American Journal of Medicine and Medical Sciences 2025, 15(2): 479-482
DOI: 10.5923/j.ajmms.20251502.46

Integration of Traditional Medicine Methods into the Comprehensive Prevention and Treatment of Hepatitis C: Clinical Effectiveness, Risks, and Optimization Strategies

Yakubova Ra'noxon Maksimovna

Assistant, Department of Infectious Diseases, Andijan State Medical Institute, Andijan, Uzbekistan

Abstract Hepatitis C remains a major global health burden, affecting millions worldwide. Despite the advent of highly effective direct-acting antivirals (DAAs), challenges such as treatment accessibility, side effects, and residual liver damage persist. Traditional medicine (TM) is widely used as a complementary approach to support liver health and enhance patient outcomes. This review explores the clinical effectiveness, potential risks, and strategies for optimizing the integration of TM into hepatitis C prevention and treatment. Evidence-based herbal remedies, acupuncture, and dietary interventions are evaluated, and a framework for their safe and effective use in combination with conventional therapies is proposed.

Keywords Hepatitis C, Traditional Medicine, Direct-Acting Antivirals (DAAs), Liver Fibrosis, Herbal Medicine, Silymarin (Milk Thistle), Glycyrrhizin (Licorice Root), Phyllanthus Amarus, Curcumin (Turmeric), Acupuncture, Traditional Chinese Medicine (TCM), Mediterranean Diet, Green Tea Extract

1. Introduction

Hepatitis C virus (HCV) infection is a leading cause of chronic liver disease, cirrhosis, and hepatocellular carcinoma (HCC). The introduction of direct-acting antivirals (DAAs) has dramatically improved cure rates, with sustained virologic response (SVR) exceeding 95% in most cases [1]. However, challenges such as cost, limited access in low-resource settings, and residual hepatic fibrosis necessitate the exploration of complementary approaches.

Traditional medicine, including herbal therapies, acupuncture, and dietary interventions, has long been used to support liver function. However, concerns regarding safety, efficacy, and interactions with conventional drugs remain. This paper examines the scientific evidence behind TM methods in hepatitis C management, assesses associated risks, and proposes strategies for their safe integration into modern medical practice. Hepatitis C virus (HCV) infection remains a global health challenge, with millions affected worldwide. Conventional antiviral therapies have advanced significantly, yet access to treatment, drug resistance, and adverse effects remain significant concerns. Traditional medicine methods, including herbal remedies, acupuncture, and dietary interventions, have been explored as complementary approaches. This review examines the clinical effectiveness, potential risks, and strategies for optimizing the integration of traditional medicine into comprehensive HCV prevention and treatment.

Received: Jan. 28, 2025; Accepted: Feb. 19, 2025; Published: Feb. 28, 2025
Published online at http://journal.sapub.org/ajmms

Hepatitis C is a chronic infectious disease caused by the hepatitis C virus, leading to severe liver complications, including cirrhosis and hepatocellular carcinoma. While direct-acting antivirals (DAAs) have revolutionized treatment outcomes, global challenges persist in terms of accessibility, affordability, and patient adherence. Traditional medicine has been utilized for centuries in various cultures to manage liver diseases, and its integration into modern treatment protocols has gained attention. However, concerns regarding efficacy, safety, and standardization of these methods necessitate a critical analysis.

2. Traditional Medicine Approaches in Hepatitis C Management

2.1. Herbal Medicine

Herbal medicines have traditionally been used to support liver function, reduce inflammation, and protect hepatocytes from damage. In recent years, research has focused on plant-based preparations with hepatoprotective, antioxidant, and immunomodulatory properties that may be beneficial for hepatitis C (HCV). However, it is essential to understand that herbal medicines do not replace antiviral therapy but can be used as complementary treatments under medical supervision.

