

CLINICAL PERSPECTIVES

Case Studies on the Treatment of Chronic Hepatitis C Virus: An Integrated Approach Using Traditional Chinese Medicine and Acupuncture

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Abstract: In recent years, hepatitis C virus has emerged as the most important liver disease in the United States and Canada, becoming a chronic condition in 85% of cases with cirrhosis and hepatocellular carcinoma the most common outcome. Though conventional drug treatment has shown some success, in most patients side effects of therapy are extreme and long term results are poor. Chinese medicine and acupuncture have been used successfully to manage chronic hepatitis. This paper outlines the methodology for the treatment of chronic hepatitis C virus with Chinese herbal medicine, acupuncture, and adjunctive nutritional therapies. Two case studies are presented in support of the hypothesis that integrated therapy may offer improved outcomes for this disease.

CHRONIC hepatitis C virus (HCV) has emerged as the most important liver disease in the United States and Canada,¹ with an estimated 4 million Americans infected, and 1% world wide. Currently 8,000 to 10,000 deaths occur each year in the United States alone due to HCV, and without effective intervention that number is expected to triple

within 20 years.² Injection of illicit drugs is the single most important risk factor for acquiring HCV. After initiating injection practices, up to 90% become chronically infected.³ Other sources of infection include needle-stick accidents by health workers, contact with infected blood products via transfusion, sexual contact with menstrual blood in infected persons, infants born to infected women, and tattoos. HCV is a major cause of chronic liver disease, and persons infected with HCV are at risk for chronic hepatitis, cirrhosis and primary hepatocellular carcinoma, and they risk transmitting HCV infection to others.³ The range of additional complications following HCV infection is broad.

Due to the high incidence of viral hepatitis in China, Traditional Chinese Medicine (TCM) has had a long history of treating chronic hepatitis utilizing a systematic and comprehensive methodology underlying the principles of treatment. This paper presents

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an overview on the use of TCM concepts and methods as well as alternative and complementary therapies in an integrated treatment plan for chronic HCV. Two case studies are included.

I. Hepatitis C Virus

Hepatitis C virus is an RNA virus of the Flaviviridae family. HCV becomes a chronic condition in 85% of infected individuals.

The process of chronic HCV is insidious, progressing slowly, and usually clinically silent without symptoms or physical signs during the first two decades after infection. The first symptoms appear in the majority of cases only when advanced liver disease has already developed, although some individuals complain of fatigue, joint pain, and itching during the early course of the disease. Disease progression appears to be more rapid in the elderly and immunocompromised individuals. Natural immunity to HCV infection appears to be weak or absent.

Although one-third of patients demonstrate normal serum alanine aminotransferase (ALT/SGPT) levels, persistent elevation of ALT for more than six months is the primary laboratory marker for HCV. Antibodies to HCV or circulating viral RNA are present in all cases. Viral count can be estimated by quantitative HCV RNA polymerase chain reaction (PCR) assay.⁴ There is little or no correlation between disease severity or disease progression and ALT levels or HCV RNA titers. Liver biopsy is useful in evaluating the severity of liver damage.

II. The Liver According to TCM

According to Traditional Chinese Medicine, the primary function of the liver is to rule the even flow of qi.⁵ This free flow of qi, intrinsic vital energy, results in four major facets: harmony of the emotions, harmony of digestion, harmony of menstruation, and the secretion of bile. The liver also is considered

to store blood, rule over the function of tendons, open into the eyes, and manifest in the nails. Liver dysfunction is divided into several diagnostic types: stagnation and depressive syndromes; deficiency syndromes; and excess syndromes.⁶ The etiology of liver disorders involves several different causes: kidney yin deficiency, emotional stress, dietary indiscretions, and microbial infection.

Diagnostics

Although hepatitis is not specifically mentioned in the *Neijing*, liver and gallbladder damp heat syndrome (*gan dan shi re*)⁷ most closely resembles the symptom profile of hepatitis in the acute stage. Symptoms include flu-like malaise, fever, dark urine, light colored stools, jaundice, fatigue, anorexia, nausea, and itching. In the chronic stage symptoms include fatigue and malaise, mild fever, liver pain, decreased appetite, and itching skin, and more closely resemble spleen deficiency syndromes complicated by dampness with either heat or cold.

