



ACUPUNCTURE TECHNIQUES

## Can Acupuncture Treat COVID-19 Symptoms? Discussion of Possible Underlying Mechanisms

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Acupuncture has been used for thousands of years for lung diseases such as cough and asthma, according to the *A-B Classic of Acupuncture and Moxibustion*. For example, acupuncture points such as LU 7 can be used to treat cough, and LU 6 can be used for acute shortness of breath and asthma attacks. These points, in combination with LI 4, LI 11 and GV 14, may also be used to treat heat in the lungs, the symptoms seen in pneumonia.

### A Potential Protocol

Acupuncture is known to enhance immune function of the body and therefore to help resist viral infection. In the recent outbreak of coronavirus disease 2019 (COVID-19) in China, Chinese acupuncturists and TCM practitioners widely used acupuncture as an adjunctive therapy for fighting COVID-19. According to recently published guidelines by the China Association of Acupuncture and Moxibustion for treating COVID-19 with acupuncture, the treatment protocol is summarized as follows:

- *Prevention / suspected cases*: moxibustion at ST 36, Ren 6,<sup>6</sup> Ren 12; acupuncture at BL 12, BL 13, BL 20, LI 4, LI 11, LU 5, LU 10, Ren 6, ST 36, SP 6 (choose 1-3 points) for suspected cases.<sup>7</sup>
- *Confirmed cases*: moxibustion at LI 4, LV 3, ST 36, Ren 8; acupuncture at LI 4, LV 3, Ren 22, LU 5, LU 6, ST 36, SP 6, BL 11, BL 12, BL 13, BL 15, BL 17, LU 1, Ren 17, Ren 6, Ren 4, Ren 12 (choose 1-3 points).
- *Recovery cases*: moxibustion at DU 14, BL 13, BL 17, ST 36, LU 6; acupuncture at PC 6, ST 36, Ren 12, ST 25, Ren 6 (choose 1-3 points).



It is suggested that acupuncture may be combined with moxibustion according to the condition, or other options such as acupoint application, ear acupuncture, acupoint injection, scraping, acupoint massage, etc.

#### COVID-19 and the Role of Inflammation

J.T. Wu, et al.,<sup>12</sup> found that severe COVID-19 is related to a cytokine storm, with the most important cytokines being IL-6, TNF- $\alpha$  and IFN- $\gamma$ . In addition, J.R. Tisoncik, et al.,<sup>9</sup> reported that levels of IL-2, IL-7, IL-10, G-CSF, IP10, MCP-1, MIP-1A and TNF- $\alpha$  in severe COVID-19 patients are significantly higher than in non-severe patients. This suggests, as has been proposed, that there is an immune storm of cytokines in severe patients, which further damages the body.

A large number of clinical and laboratory evidence suggests acupuncture can play a neuroimmunologic role by activating the cholinergic anti-inflammatory pathway, reducing the release of a variety of pro-inflammatory factors and inhibiting systemic inflammation. Electroacupuncture at the sciatic nerve controls systemic inflammation by inducing a vague activation of DOPA decarboxylase, leading to the production of dopamine in the adrenal medulla.<sup>10</sup> It suggests that acupuncture selectively activates the neuro-immunologic system, regulating cellular and humoral immunity.

#### Anti-inflammatory Mechanism of Selected Acupuncture Points

Acupuncture at BL 13 may inhibit the excessive production of TNF- $\alpha$ ,<sup>11</sup> and electroacupuncture at ST 36 may reduce the levels of TNF, MCP1, IL-6 and INF- $\gamma$ .<sup>10</sup> This suggests acupuncture at BL 13 and ST 36 may reduce the immune pathological damage caused by viral infection.

Jiannong W., et al.,<sup>3</sup> found that electroacupuncture at ST 36, ST 25, ST 37 and ST 39 may regulate macrophage polarization, significantly improve the level of CD14 / HLA-DR in sepsis patients, and improve the immune function of sepsis patients.

L. Li, et al.,<sup>4</sup> found that electroacupuncture at ST 36 and LU 5 can increase the oxygenation index, decrease the TNF- $\alpha$  concentration in serum and BALF, and increase the IL-12 concentration. It also regulates cellular immunity through the body.

Y. Guang, et al.,<sup>2</sup> found that electroacupuncture at ST 36 and Ren 4 can reduce the inflammatory reaction of sepsis, shortening the length of stay in intensive care units.

In a 2019 study by Z. Liu involving 116 elderly patients with severe pneumonia,<sup>14</sup> it was observed that acupuncture and moxibustion at ST 36, ST 25, Ren 12, Ren 6 and ST 37 could promote the recovery of gastrointestinal function, reduce reflux vomiting, bowel sounds and other symptoms, and avoid coagulation reaction.

In addition, animal experiments have shown that electroacupuncture at LI 4 can promote the survival of rats with lethality endotoxemia.<sup>13</sup> The mechanism of action may be related to the activation of the efferent neural circuit of the autonomic nervous system (such as the cholinergic anti-inflammatory pathway), and can significantly inhibit the level of myocardial inflammation in sepsis rats to play a role in myocardial protection.

#### The Role of Moxibustion

Because severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is homologous with the 2003 SARS virus, the data shows that CD3, CD4 and CD8 cells in the peripheral blood of SARS patients decreased significantly (based on Beijing group of National Emergency Scientific and Technological Action in 2003), and suggests impairment of cellular immune function. The data also shows that moxibustion at Ren 17 could increase the number of CD3 and CD4 cells.

Animal experiments suggest moxibustion at DU 14 positively regulates the immune function of tumor-bearing mice, and improves the transformation rate of T lymphocyte and NK cell activity.<sup>1</sup>

Collectively, this research suggests moxibustion may enhance cellular immune function. The mechanism may be that moxibustion has strong far-infrared radiation penetration: it can penetrate into the epidermis, connective tissue, blood vessels, nervous system, and be absorbed by living tissue, playing a therapeutic role. But we should pay attention to the possibility of moxibustion sensitization.

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