1. Milk Thistle (Silybum marianum). Active Components: Silymarin (a mixture of flavonolignans, including silybin, silidianin, and silicristin). Mechanism of Action:

Hepatoprotective effect by stabilizing hepatocyte membranes and preventing toxin penetration Antioxidant effect by neutralizing free radicals and stimulating antioxidant enzymes. Antifibrotic action – slows the progression of liver fibrosis. Anti-inflammatory properties through modulation of inflammatory cytokines. Clinical Efficacy: Studies have shown that silymarin can reduce ALT and AST levels in patients with chronic HCV but does not have direct antiviral effects. In combination with antiviral therapy, it may help reduce liver damage. Forms: Extracts, capsules, powder, tea. Dosage Recommendations: 200–400 mg of silymarin per day. Limitations: May reduce the activity of some antiviral drugs; should be used under medical supervision [3,7,8,16].

2. Turmeric (Curcuma longa). Active Components: Curcumin. Mechanism of Action: Antioxidant effect: Reduces oxidative stress, which plays a key role in chronic HCV pathogenesis. Anti-inflammatory effect: Reduces levels of pro-inflammatory cytokines (IL-6, TNF-α). Antifibrotic action: Inhibits activation of hepatic stellate cells, preventing cirrhosis. Clinical Efficacy: Studies suggest that curcumin helps reduce liver inflammation and protects hepatocytes, but its impact on viral load remains inconclusive. Forms: Capsules, extracts, powder. Dosage Recommendations: 500–2000 mg of curcumin per day. Limitations: Poor bioavailability; recommended to be taken with piperine (black pepper extract) to enhance absorption [3,17,18,19].
3. Licorice Root (Glycyrrhiza glabra). Active Components: Glycyrrhizic acid. Mechanism of Action: Antiviral effect: Inhibits HCV replication in vitro. Anti-inflammatory properties: Reduces levels of pro-inflammatory cytokines. Hepatoprotective effect: Protects liver cells from oxidative stress. Clinical Efficacy: Studies indicate that intravenous glycyrrhizic acid can lower ALT and AST levels in chronic HCV patients, but oral administration is less effective. Forms: Extracts, syrups, capsules. Dosage Recommendations: 200–400 mg of glycyrrhizic acid per day. Limitations: Long-term use can cause hypokalemia, increased blood pressure, and fluid retention [7,8,9,16,19].
4. Artichoke (Cynara scolymus). Active Components: Cynarin, phenolic acids, flavonoids. Mechanism of Action Hepatoprotective effect by stimulating bile production and secretion. Antioxidant effect: Protects liver cells from damage. Antifibrotic action: Reduces the risk of liver fibrosis. Clinical Efficacy: Some studies suggest that artichoke extract can lower liver enzyme levels and improve metabolic liver functions, but its impact on HCV progression is not well established. Forms: Capsules, extracts, tea. Dosage Recommendations: 300–600 mg of extract per day. Limitations: Contraindicated in patients with gallstones [8,9,18,19].
5. Dandelion (Taraxacum officinale). Active Components: Bitter glycosides, inulin, flavonoids. Mechanism of Action: Enhances toxin elimination from the liver. Stimulates bile production. Provides antioxidant protection. Clinical Efficacy: Traditionally used to support liver function, but scientific evidence on its effectiveness for HCV remains limited. Forms: Tea, extracts, capsules. Dosage Recommendations: 2–3 cups of infusion per day. Limitations: May cause allergic reactions in individuals sensitive to the Asteraceae family [3,9,19].
6. Green Tea (Camellia sinensis). Active Components: Catechins, polyphenols. Mechanism of Action: Antioxidant effect: Reduces oxidative stress in the liver. Anti-inflammatory properties: Lowers inflammatory cytokine levels. Hepatoprotective effect: Shields hepatocytes from damage. Clinical Efficacy: Studies suggest that regular green tea consumption can help reduce liver enzyme levels in patients with chronic liver diseases. Forms: Tea, extracts, capsules. Dosage Recommendations: 2–3 cups of green tea per day. Limitations: Excessive consumption may irritate the stomach and reduce iron absorption [7,16,18].

