Can Vitamin D reduce COVID-19 infections and severity? A Systematic Review

Omar Selim

Swansea University Medical School

Introduction: The aim of this literature review is to investigate whether Vitamin D can reduce COVID-19 infections, deaths and severity. COVID-19 is an unprecedented disease with infection and death figures significantly larger than previous coronavirus outbreaks such as SARS and MERS. Studies have found Vitamin D to reduce the risk of microbial infections. Furthermore, studies have reported an association between Vitamin D deficiency and respiratory infections such as pneumonia and acute respiratory distress syndrome.

Method: In terms of search strategy, PubMed and Cochrane were searched using relevant keywords. Additional filters were applied and only papers comprising pooled analysis from RCTs were included. A final list of 5 studies were obtained.

Results: Analysis of these studies focused on the effect of Vitamin D supplementation on some or all of the following; mortality; length of hospital stay; need for invasive ventilation; ICU admittance rate; inflammation levels and COVID-19 test negativity. The results suggested that the evidence was too weak to support any link between Vitamin D and mortality, length of hospital stay or need for ventilation. The strongest evidence showed that Vitamin D had an effect on reducing fibrinogen levels and COVID-19 test negativity. Evidence pointed to no Vitamin D effect on other inflammatory indicators, however, Vitamin D may have an effect on lowering ICU admission rates.

Conclusion: To conclude, there may be some benefit to administering Vitamin D to COVID-19 patients, however more RCTs with large sample sizes are required for a better understanding of the effect of Vitamin D on COVID-19 infected individuals.

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