

Clinical Characteristics of Patients Returning to Emergency Department With Initial False-Negative Reverse Transcriptase Polymerase Chain Reaction (RT-PCR)-Based COVID-19 Test

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RESEARCH QUESTION

What demographic, historical, clinical, laboratory, or imaging findings are associated with a false-negative Covid-19 test in the emergency department?

BACKGROUND

Accuracy of COVID-19 testing by RT-PCR is still under investigation

The “window period” after infection in which testing is most likely to produce false-negative results is not well defined

False-negative COVID-19 test results may increase spread of infection and waste medical resources

METHODS

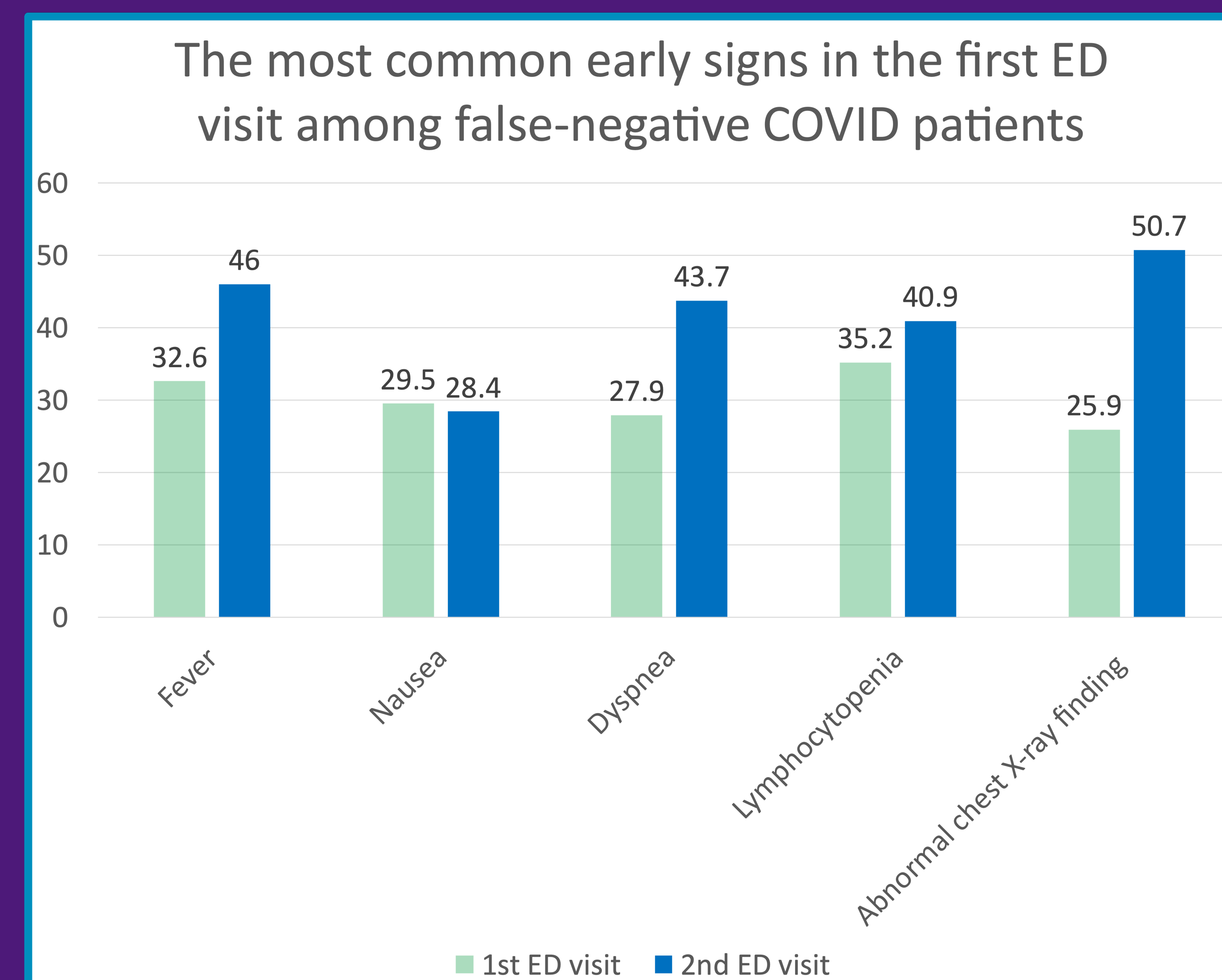
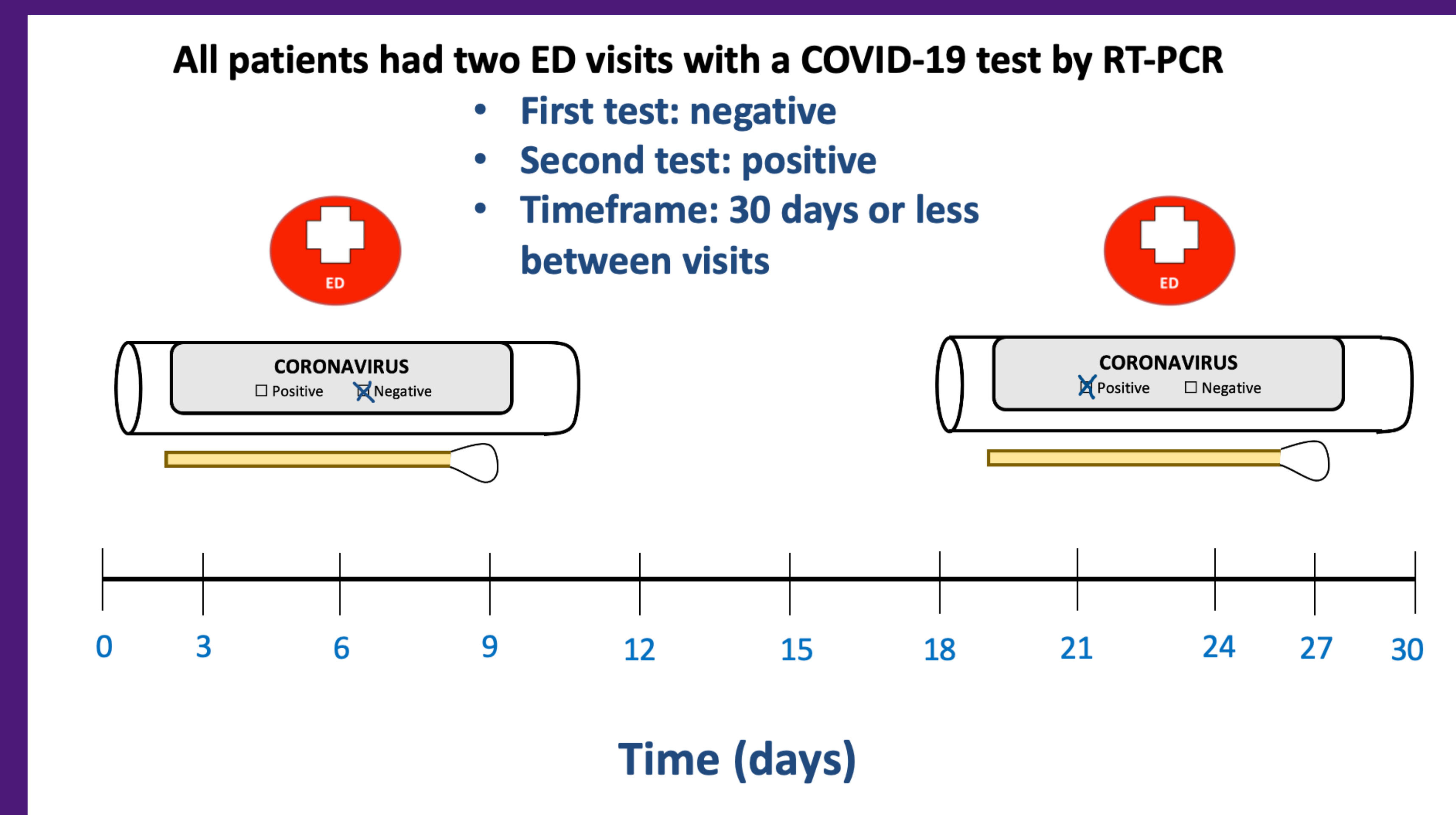
Retrospective, multi-center cohort study from 12 Baylor Scott and White Health (BSWH) Emergency Departments

Patients visiting the EDs of these hospitals from June 1 to August 31, 2020, were screened.

Patients who tested negative for viral RNA by RT-PCR test in the first ED visit and positive in the second ED visit were included.

The primary outcome was the comparison of clinical characteristics between the two ED visits

False-negative Covid-19 results were associated with early testing, fever, nausea, lymphocytopenia, and dyspnea.



RESULTS

We screened 23,687 patients and, a total of 88 patients were included.

Patient-reported symptom duration was shorter for the first ED visit compared to the second (2.6 ± 0.3 days versus 3.6 ± 0.4 days, p -value=0.02).

The findings from the first ED encounter that were most associated with Covid-19 in our sample were lymphocytopenia (35.2%), fever (32.6%), nausea (29.5%), and dyspnea (27.9%).

DISCUSSION

Early COVID-19 testing within three days of symptom onset or less may be associated with false-negative results.

Understanding risk factors for a false-negative Covid-19 PCR test result can guide clinical management, patient education, and resource allocation

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