoV-2 by NAAT, consistent with ongoing viral activity,⁵ than seronegative patients.
- However, patients who are seropositive may be at decreased future risk of SARS-CoV-2 infection; thus, seropositivity may be associated with protection from infection.

References

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