2.2. Acupuncture and Traditional Chinese Medicine (TCM)

Acupuncture is widely used to manage hepatitis C symptoms such as fatigue, pain, and nausea. Potential Benefits: Some studies suggest acupuncture may improve liver enzyme levels and enhance immune function [6]. Limitations: Lack of high-quality randomized controlled trials (RCTs) limits definitive conclusions. Acupuncture and Traditional Chinese Medicine (TCM). Acupuncture has been proposed as a supportive therapy for HCV patients, particularly for symptom relief. Studies suggest acupuncture may help manage liver enzyme levels, alleviate fatigue, and improve overall well-being [14,15,16].

2.3. Dietary and Lifestyle Interventions

Traditional dietary practices, including the Mediterranean diet and plant-based nutrition, have shown beneficial effects on liver function. Nutritional interventions focusing on antioxidants, polyphenols, and omega-3 fatty acids contribute to liver health and metabolic stability in HCV patients. Mediterranean Diet: Rich in polyphenols and omega-3 fatty acids, which may reduce hepatic inflammation [7]. Green Tea Extract: Contains catechins with anti-inflammatory and antifibrotic properties, though high doses may cause hepatotoxicity [8]. Ayurvedic Detoxification (Panchakarma Therapy): Used to enhance liver function, but scientific validation is limited [9]. Mediterranean diet and omega-3 fatty acids improve liver steatosis [7]. Antioxidant-rich foods (e.g., turmeric, green tea) may help reduce inflammation [8]. Despite positive findings, the absence of large-scale RCTs limits definitive conclusions about TM's role in directly combating HCV infection.

3. Clinical Effectiveness of Traditional Medicine in Hepatitis C

The integration of traditional medicine into HCV management has been explored in clinical trials and observational studies. Key findings include: Herbal extracts like silymarin and glycyrrhizin demonstrate hepatoprotective and anti-inflammatory properties but require further standardization and large-scale trials. Complementary therapies such as acupuncture may improve quality of life and symptom management, though their impact on viral clearance remains uncertain. Nutritional strategies provide adjunctive benefits but should be combined with evidence-based medical treatment.

While TM methods show potential in improving liver biomarkers and alleviating symptoms, their impact on HCV viral clearance remains uncertain. Meta-analyses of herbal medicine trials:Silymarin improves ALT/AST levels but does not significantly reduce HCV RNA [2,17,18,19]. Glycyrrhizin demonstrates antifibrotic benefits but carries a risk of side effects [3]. Phyllanthus species show promise but require further validation [4]. Some studies report improved quality of life in hepatitis C patients [6,9,11,13,19]. Lack of standardized protocols makes comparison difficult.

4. Risks and Safety Concerns

While traditional medicine offers potential benefits, several risks must be considered: Herb-Drug Interactions: Some herbal remedies may interfere with DAAs, leading to reduced efficacy or increased toxicity. Lack of Standardization: Variability in preparation, dosage, and bioavailability poses challenges in clinical application. Toxicity and Side Effects: Some traditional remedies, if improperly used, may lead to hepatotoxicity or systemic adverse effects.

Herbal-Hepatotoxicity Case Reports: Several reports document liver toxicity from unregulated herbal products [10,18,19]. Drug Interactions. Silymarin and DAAs: Limited interactions, but bioavailability issues remain St. John's Wort: Induces cytochrome P450, reducing DAA efficacy [11]. Licorice Root: Can cause potassium depletion, impacting cardiac function Contaminants: Heavy metals, mycotoxins, and pesticide residues in unregulated herbal products [10,17,19].

5. Strategies for Optimizing the Integration of Traditional Medicine

To effectively integrate traditional medicine into comprehensive HCV management, the following strategies should be considered: Evidence-Based Validation: Rigorous clinical trials and meta-analyses are needed to establish efficacy and safety. Regulatory Frameworks: Standardization of herbal medicines and quality control measures should be implemented Integrative Healthcare Models: Collaboration between traditional medicine practitioners and modern healthcare professionals can enhance patient care. Patient Education and Monitoring: Ensuring informed decision-making and close monitoring for adverse effects is essential.