Patients with HCV may have no symptoms in the initial stages and only gradually manifest symptoms well into the chronic stage. A low-grade damp heat syndrome is usually present, complicated by deficiency of qi and yin, stagnation of qi and blood, hyperactive yang, and retention of heat. TCM diagnostic categories related to chronic hepatitis⁸ are summarized in Table 1.

III. Integrated Therapy

The therapeutic goals for chronic HCV should include:

1. Relief of symptoms, if present;
2. Eradication of the virus, if possible;
3. Prevention of the progression of end-stage liver disease;
4. Enhancement of the natural immune status; and
5. Reduction and prevention of side-effects of conventional therapy.

Table 1.
TCM Diagnostic Categories Related to Chronic Hepatitis⁸

Stagnation and Depressive Syndromes	Deficiency Syndromes	Excess Syndromes
Disharmony of Liver Qi (<i>gan qi bu he</i>)	Liver & GB Qi Deficiency (<i>gan dan qi xu</i>)	Liver & GB Damp Heat (<i>gan dan she re</i>)
Liver Stagnation (<i>gan yu</i>)	Liver Yin Deficiency (<i>gan yin xu</i>)	Liver Qi Surging Upward (<i>gan qi shang ni</i>)
Liver Invading Spleen (<i>gan qi fan pi</i>)	Liver Blood Deficiency (<i>gan xue xu</i>)	Liver Heat (<i>gan re</i>)
Liver Stagnation with Spleen Deficiency (<i>gan yu pi xu</i>)	Spleen Qi Deficiency (<i>pi qi xu</i>)	Liver Fire (<i>gan huo</i>)
Liver Attacking Stomach (<i>gan qi fan wei</i>)		Liver Yang Excess (<i>gan yang shang kang</i>)
Blood Stagnation (<i>yu xue</i>)		Liver Fire Flaming Upward (<i>gan hou shang yan</i>)

Serious liver disease constitutes a chronic uncontrollable stress resulting in physical, emotional, and immune disruption. Integrated therapy offers great promise through utilization of conventional methods combined with alternative therapies, lifestyle modification, and psychological counseling.

A. Western Medicine

The current treatment of choice is the combination of interferon-alpha injections and the oral antiviral agent ribavirin, a nucleoside analogue. Effectiveness is determined by normalization of ALT and loss of detectable HCV RNA. Meta-analysis has shown that when given for one year, interferon alpha has an effective rate of 16-23%.⁹ Combined therapy, interferon plus ribavirin, appears to produce a sustained response in 40% of patients. 50% of patients who relapse and are treated with a second course respond favorably.

From this data it becomes apparent that the majority of patients do not respond to therapy; these are the most difficult cases to manage. Liver transplant, a lifesaving mea-

sure, is reserved for patients with end-stage liver disease, though mild HCV infection to the transplanted liver occurs in most of these patients.

Drug withdrawal and side-effects of therapy are common. The majority of patients experience severe flu-like symptoms (low grade fever, chills, severe malaise and fatigue, headaches, arthralgia and myalgia) due to therapy. Tachycardia, restlessness, irritability, depression, and insomnia may also occur. Bone marrow suppression and severe neuropsychiatric disorders, including suicidal depression, may occur later in therapy.¹⁰ Treatment of side-effects is based on symptoms and includes the use of acetaminophen, electrolyte management, and serotonin regulating antidepressants.

B. Traditional Chinese Medicine

Since the clinical picture for chronic hepatitis involves a mixed pathology—excess combined with deficiency—a comprehensive therapeutic strategy is required. Though the primary therapeutic method for the treatment of chronic hepatitis is to drain

