

Exploring Evidence-Based Clinical Reviews on the use of Herbal Remedies for Gastrointestinal and Hepatic Conditions

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Abstract: *The liver and gastrointestinal tract is the body's primary organs. In reality, these systems are essential to human survival. Due to its size and complexity, GIT and liver health are challenging to manage. Constipation, nausea, vomiting, diarrhea, stomachaches, flatulence, and other GIT disorders tax the healthcare system. Pharmacies sell over-the-counter medications for many common diseases. Since these treatments aren't always effective, patients must live with chronic problems without a long-term solution. This review article uses systematic reviews and evidence-based research to give a reference guide to herbal remedies for gastrointestinal and hepatic diseases. Herbal remedies have been used for GIT, liver, and other organ system disorders for millennia. Herbal medications are being used to treat a variety of disorders in developed and developing countries. Many people utilize herbal medicines despite a paucity of evidence on their efficacy, safety, and toxicity. Despite their benefits in disease prevention and treatment, herbal treatments may be harmful. Thus, ethnopharmacology development requires time, effort, and resources. Herbal products must be grouped like pharmaceutical medications according on their uses, side effects, method of action, efficacy, and soon.*

Keywords: Herbal therapies, Gastrointestinal disorders, Hepatic disorders

I. INTRODUCTION

In Thailand, several plant species and their varied components are employed in the treatment of various GIT disorders via the usage of plant products. One of the biggest and most important organ systems in the human body in terms of function is the gastrointestinal tract (GIT). It is made up of several parts, such as the liver, pancreas, salivary glands, and alimentary canal (Hu et al., 2022). Following food ingestion via the mouth, all of these organ systems inside the GIT cooperate to bring about the processes of digestion, absorption, and elimination (Hornbuckle et al., 2008). Many individuals choose to utilize herbal remedies to relieve GIT pain, which is a widespread condition (Campanella et al., 2022). Herbal medications have shown to be an effective treatment for common gastrointestinal diseases, including nausea, vomiting, diarrhea, irritable bowel disease, and more (Campanella et al., 2022). Anatomical and biochemical models have not provided a comprehensive understanding of the functional GIT disorders, namely dyspepsia, functional constipation, and gastroesophageal reflux disease, and their complete treatment with allopathic medications has not shown to be feasible (Langmead and Rampton, 2001). As an alternative, herbal medications are often utilized to treat similar illnesses around the globe. Since the liver is a crucial component of the gastrointestinal tract, research is being done on the potential uses of herbal remedies to treat a variety of liver conditions, including hepatitis and clotting issues. Nevertheless, a number of the substances in these herbal remedies may be harmful to health, and this study is still in its early phases. The goal of this research is to highlight and comprehend the benefits of herbal medicines in the management and prevention of liver and GIT disorders by using the concepts of ethnopharmacology. This research covers the toxicological consequences of various medications in addition to their applications.

Pre-clinical and clinical studies of herbal products in the management of GIT and liver diseases

GIT difficulties create a large share of global healthcare concerns. GIT issues like diarrhea are a leading cause of mortality worldwide (Stickel and Schuppan, 2007). Most GIT problems may be treated with medications, although herbal therapy has grown in popularity.

Since there is few pre-clinical and clinical research on the scientific effectiveness of herbal medications, it is important to gather as much scientific information as possible. Herbal treatments dominate treatment in developing countries (Balick, 1996). Tangjitman et al. (2015) studied in Thailand to treat diarrhea, flatulence, gastric ulcers, stomach pains, hemorrhoids, jaundice, and other GIT and liver disorders. Table 1 includes the plant species and informant consensus factor (ICF) utilized in this investigation for GIT diseases (Bodeker et al., 1997; Tangjitman et al., 2015).

Most individuals think utilizing homeopathic or herbal treatments won't harm the body. However, this is incorrect. There have been few herbal product trials, and they are largely inconclusive and mention several side effects. Table 2 lists several of the side effects of GIT disease-treating plants (Tangjitman et al., 2015).

Numerous herbal therapies have been researched for functional gastrointestinal illness management. Kim et al. (2020) studied STW-5 (Iberogast, a liquid preparation of nine herbs), Mentha x Piperita (Lamiaceae), Rikkunshito (an oral dried preparation of eight herbs), DA-9701, and Corydalis tuber to treat GIT diseases. Herbal analgesics and anti-spasmodics may cure constipation, irritable bowel disease, functional dyspepsia, and gastroesophageal reflux disease (Kim et al., 2020).

Since the GIT supplies most of the liver's blood (Ebrahimi et al., 2020), defects in other GIT regions may impair liver anatomy and function. The majority of people with NAFLD is obese, diabetic, or have high blood pressure. The disease may induce deadly nonalcoholic steatohepatitis (NASH). This causes end-stage liver disease called liver cirrhosis, which can only be treated with liver transplantation.

Rhein from Rheum palmatum L. (Polygonaceae), Huanglian Jiedu extract, Sho-saiko-to Juzen-taiho-to, and bofutsushosan have been evaluated for liver diseases. These treatments are beneficial against NAFLD and NASH found promising results in treating liver problems using herbal preparations such as Phyllanthus L. (Phyllanthaceae), Silybum marianum, Glycyrrhiza glabra, and Liv 52.

