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Vitamin D Deficiency in COVID-19 Quadrupled Death Rate

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Results Adjusted for Multiple Confounders

De Smet and colleagues looked at serum 25-hydroxyvitamin D (25(OH)D) levels in 186 patients hospitalized for severe COVID-19 infection as a function of radiologic stage of COVID-19 pneumonia as well as the association between vitamin D status on admission and COVID-19 mortality.

Cognizant of the potential for confounding by multiple factors, they adjusted for age, sex, and known vitamin D–affected comorbidities such as diabetes, chronic lung disease, and coronary artery disease.

Patients were hospitalized from March 1 to April 7, 2020 (the peak of the first wave of the pandemic) at their institution, AZ Delta General Hospital, a tertiary network hospital.

The mean age of patients was 69 years, 41% were women, and 59% had coronary artery disease. Upon admission to hospital, median vitamin D level was 18 ng/mL (women, 20.7 ng/mL; men, 17.6 ng/mL).

A remarkably high percentage (59%, 109/186) of patients with COVID-19 were vitamin D deficient (25(OH)D < 20 ng/mL) when admitted (47% of women and 67% of men), write the authors.

"What surprises me," said Teitelbaum, is that almost 60% "of these patients had 25(OH)D under 20 ng/mL but most clinicians consider under 50 to be low."

All patients had a chest CT scan to determine the radiologic stage of COVID-19 pneumonia and serum vitamin D measurement on admission. Radiologic stage of pneumonia was used as a proxy for immunologic phase of COVID-19.

Vitamin D Deficiency Correlated With Worsening Pneumonia

Among men, rates of vitamin D deficiency increased with advancing disease, with rates of 55% in stage 1, 67% in stage 2, and up to 74% in stage 3 pneumonia.

There is therefore "a clear correlation between 25(OH)D level and temporal stages of viral pneumonia, particularly in male patients," write the authors.

"Vitamin D dampens excessive inflammation," said Teitelbaum. "In these patients with acute respiratory distress syndrome, the immune system has gone wild."

"The study was carried out in Belgium, so there's less sunlight there than some other places, but even here in Hawaii, with plenty of sunshine, we have vitamin D deficiency," he added.

"More studies are needed, but I think there are enough data to suggest a multivitamin should be used to aid prophylaxis, and this is reflected in [some] infectious disease recommendations," he noted.

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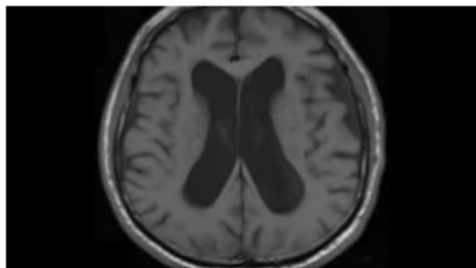
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