Table 2.
Commonly Used Chinese Herbal Formulas with Ingredients for Hepatitis

Herbal Formula	Herbal Components	
	Pharmaceutical Name	Pinyin
Gentiana Longdancao Decoction (long dan xie gan tang)	Radix Gentianae Longdancao	long dan cao
	Radix Scutellariae	huang qin
	Fructus Gardeniae Jasminoidis	zhi zi
	Caulis Mutong	mu tong
	Semen Plantaginis	che qian zi
	Rhizoma Alismatis Orientalis	ze xie
	Radix Bupleurum	chai hu
	Radix Rehmanniae Glutinosae	sheng di huang
Minor Bupleurum Decoction (xiao chai hu tang)	Radix Angelica Sinensis	dang gui
	Radix Glycyrrhizae Uralensis	gan cao
	Radix Bupleurum	chai hu
	Radix Scutellariae	huang qin
	Rhizoma Pinelliae Ternatae	ban xia
	Rhizoma Zingiberis Officinalis Recens	sheng jiang
	Radix Ginseng	ren shen
	Honey-fried Radix Glycyrrhizae Uralensis	zhi gan cao
Artemesia Yinchenhao Decoction (yin chen hao tang)	Fructus Zizyphi Jujubae	da zao
	Herba Artemesiae Yinchenhao	yin chen hao
	Fructus Gardeniae Jasminoidis	zhi zi
	Radix et Rhizoma Rhei	da huang
CH-100	Radix Salvia Miltiorrhizae	dan shen
	Sclerotium Poria Cocos	fu ling
	Sclerotium Polyporus Umbellati	zhe ling
	Herba Artemisiae Capillaris	yin chen hao
	Herba Taraxicum Magnolici	pu gong ying
	Radix Paeonia Lactiflorae	bai shao
	Panax Psuedoginseng	san qi
	Radix Bupleurum	chai hu
	Fructus Crataegus	shan zha
	Rhizoma Curcumae Longa	jiang huang
	Blechoma longituba	[unknown]
	Radix Astragalii	huang qi
	Radix Codonopsis	dang shen
	Ramus Loranthus seu Visci	sang ji sheng
	Lycium barabarum	[gou gi zi]
	[probably Fructus Lycii Chinensis]	
	Radix Glycyrrhiza Uralensis	gan chao
	Polygonum cuspidatum	[bian xu]
	[probably Herba Polygoni Avicularis]	
	Fructus Zizyphi Jujubae	da zao
	Gentiana manshurica [probably Radix Gentianae Macrophyllae]	[qin jiao]

the liver (*xie gan*) of excess heat and dampness, the treatment principle should follow a coordinated, balanced approach of clearing damp heat while supporting deficiency conditions, regulating qi and blood, and harmonizing conflicting organ energies, while calming the emotions.¹¹

Due to the high incidence of hepatitis B in China, many herbal formulas have been used for this disease; therefore modern TCM therapy for HCV is based on the model for treating hepatitis B on which the most research has been performed. However, a recent double-blind study on treatment of chronic hepatitis C¹² in Australia utilizing a new Chinese formula, CH-100, indicated significant reduction in ALT, though without viral clearance.

"Minor Bupleurum Decoction" (*xiao chai hu tang*, or *sho-saiko-to*)¹³ has been one of the most researched formulas for hepatitis in China and Japan, and is commonly used by North American practitioners for all types of liver disorders.¹⁴ Though research has not entirely clarified how this formula works, it has been suggested that it may activate macrophages, increase cytokine production, and promote natural killer cell activity.¹⁵

Other commonly used formulas include "Gentiana Longdancao Decoction to Drain the Liver" (*long dan xie gan tang*) and "Artemesia Yinchenhao Decoction" (*yin chen hao tang*) (see Table 2). Cohen has reported positive results using a new formula—Ecliptex—containing *Herba Ecliptae Prostratae* (*han lian cao*)¹⁶ [see Appendix B: Ecliptex]

Complications or side-effects of these herbs appear rare and usually constitute gastrointestinal upset or diarrhea which are self-limiting upon reduction of dose or discontinuance of medication. There is evidence that Minor Bupleurum Decoction may cause interstitial pneumonitis by over-stimulating neutrophil activity leading to peroxide-

induced lung damage when used in combination with interferon alpha.¹⁷

Acupuncture

Although acupuncture is not a primary therapy for chronic hepatitis, it is useful in treating some of the side-effects of conventional therapy, especially headaches, nausea, and insomnia, and as an adjunct to herbal therapies for its ability to regulate qi and blood. Useful acupoints commonly used for treatment of hepatitis are summarized in Table 3. Moxibustion may also be applied in cold and deficiency cases.