Table 1: The use of plant species for GIT problems, along with their informant consensus factor (ICF)

GIT disorders	Plant species used	ICF
Diarrhea	Punica granatum Linn (Punicaceae)	0.95
	Psidium guajava (Myrtaceae)	
	Musa sapientum (Musaceae)	
	Leea indica (Vitaceae)	
	Ensete glaucum (Musaceae)	
Flatulence	Celastrus paniculatus (Celastraceae)	0.97
	Ochna integerrima (Ochnaceae)	
	Zingiber montanum (Zingiberaceae)	
Gastric ulcers	Zingiber ottensii Valetton (Zingiberaceae)	0.92
	Boesenbergia rotunda (L.) (Zingiberaceae)	
	Kaempferia parviflora (Zingiberaceae)	
	Dillenia pentagyna (Dilleniaceae)	
	Engelhardtia spicata var. colebrookeana (Juglandaceae)	
Mouth ulcers	Curcuma longa (Zingiberaceae)	0.95
	Croton kongensis (Euphorbiaceae)	
	Ziziphus cambodiana (Ziziphaceae)	
Geographical tongue	Melastoma malabathricum (Melastomataceae)	1.00
Tooth ache	Mussaenda sanderiana (Rubiaceae)	0.50

Stomach ache	Acorus calamus (Acoraceae)	1.00
Constipation	Ochna integerrima (Ochnaceae)	1.00
Carminative	Zingiber ottensii (Zingiberaceae)	1.00
Food poisoning	Ensete glaucum (Musaceae)	1.00
Hemorrhoids	Ziziphus cambodiana (Ziziphaceae)	0.0
Laxative	Senna occidentalis (Fabaceae)	0.97
	Euphorbia heterophylla L. (Euphorbiaceae)	
	Senna alata (Fabaceae)	
	Tamarindus indica L (Fabaceae)	
Appetite enhancer	Mussaenda sanderiana (Rubiaceae)	1.00
Jaundice	Gymnopetalum integrifolium (Cucurbitaceae)	0.89
	Dendrocalamus strictus (Poaceae)	
	Croton robustus (Euphorbiaceae)	
	Flemingia macrophylla (Fabaceae)	
	Mussaenda sanderiana (Rubiaceae)	

A systematic review of the use of herbal remedies to treat chronic hepatitis C was undertaken by Coon and Ernst (Xiao et al., 2019). Fourteen randomized clinical trials were referenced by the authors in relation to the concurrent administration of interferon-alpha and herbal products as antiviral therapy. Despite the challenges associated with extrapolating and interpreting results due to variations in the methodological limitations of the studies under consideration, the authors discovered that a number of herbal products and supplements may have potential biochemical and virological effects in the treatment of chronic hepatitis C infection. This is attributed to the increased clearance of HCV-RNA and normalizability of these substances.

Novel in vitro assays for the identification of potentially active compounds for the treatment of gastric and hepatic cancer

GIT malignancies are common worldwide. The World Health Organization puts stomach cancer fifth in global mortality, after hepatic and gastric cancers.

Gastric malignancies need comprehensive treatment. They are usually treated with surgery, radiation, and chemotherapy (Lelisho et al., 2022). Despite these therapies, end-stage cancers kill swiftly. In addition to physical weakness, these treatments harm patients' mental health. Recent research has focused on herbal therapies for gastric and other GIT cancers. Many phytochemicals active biochemical compounds in medicinal plants are being studied and employed in GIT oncotherapy (Choudhari et al., 2020). Table 3 lists phytochemicals and their anticancer characteristics and active components (Nakonieczna et al., 2020).

Fattovich et al. (2004) report a high mortality rate and fast growth of hepatocellular cancer. Herbal liver disease treatment is not new. Herbal supplements to liver cancer drugs and surgery have been extensively studied. The herbal substances Curcuma longa (Zingiberaceae), Resveratrol, Silybum marianum L. (Asteraceae), and Tanshinone exhibit apoptotic and anti-proliferative properties. They also down-regulate chemicals involved in metastatic cell proliferation and cell cycle arrest (Lin et al., 2004).

Beneficial and toxicological effects of herbal drugs in the light of ethnopharmacology

Many advantages of herbal treatments for liver and GIT diseases have been discussed (Carmona and Pereira, 2013). One of the typical benefits of herbal remedies in improving the GIT system is that phytochemicals like phytohemagglutinin (lectin) promote intestinal development. It was shown that this herbal treatment increased GIT crypts in rats (Mukonowenzou et al., 2021). Sangild et al. (2013) say early gut maturation enhances immunity, protecting babies from severe diseases including necrotizing enterocolitis and post-weaning diarrhea.

Previous reports of herbal remedy toxicological effects have demonstrated that some may be hazardous. Herbal medicines may interact with prescription pharmaceuticals, which might cause side effects. Another element

contributing to herbal medicine toxicity is that most patients self-medicate. Untrained professionals frequently provide them to them, which they abuse (Fatima and Nayeem, 2016). Many herbal treatments, including *Valeriana officinalis* (Valerianaceae), may cause severe hepatitis, hepatic failure, hepatorenal syndrome, and liver toxicity.

II. CONCLUSION

Herbal remedies are becoming more popular in developed and developing countries. Herbal medicines employ natural elements from plants, and many allopathic drugs include refined versions of these components. Herbal medicines may heal many life-threatening diseases, but they have side effects. Unlike allopathic drugs, their usage, efficacy, toxicity, and side effects are unknown. Consumers get a lot of information about new pharmaceutical products. In the same way, popular herbal products should be properly examined and their pharmacological properties made public. Due to the assumption that herbal medications have few side effects, many people use them without researching or seeing a doctor. This may be disastrous.

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