

Coenzyme Q10 therapy in patients with post COVID-19 condition

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We commend Hansen and colleagues¹ for reporting the randomized, double-blind, crossover trial which investigated the use of high-dose coenzyme Q10 (CoQ10) in patients with post COVID-19 condition (PCC). Despite being purported as one of the potential interventions for PCC due to their ability to reverse mitochondrial dysfunction in patients with PCC,² the trial¹ reported no significant reduction in the number nor severity of PCC-related symptoms with the use of CoQ10.

Mitochondrial dysfunction due to COVID-19 may be related to the over-secretion of cytokines, including interleukin-6 (IL-6) found in patients with COVID-19. Previously, it has been shown that the secretion of IL-6 impedes mitochondrial oxidative phosphorylation and initiates intracellularly mitochondrial production of reactive oxygen species.³ In fact, a recent systematic review and meta-analysis of 22 studies observed that increased IL-6 level correlates significantly with PCC.⁴

While CoQ10 supplementation can effectively reduce IL-6 levels, such reduction is seemingly impaired in patients who are overweight. As reported in a systematic review and meta-analysis,⁵ a significant lowering effect of CoQ10 on IL-6 concentrations was observed in subjects with BMI <26 kg/m² (standardized mean difference [SMD]: -0.30; 95% confidence interval [CI]: -0.56 to -0.04) but not in individuals with BMI ≥26 kg/m² (SMD: -0.32; 95% CI: -0.92 to 0.28).

Notably, more than half of the participants included in the randomized trial¹ reported by Hansen et al. were either overweight or obese. Therefore, we believe it is

worth performing a subgroup analysis on patients with normal/underweight before discarding CoQ10 in our armamentarium against PCC.

Contributors

All authors have equally contributed to conceptualisation, data curation, validation, writing the original manuscript, reviewing and editing.

Declaration of interests

All authors declare no conflict of interests.

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