IV. Other Treatment Options

A number of alternative therapies have been suggested for the treatment and management of HCV.¹⁸ These include the elimination of alcohol, lowering hepatic iron concentrations by repeated venesection, use of hydrophilic bile salts, supplemental use of antioxidants (vitamins C and E, and lipoic acid), oral N-acetyl cysteine (NAC) combined with interferon alpha, aspirin and other nonsteroidal anti-inflammatory drugs, and thymosin with interferon alpha.

Schisandrin C,¹⁹ derived from the Chinese herb *Schisandra chinensis* (*wu wei zi*), and Silymarin, the active flavonoid component of *Silybum marianum*, have been shown to have liver protective action. Licorice extract, *Glycyrrhiza glabra*, has been shown to be effective when combined with interferon alpha.²⁰

V. Case Studies

[For herbal preparations used in the following case studies, see Appendix A: Resources]

— **Case 1**, Chronic Hepatitis C, Treated with Interferon Alpha and Ribavirin

Chief Complaints & Presenting History: A 48-year-old Caucasian male was diagnosed with HCV in 1993 during routine

Table 3.
Commonly Used Acupuncture Points for Hepatitis

Syndrome / Symptom	Useful Acupoints	
Liver & Gallbladder Damp Heat	LV-2 (xing jian) LV-3 (tai chong) GB-34 (yang ling quan) CV-12 (zhong guan)	SP-6 (san yin jiao) BL-18 (gan shu) BL-19 (dan shu)
Liver Qi Stagnation with Abdominal Pain	LV-13 (zhang men) LV-14 (qi men) GB-24 (ri yue)	CV-13 (shang guan) CV-14 (ju que)
Spleen Deficiency with Dampness	SP-9 (yin ling quan) SP-15 (da heng)	ST-36 (zu san li) BL-20 (pi shu)
Nausea	PC-6 (nei guan)	
Kidney Yin Deficiency	KI-3 (tai xi)	BL-23 (shen shu)

screening at a blood bank. There was no history of IV drug use or transfusion. Onset was insidious. His symptoms upon presentation in 1997 were principally side-effects of conventional drug therapy, which included severe fatigue, constant nausea, headache, insomnia, and agitation. He was also anemic with a low RBC and hemoglobin, and low WBC. At the time of presentation he was receiving 3 million units of interferon alpha by injection daily, with 400 mg of ribavirin 3 times daily. Shortly after he began alternative therapy, his interferon alpha was changed to infergen, a newer generation interferon. He was also taking the antidepressant paxil.

TCM examination revealed a deficient pulse, enlarged pale tongue with a thick yellow coat, and a slightly-sallow yellowish complexion. There was abdominal tautness without pain or hepatomegaly.

Assessment & Impressions: Chronic HCV with side-effects of interferon alpha and ribavirin therapy.

TCM: Liver and Gallbladder Damp Heat with Excess Liver Yang causing Liver Fire

Flaming Upward, and Liver Attacking Stomach complicated by Spleen Qi Deficiency.

Therapeutic Plan

- Acupuncture 2 times weekly (LV-2, 3; KI-3; ST-36; PC-6; CV-12, 13)
- Minor Bupleurum Decoction, alternating with Gentiana Decoction
- N-acetyl cysteine, 500 mg two times daily
- Live cell extracts of thymus and mesenchyme, oral
- Multivitamin, mineral, and antioxidant formula with glutathione
- Zinc, 75 mg daily
- Selenium, 1200 mcg daily
- Vitamin C, 1-2 gm 2-3 times daily, depending on tolerance
- Vitamin E, 1200 IU daily
- Phyllanthus, Curcumin, and Silymarin extracts, alternating monthly
- Echinacea extract, with every other week off

Diet: Avoidance of alcohol, oily and fatty foods, red meats, spicy foods.

