Can hepatitis C virus infection be cured with complementary and alternative medicine?

Abstract

Hepatitis C virus (HCV) infection is among the main causes of chronic liver disease, causing related morbidity and mortality, globally. While the prescription of direct acting antiviral drugs (DAAs) has led to increased cure rates for many patients with HCV, there is still a demand for more promising treatments. Certain natural compounds can decrease the viral load of HCV and prevent further liver damage. While, some of these herbs do not have any therapeutic efficacy and may cause detrimental effects on the patients.

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Letter to editor

Dear Editor,

Hepatitis C virus (HCV) infection is among the leading causes of chronic liver disease, resulting in related morbidity and mortality, globally.¹ HCV is still remained endemic in several countries; and nearly four million new patients with HCV are diagnosed worldwide, annually.² While the prescription of direct acting antiviral drugs (DAAs) has led to increased cure rates for many patients with HCV, there is still a demand for more promising treatments.³ Furthermore, many of the current approved medications are substantially expensive, and are accessible only in the privileged countries.⁴

The practice of complementary and alternative medicine (CAM) has increased worldwide, and CAM showed several beneficial effects for many chronic diseases.⁵ Moreover, many people tend to use CAM, including, Ayurveda, traditional Chinese medicine (TCM), and Unani medicine throughout the world, especially when the conventional treatments fail. According to a previous survey-based study, nearly 80% of patients with HCV infection had used CAM to improve their wellbeing and reduce the symptoms of the disease.⁶ These patients had tried acupuncture, meditation, and herbal supplements such as *Ginseng*, *Echinacea*, and *Ginkgo biloba*, *Silybum marianum* to improve their symptoms.⁷

The previous investigations have showed that several natural compounds could have hepatoprotective efficacies.⁸ As the extract of silymarin, the milk thistle plant (*Silybum marianum*), decreased the viral load of HCV and the fibrosis to cirrhosis progression in patients with chronic HCV infection.^{9–11} Both *in vitro* and *in vivo* studies showed that the silymarin extract could improve HCV infection because of its anti-inflammatory and anti-viral properties.^{12–15} The green tea (*Camellia sinensis*) extract also showed a dose-dependent inhibitory effect on the HCV infection.^{16–18} Similarly, the grapefruit (naringenin) has showed a dose-dependent inhibition of HCV production.^{19,20} Moreover, oxymatrine supplementation inhibited HCV proliferation, antagonized liver fibrosis, and regulated immune functions in patients with chronic hepatitis C.²¹ The extract of shrubby sophora (*Sophora flavescens*) root, that is consisted of oxymatrine, had inhibitory effects on HCV infection in both *in vitro* and *in vivo* experiments.^{22–25} Although some of these medicinal herbs demonstrated anti-HCV

activities in the previous experiments, their mechanisms of action and safety remain to be investigated.

Many CAMs including several medicinal herbs are used to alleviate liver disease; however, there is still insufficient evidence in this regard. Certain natural compounds can decrease the viral load of HCV and prevent further liver damage. While, some of these herbs do not have any therapeutic efficacy and may cause detrimental effects on the patients. Overall, it seems that these treatments are very popular among the general population, are more available, and have lower costs and side effects comparing to the conventional therapies. Besides, some of these medications showed promising therapeutic effects on HCV infection in preclinical and clinical studies. Hence over, we suggest that further investigations with higher methodological quality should be conducted regarding the treatment of hepatitis C using CAM.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

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