Key Summary of Published Article

SARS-CoV-2
Antibody Positivity and Vitamin D Levels

Are vitamin D levels associated with SARS-CoV-2 antibody positivity?

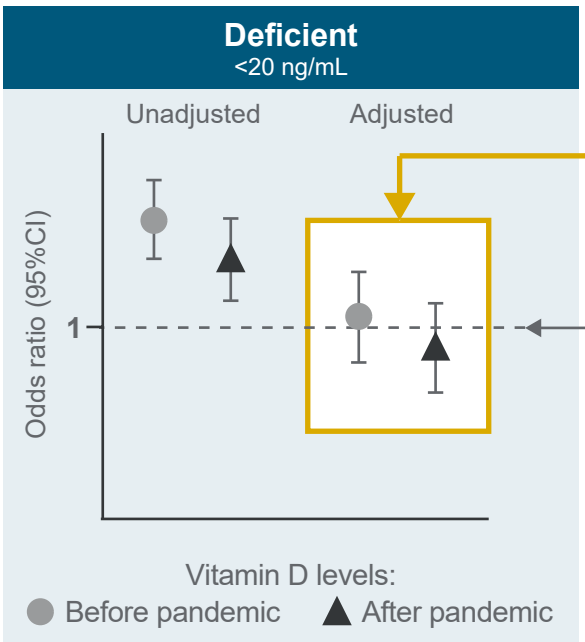
Background

Low vitamin D levels have been associated with increased risk of SARS-CoV-2 infection. This study examined whether this association remains when controlling for other SARS-CoV-2 risk factors.

Methods and Results

- The associations of SARS-CoV-2 positivity with vitamin D deficiency and insufficiency before (Sep 2019-Jan 2020) and during (Aug-Nov 2020) the pandemic were assessed among 18,148 participants in an employer-sponsored health screening program.
- Analyses adjusted for potential confounding factors, including age, sex, race, education, body mass index, blood pressure, smoking status, and geography.

Risk of SARS-CoV-2 Antibody Positivity With Vitamin D Levels

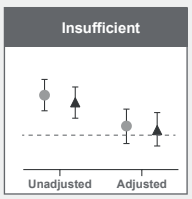


Vitamin D deficiency before or during the pandemic was not associated with COVID-19 seropositivity.

An odds ratio of 1 indicates no difference in odds of COVID-19 antibody positivity.

A ratio >1 indicates higher odds of positivity.

Results were similar for vitamin D insufficiency (<30 ng/mL).



After adjusting for other risk factors, low vitamin D levels were not associated with SARS-CoV-2 antibody positivity.

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Key Summary of Published Article

SARS-CoV-2
Antibody Positivity and Vitamin D Levels

Article Title: Assessment of the Association of Vitamin D Level With SARS-CoV-2 Seropositivity Among Working-Age Adults

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Background

- Some studies have shown that low vitamin D levels are associated with an increased risk of SARS-CoV-2 infection.[1,2]
- However, the association could be affected by factors such as race, age, sex, and geographic location. For example, Black individuals, who are more likely to have COVID-19, also tend to have lower levels of vitamin D compared to non-Hispanic White individuals.[3,4]
- **Objective:** In this study, investigators examined whether low levels of vitamin D are independently associated with SARS-CoV-2 seropositivity as a marker of previous infection after adjusting for other risk factors.

Methods

- Deidentified test results from an employer-sponsored screening program were retrospectively analyzed to assess associations of vitamin D deficiency (<20 ng/mL) and insufficiency (<30 ng/mL) with COVID-19 seropositivity.
  - SARS-CoV-2 serologic results were obtained from a screening period during the COVID-19 pandemic (August-November 2020).
  - Vitamin D results were also obtained from the same period and a period before the pandemic (September 2019-January 2020).
- Analyses controlled for potential confounding factors such as age, sex, race, education, body mass index, blood pressure, smoking status, and geographic location. Results above a threshold (eg, <20 vs ≥20 ng/mL) were used as the reference group for odds ratios.

Results

- The study population consisted of 18,148 working-age adults.
- Before adjustment for other risk factors, SARS-CoV-2 seropositivity was associated with having low vitamin D (<20 or <30 ng/mL) before and during the pandemic; odds ratios (ORs) ranged from 1.28 to 1.47, depending on level and time period.
- After adjusting for other risk factors, SARS-CoV-2 seropositivity was not associated with having vitamin D deficiency (<20 ng/mL) either before or during the pandemic:
  - Before: OR, 1.04; 95% CI, 0.88-1.22
  - During: OR, 0.93; 95% CI, 0.79-1.09
- Similarly, SARS-CoV-2 seropositivity was not associated with having vitamin D insufficiency (<30 ng/mL) either before or during the pandemic:
  - Before: OR, 1.09; 95% CI, 0.93-1.27
  - During: OR, 1.05; 95% CI, 0.91-1.23

Conclusions

- The findings of this large retrospective study suggest that SARS-CoV-2 seropositivity is not independently associated with low vitamin D levels after adjusting for certain risk factors.

References

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