Vitamins K2 and D3 Improve Long COVID Index, fungal translocation, and Inflammatory Biomarkers

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BACKGROUND

- Long COVID (LC) is associated with fungal translocation, gut dysfunction, and enhanced systemic inflammation.
- There is **no approved treatment** for this condition.
- The anti-inflammatory effect of vitamins K2 and D3 was shown to help attenuate the course of acute COVID-19 infection.
- This trial aims to investigate the effects of vitamins K2/D3 on LC symptoms resolution, as well as on markers of gut integrity and systemic inflammation.

METHODS

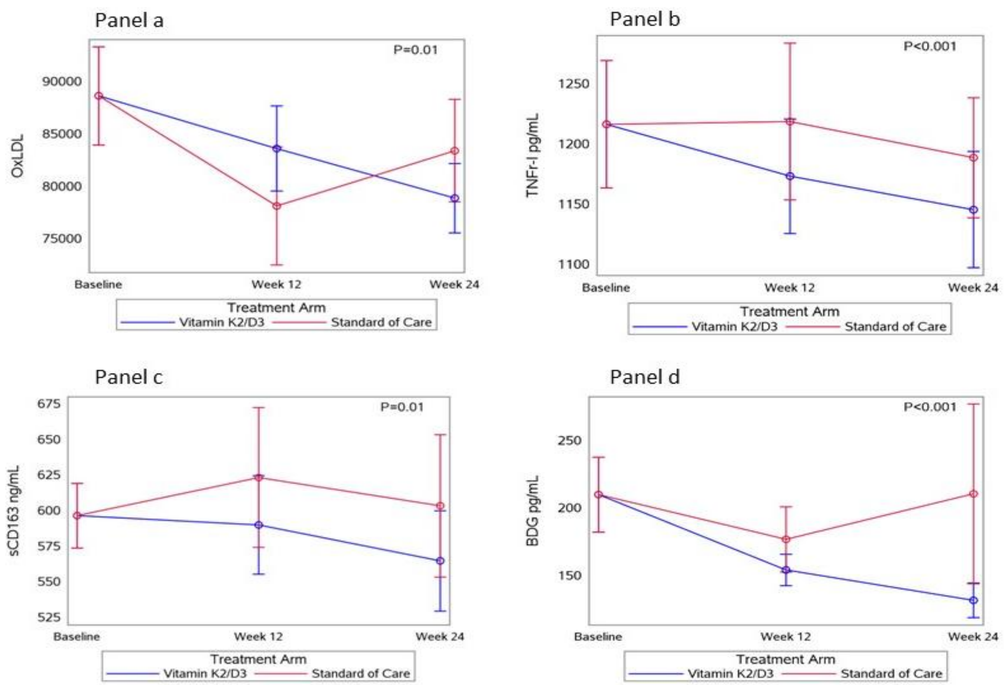
- Single-site randomized controlled study.
- Inclusion criteria: adults experiencing ≥2 moderate LC symptoms ≥3 months after a COVID-19 infection.
- The RECOVER Long COVID Research Index (LRI) and the number and type of LC symptoms were collected.
- Randomization: 2:1 to daily 240 µg K2 (pure MK-7 form) and 2000 UI vitamin D3 or standard of care (SOC) for 24 weeks.
- Endpoints: changes in symptomatology and in LRI, and in inflammatory, metabolic, and gut integrity biomarkers at 24 weeks.

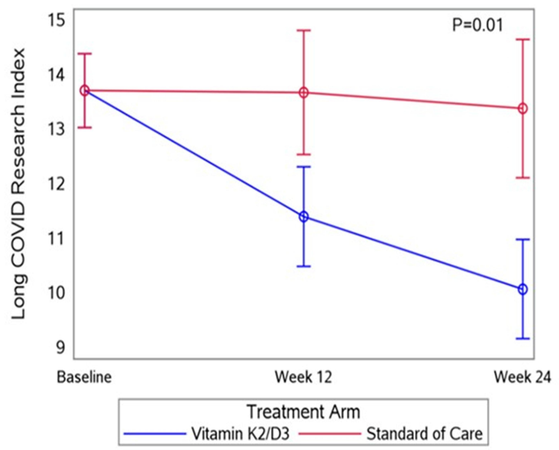
Vitamins K2/D3 improved Long COVID Index, and markers of gut integrity & systemic inflammation.

Vitamins K2/D3 provide a *promising* **safe** intervention for people suffering from long COVID.

RESULTS

- 151 participants enrolled (n = 98 vit K2/D3 and 53 SOC).
- The median age was 46 years; 71% were female and 29% were non-white.





- At 24 weeks:
  1. Only the Vit K2/D3 group had an increase in 25(OH) D, indicating good treatment adherence.
  2. 7.1% decrease in the proportion who had an LC Index ≥12 In the vit K2/D3 arm **VS.** a 7.2% increase in the SOC group; p=0.01.
  3. The average number of LC symptoms differed between arms (p = 0.03).
  4. Reductions in oxidized LDL, inflammatory markers sTNF-RI and sCD163, and fungal translocation marker (1,3)-β-d-glucan were observed in the vitamin K2/D3 arm compared to the SOC arm (p < 0.01).

CONCLUSIONS

Daily dose of 2000 IU of vitamin D3 and 240 µg of vitamin K2 over 24 weeks could help improve symptoms of long COVID, attenuate the hyper-inflammatory state and reduce fungal translocation in people suffering from LC.

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