Curcumin and recovery time in COVID-19 patients

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Curcumin improves recovery time in COVID-19 patients

Published in *Phytotherapy Research,* the findings of a recent clinical trial indicate that curcumin may improve the recovery time of hospitalised patients with mild-to-moderate coronavirus disease-19 (COVID-19) ([1]).

In the open-label non-randomised clinical trial, 41 inpatients diagnosed with mild-to-moderate COVID-19 based on PCR test, lung CT, and clinical signs and symptoms were assigned to either a nano-curcumin group (n=21) or a control group (n=20). The nano-curcumin group received two capsules twice daily containing 40 mg curcuminoids as nanomicelles for 2 weeks. Patients in both groups received standard care, with no significant difference between the nano-curcumin and control group regarding standard treatment ([1]).

Compared to the control group, the nano-curcumin group had faster resolution of symptoms including fever and chills, cough, tachypnoea, and myalgia, and significantly higher lymphocyte counts after 1 week and at discharge.

Atrial O_2 saturation (SaO_2) was significantly higher in the nano-curcumin group after 2, 4, 7, and 14 days of follow-up. The length of supplementation oxygen use and hospitalisation was significantly shorter than the control group.

Nearly half of the patients (47.62%) in the nano-curcumin group experienced complete recovery, including full symptom resolution and normalisation of CRP, SaO_2 and lymphocyte count, compared to 15% in the control group.

In the nano-curcumin group, no patients experienced a deterioration of infection during the 2-week follow-up period, but 40% of the control group did. No significant adverse reactions were reported in the nano-curcumin group ([1]).

As an anti-inflammatory, curcumin has potent inhibitory effects on NF-κB, and several proinflammatory cytokines, including interleukins IL-1, IL-6, and TNF-α. These anti-inflammatory effects may mitigate the pathophysiological and clinical features of COVID-19 ([2],[3],[4]). Furthermore, curcumin has antioxidant, immunomodulatory, anticoagulant, and anti-viral effects ([2],[3],[5]).

Acute respiratory distress syndrome (ARDS) causes pulmonary fibrosis and is the leading cause of COVID-19 mortality, mostly due to cytokine storm induced by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) ([6],[7]). Experimental studies indicate that curcumin can modulate the inflammatory response in viral-induced acute respiratory distress syndrome and suppress pulmonary inflammation, fibrosis, and oedema ([8],[9]).

Curcumin has demonstrated activity against numerous viruses, including influenza and other coronaviruses, by interfering with viral replication cycle, penetration, and cellular signalling ([5],[10]). Recently, curcumin has been shown in *silico* studies (computer simulations) to prevent the entry of the SARS-CoV-2 into cells, by binding to viral proteins and viral attachment sites of ACE2 receptor, as well as inhibiting viral replication ([11],[12],[13]).

The current study is the first human clinical trial to evaluate curcumin efficacy and safety in COVID-19 infection. Results suggest curcumin can significantly improve recovery time from mild-to-moderate COVID-19 infection. Further high-quality, double-blind, randomised controlled trials with larger sample size are required to assess the study's clinical significance, particularly in patients with a more severe form of infection.

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