

COVID-19 and vitamin D deficiency, a fatal combination?

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Dear Editor,

On February 27th, 2020, the novel coronavirus (COVID-19) infection was diagnosed in a Dutch patient. Since then, citizens of the Netherlands have been inundated with advice. All intended to slow down the spread of the disease and perhaps make it less fatal.

On March 15th, 2020, the National Institute for Public Health and the Environment (RIVM) reported that 20 people had died from the virus. Most were elderly, older than 70 years of age, and they had underlying health conditions such as diabetes, cardiovascular or pulmonary disease. My question is: "How was the vitamin D status of these people?" This vitamin, in addition to bone and calcium homeostasis, modulates the immune response and thereby reduces the susceptibility to acute respiratory tract infection.¹

According to the Health Council of the Netherlands, elderly people are vitamin D deficient. They require a daily vitamin D supplement of 10 to 20 micrograms in order to reduce the risk of bone fractures. Furthermore the Council defines subgroups for people between the ages of 4 and 70 and advises them to take an additional 10 micrograms of vitamin D daily. These subgroups are: children, adolescents, and adults who have hardly any daily exposure to the sun, or who avoid exposure to sunlight or wear concealing clothes.² Why has this advice not been repeated during this epidemic? It would feed two birds with one stone.

However, it is even not too late for the vitamin D deficient patient in the ICU. Wang et al. describe that COVID-19 patients treated in the ICU, compared with patients

not treated in the ICU, have significantly higher serum procalcitonin levels.³ Fortunately, three years earlier, an Iranian randomised double-blind, placebo-controlled trial demonstrated that intramuscular vitamin D significantly lowers the mortality rate in vitamin D deficient patients with ventilator-associated pneumonia and high serum procalcitonin levels.⁴

Summarising, elderly people should be strongly advised to take a daily vitamin D supplement of 10 to 20 micrograms during this epidemic. In COVID-19 patients, the vitamin D status should be evaluated and in case of a deficiency, parenteral vitamin D given.

DISCLOSURE

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