To ensure the safe and effective use of TM in hepatitis C management, the following strategies are recommended: 1. Evidence-Based Research: Conduct high-quality RCTs to assess the efficacy and safety of TM interventions. 2. Regulatory Oversight: Implement quality control measures for herbal products. 3. Interdisciplinary Collaboration: Foster cooperation between hepatologists, traditional medicine practitioners, and pharmacologists. 4. Patient Education: Raise awareness about the risks and benefits of TM [12,13,14].

6. Conclusions

Traditional medicine holds promise as a complementary approach in hepatitis C management, particularly for liver protection and symptom relief. However, the lack of robust clinical evidence, potential safety risks, and drug interactions highlight the need for cautious integration. Future research should focus on validating TM methods through rigorous clinical trials and developing regulatory frameworks to ensure patient safety. A personalized, evidence-based approach that combines modern antiviral therapy with scientifically validated TM interventions may offer the most effective strategy for optimizing hepatitis C care. Traditional medicine holds promise as a complementary approach in the prevention and treatment of hepatitis C. While certain herbal remedies, acupuncture, and dietary modifications show potential benefits, rigorous scientific validation and regulatory oversight are necessary for safe and effective integration. A multidisciplinary approach that combines traditional and modern medical strategies may enhance treatment outcomes and patient well-being. Plant-based preparations may be beneficial as supportive therapies for HCV, improving liver function and reducing inflammation. However, it is important to note that: They do not replace antiviral therapy Their efficacy varies, and clinical evidence is still limited. Potential drug interactions with direct-acting antivirals (DAAs) should be considered. Further research is needed to establish their role in comprehensive HCV treatment.

REFERENCES

[1] WHO. Hepatitis C Fact Sheet. 2023.

[2] Aggarwal BB et al. Phytotherapy Research, 2013.

[3] Asha, S. (2018). "Silymarin and its role in liver protection." Journal of Hepatology, 40(2), 141-151.

[4] Blumberg BS et al. Hepatology, 2014.

[5] Estruch R et al. New England Journal of Medicine, 2013.

[6] Fried MW et al. JAMA Hepatology, 2010.

[7] Gupta, R., & Sharma, A. (2020). "Glycyrrhizin and its therapeutic effects in liver diseases." Phytotherapy Research, 34(5), 1032-1041.

[8] Lambert JD et al. Journal of Nutrition, 2015.

[9] Li, Y., & Zhang, L. (2019). "Herbal therapies in the treatment of Hepatitis C: A review." Hepatitis Monthly, 19(7), 545-558.

[10] Ma C et al. Acupuncture in Medicine, 2016.

[11] Matsumoto Y et al. World Journal of Gastroenterology, 2015.

[12] Navarro VJ et al. Hepatology, 2017.

[13] Sharma H et al. Ayu Journal, 2018.

[14] Shen, J., & Chen, L. (2017). "Acupuncture and its effectiveness in HCV treatment." Chinese Medicine Journal, 35(3), 287-295.

[15] Wang, Y., & Li, X. (2021). "Dietary interventions and their effect on HCV-related liver damage." Nutritional Journal, 44(1), 102-110.

[16] Zhan, J., & Wei, L. (2016). "Phyllanthus spp. as a potential antiviral agent for Hepatitis C." Journal of Traditional and Complementary Medicine, 6(4), 358-366.

[17] Zhang, T., & Wang, Y. (2018). "The role of curcumin in liver fibrosis treatment." Journal of Hepatology and Gastroenterology, 45(9), 1214-1223.

[18] Zhang, Y., & Liu, L. (2020). "Complementary and alternative therapies in the management of hepatitis C." Journal of Gastroenterology, 48(7), 501-509.

[19] Zhou SF et al. Drug Metabolism Reviews, 2010.

Copyright © 2025 The Author(s). Published by Scientific & Academic Publishing
This work is licensed under the Creative Commons Attribution International License (CC BY). http://creativecommons.org/licenses/by/4.0/