Results & Discussion: After two months of therapy, the majority of symptoms were eliminated. After six months the patient discontinued drug therapy for two months,

Table 4.
Case 1: Liver Function Tests and Viral Markers

Date	Laboratory Studies			
	ALT/SGPT (0-45 IU/L)*	GGT (0-65)*	PCR Quantitative	HCV Antibody
08 / 09 / 93	—	—	—	positive
11 / 22 / 94	203	—	—	
01 / 17 / 95	138	—	—	
04 / 25 / 95	199	—	—	
06 / 19 / 95	88	—	—	
09 / 27 / 95 (started interferon†)	65	—	3,142,300	
01 / 31 / 96	31	—	915,600	
07 / 26 / 96	28	—	354,562	
09 / 24 / 96	40	80	—	
12 / 13 / 96	35	—	124,000	
01 / 08 / 97	20	—	—	
03 / 17 / 97	15	—	—	positive
05 / 01 / 97	—	—	21,630	
06 / 30 / 97	14	—	—	
09 / 08 / 97 (started acupuncture)	19	—	145,000	
11 / 03 / 97	16	50	42,000	

* Normal values per Laboratory Corporation of America, San Diego

† Interferon: 3 million units, three times per week

however upon resumption of therapy all symptoms resumed. He returned to my office and was treated two times with acupuncture which helped reduce symptoms. ALT and PCR declined consistently, most likely due to the interferon and ribavirin. Acupuncture, TCM, and supportive natural therapeutics effectively controlled side-effects of the drug therapy. Though the liver protective function effects of the treatments remain unknown, a significant reduction in ALT, GGT, and PCR occurred within 2 months after initiating alternative therapies. Liver function tests and viral markers over a period of four years are summarized in Table 4.

— **Case 2.** Chronic Hepatitis C, Complicated by Diabetes and Hypertension

Chief Complaints & Presenting History:
A 50-year-old Caucasian male with chronic

HCV from IV drug use at least 20 years prior, with a chief complaint of fever of unknown origin had been diagnosed by an infectious disease specialist. After an episode of bronchitis, he maintained a persistent low-grade fever of 99-100°F, with a tidal presentation worse in the later afternoon. Height: 5'8"; weight: 290 lbs; BP 150/90.

Symptoms included fatigue, joint pain, neuropathy in feet, without sweating or chills. He was thirsty, with dry throat, dry cough, and reported yellow urine with strong odor. Laboratory markers revealed persistent elevation of ALT, decreased albumin, elevated ALK PHOS, an elevated sedimentation rate, and anemia.

TCM findings: Slippery pulse; pale, enlarged tongue, with a sticky yellow coat. His complexion was dark. The abdomen was enlarged and flaccid without ascites.

Assessment & Impressions: Chronic HCV, fever of unknown origin, non-insulin dependent diabetes, obesity, hypertension.

TCM: Liver Gallbladder Damp Heat with Kidney Yin Deficiency, complicated by trapped pathogenic heat and blood stagnation.

Therapeutic Plan

- Minor Bupleurum Decoction, with Coptis Decoction to Relieve Toxicity (*huang lian jie du tang*) consisting of: Rhizoma Coptidis (*huang lian*), Radix Scutellariae (*huang qin*), Cortex Phellodendri (*huang bai*), Fructus Gardenia Jasminoidis (*zhi zi*).
- Vitamin C buffered powder, 6-8 gms daily.

Results & Clinical Course: Follow-up was performed monthly. There was no change in fever at the end of two months. Coptis Decoction was discontinued and Rehmannia Six Decoction was added. Within two weeks all signs of fever were eliminated. In addition, over the next several months, his glucose level normalized (100-117) and he was able to discontinue oral anti-diabetic therapy. His blood pressure decreased to 140/75, though he continued to take the antihypertensive captopril. He was put on long-term treatment with Minor Bupleurum Decoction alternating with Gentiana Decoction, and low dose continual Rehmannia Six Decoction. Silymarin extract was added, along with a multivitamin/mineral and an antioxidant formula. Weight loss was strongly encouraged.

At the end of one year: the fever had not returned, blood sugar remained normalized, energy had improved significantly, there was no neuropathy, and joint pains were milder and rare. He continued to take diuretics and was changed to Lasix. He lost 75 lbs. with improved diet.

The patient returned six months later with a recurrence of afternoon fever and joint pain. Regular weekly acupuncture was

added: (LV-3, GB-34, SP-9, KI-3, CV-12, LV-14, LI-4). After three weeks the fever subsided and eventually disappeared. He has maintained bi-weekly appointments for acupuncture since.

