China has a long history of using Chinese medicine (CM) to treat chronic liver diseases. Today, CM is still one of the major medicines in China, and is also being used more commonly in Western countries. Chronic viral hepatitis B (CHB) is a global health problem. China has the largest population affected by this viral hepatitis. CHB is caused by infection with the hepatitis B virus (HBV). Chronic infection with HBV can significantly impair the quality of life and life expectancy of patients because of the potential for disease progression, which can lead to fibrosis, cirrhosis, liver failure and hepatocellular carcinoma. CM is used widely in CHB treatment in China as well as other countries. Clinical surveys revealed that over 90% of patients with CHB in China received CM therapy. More than 80% of natural products thought useful for management of liver diseases are Chinese herbs and/or their extracts, and over 80% of the Chinese publications regarding hepatitis and hepatic fibrosis are CM-related. These are far higher proportions than those for Western medicines used in China. In Western medicine, interferon (IFN) and lamivudine (LAM) or other nucleoside analogues (e.g. adefovir dipivoxil, tenofovir, entecavir) are the currently approved remedies for hepatitis B.

Regarding the treatment CHB with CM, major questions are "Are CMs effective therapeutic agents for CHB? If yes, how to explain the large population infected by HBV in China?" and "If they are, why are so many millions of Chinese chronically infected with the HBV?" There are both medical and cultural dimensions to these questions. In recent decades, a number of clinical trials have been performed in China to assess the efficacy and safety of CMs for CHB infection. Studies have looked at the effects of CMs on CHB, both alone, and in combination with Western medicines. Results have been compared with those from studies employing only conventional Western therapies.

To understand better the current patterns of use of CMs in management of CHB in China, in 2010, we searched the database of the China National Knowledge Infrastructure (CNKI, from January 1998 to June 2008) and PubMed (January 1966 to June 2008) using the key words CM, herb, plant, herbal extract and hepatitis B. The reports of CM clinical trials that included prospective randomized clinical trials (RCTs), non-randomized clinical trials (non-RCTs), and summaries of clinical experience were selected for analysis. The clinical trials included single blind, double blind or not blinded studies.
in humans that involved CMs only versus IFN or LAM, and CMs plus IFN or LAM versus IFN or LAM treatment. We also statistically determined which individual herbs were used most frequently in CM formulations used to treat CHB. The results of our analysis were published recently in Hepatology under the title "Contemporary Clinical Research of Traditional Chinese Medicines for Chronic Hepatitis B in China: An Analytical Review". Our major findings were as follows: (1) CMs reduced serum HBeAg and normalized serum ALT better than IFN, and were equivalent to IFN in clearing serum HBV DNA; (2) CMs plus IFN significantly reduced serum HBeAg, improved clearance of serum HBV DNA, and improved normalization of serum ALT, compared to IFN; (3) CMs were equivalent to LAM in reducing serum HBeAg, clearing serum HBV DNA, and normalizing serum ALT; (4) CMs plus LAM significantly reduced serum HBeAg, and were better at clearing the serum HBV DNA and normalizing serum ALT compared to LAM; (5) There were no serious adverse effects of CM reported in the clinical trials cited. Although the composition of traditional medicines in the CMs differed among RCTs, approximately 60% of the herbs were homologous. Our major overarching conclusion was that CMs seem effective as alternative remedies for patients with CHB, but they require further evaluation in well-designed, adequately-powered prospective, controlled randomized trials.

It has to be acknowledged that some of the studies were poorly designed, and the data analysis and presentation were of low quality. Overall, the methodological quality of the clinical trials was not high. 70% of the RCTs included in our review were scored as having mediocre methodological quality. No trial was identified as a multi-center, large-scale, prospective, double-blinded, controlled randomized trial. Furthermore, only 24% of the RCTs performed long-term follow up studies. The possibility of publication bias in the reporting of results of clinical trials is always of concern. The purported effectiveness of CM formulations on CHB could be exaggerated if only positive results were published in the literature. Although the funnel plots in our study suggest that there was not major publication bias, there are still many other concerns remaining that include the following: the importance that investigators submit, and that journal editors publish, negative, as well as positive results; whether the RCTs were done by CM practitioners or Western medicine practitioners, and were approved by Chinese medical administration; how commonly Chinese Western medicine practitioners use those CMs in their clinical practice for HBV; there were many CM formulations used in these RCTs, what is the common standard or criterion to select the formulation for the RCT? The quality assurance and quality control of the CM formulations used in the clinical trials were generally not studied; there were few data available regarding the safety of the CM formulations used in these RCTs, although no side effects were reported in these studies, which suggest the formulations used were safe. All these concerns and the rather low quality of the RCTs make it difficult for clinicians to draw firm conclusions about the usefulness of CM.

Our study also revealed that the CMs used for HBV treatment in different formulations are very similar. The most commonly used herbs include Radix Astragali (Huangqi), Radix Salviae Miltiorrhizae (Danshen), Rhizoma Polygoni Cuspidati (Huzhang), and Herba Hedyotis diffusae (Bai Hua She She Cao). Interestingly, milk thistle (Shui Fei Je), which is widely used for viral hepatitis and other liver diseases in Europe and North America, was not ranked in the top 20 most commonly used clinical herbs, suggesting that CM practitioners choose herbs for HBV mainly based on CM theory. Like CMs, milk thistle and its extracts (e.g., silymarin) have been used for medicinal purposes since the time of ancient Greece, and continue to attract attention for their touted liver-health properties. Although some studies reported successful treatment of patients infected with HBV with milk thistle, these finding were not replicated in higher quality clinical trials. The U.S. Agency for Healthcare Research and Quality reported in a systematic review of clinical trials of milk thistle that milk thistle improved liver function in people with mild liver disease but did not work as well for those with severe liver disease such as cirrhosis. According to the National Center for Complementary and Alternative Medicine of the U.S. National Institutes of Health, milk thistle may benefit the liver by protecting and promoting the growth of liver cells, fighting oxidation (a chemical process that can damage cells), and inhibiting inflammation in laboratory animal studies.

The art of Chinese medicine emphasizes the whole human body as a unit, and then uses a formula with several herbs, which are selected based upon the individual properties of the herbs and their purported ability to work in a complementary fashion to treat a disease in numerous domains. Hundreds of herbs have