Laboratory markers revealed improvement in alkaline phosphatase, no significant change in ALT, though no worsening, and a normalization of a persistently elevated ESR. RBCs had normalized without other signs of anemia at the end of the first six months of treatment. Liver function tests and sedimentation rates over a period of three years are summarized in Table 5.

Discussion: This patient had chosen not to take conventional therapy for the HCV, though he had no objection to management of his elevated blood sugar and hypertension with drugs. After nearly three years with alternative methods, his general health improved considerably evidenced by weight loss, decreased blood pressure, and improved glucose control. In addition, symptoms associated with the chronic HCV (joint pain, fatigue, malaise, and low-grade fever) were eliminated and there appeared to be no worsening of liver function markers, with even slight improvement evident, suggesting effective management of the disease. Since no liver biopsy was performed, liver protective results are difficult to evaluate.

VI. Conclusion

Although the ultimate therapeutic goal is the eradication of all detectable virus, in many patients with chronic HCV this outcome is very difficult, or impossible, to achieve. Most patients do not experience a sustained response to conventional therapy, and the side effects can be severe.

As shown in the above cases, combined therapy appears to be useful in the treatment of chronic HCV. Such a therapy includes conventional allopathic methods, dietary restrictions (avoidance of red meat and

Table 5.
Case 2: Liver Function Tests and Sedimentation Rates

Date	Laboratory Studies			
	ALT/SGPT (0-45 IU/L)*	ALK PHOS (30-110 u/L)*	Albumin (3.5-5.0 gm/dL)*	ESR (0-20 mm/hr)*
01 / 05 / 95 (began alter- native therapy)	134	113	3.4	—
05 / 17 / 95	122	98	3.2	39
08 / 11 / 95	186	120	3.2	12
08 / 20 / 96	80	58	2.6	—
07 / 31 / 97 (began acupuncture)	136	73	2.9	35
03 / 25 / 98	179	73	3.1	—
10 / 15 / 98	162	72	3.2	4

* Normal values per Laboratory Corporation of America, San Diego

iron-containing vitamin supplements), alcohol avoidance, traditional Chinese herbs, nutritional supplementation, and acupuncture.

Therapeutic goals must be modified towards the achievement of useful clinical results, including: (1) the lowering of viral levels; (2) reduction in active liver inflammation; (3) enhancement of natural immune status; (4) nontoxic symptom management; (5) slowing the progression of hepatic fibrosis; and (6) prevention of cirrhosis and hepatocellular carcinoma. Additional studies and further research are necessary, however in the interim, integrated therapy holds promise.

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Appendix A: Resources

Health Concerns, Inc

8001 Capwell Drive, Oakland CA 94621

Tel: 1-800-233-9355 or (510) 639-0280

Source for:

- Ecliptex

Brion Herbs Corporation

9200 Jeronimo Road, Irvine CA 92618

Tel: 1-800-333-4302

Source for:

- Gentian Combination (Gentiana Longdan-cao Decoction)
- Minor Bupleurum Combination (Minor Bupleurum Decoction)
- Capillaris Combination (Artemesia Yin-chencao Decoction)

Allergy Research Group

400 Preda Street, San Leandro CA 94577

Tel: 1-800-782-4274

Source for:

- N-acetyl cysteine (NAC)
- NAT Cell Live Protein (live cell extracts: thymus and mesenchyme)
- Phyllantus

PhytoPharmica

825 Challenger Drive, Green Bay WI 54311

Tel: 1-800-553-2370

Source for:

- SuperThistle X (Silymarin marianum, milk thistle extract)
- Curcuma (Curcumin)

Unavailable:

- CH-100
- Schisandrin-C

Appendix B: Ecliptex

Author's Note: Strictly speaking, Ecliptex is not a TCM formula since it combines Milk Thistle. Although there are no known published studies on its use in the treatment of HCV, I believe that anecdotal evidence is important to mention. Ecliptex ingredients:

Eclipta Concentrate	han lian cao
Milk Thistle	Sylibum marianum
Curcuma	yu jin
Salvia	dan shen
Lycium Fruit	gouqi zi
Ligustrum	nu zhen zi
Bupleurum	chai hu
Schizandra	wi wei zi
Tien Chi	san qi
Tang Kuei	dang gui
Plantago Seed	che qian zi
Licorice	gan cao

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