



Mini Review

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# Alternative and Complementary Medicine for Liver Health and Gastrointestinal Complication



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## Abstract

Liver is a vital organ in human body. It entertains many bio-chemical reactions which play an important role in detoxification of drugs and food, protein synthesis, hormone production, decomposition of red blood cells, immunity against infection, regulating blood clotting and many other important functions. Chronic use of some drugs, during human life span, may lead to significant damage to the liver and cause hepatic toxicity. Looking for alternative remedy, form natural phytobioactive compounds can be the only solution for liver health and protection. Although several phytomedicine have been reported to be used to ameliorate the hepatic toxicity and gastrointestinal complication, many of their relative activities are not being looked into. Among these plants are Moringa species which considered as promising herbal plant for health-promoting natural substance that successfully eliminate liver toxicity, gastrointestinal complications and improve their functions as protective substances. Moringa also treat malnutrition due to its nutritional values. In this review, we explore the beneficial effect of using Moringa plant, as herbal medicine, for human health and its side effects.

**Key words:** Alternative and complementary medicine liver health; Moringa species; Traditional herbal medicine

## Introduction

Looking for new pharmaceutical natural-toxin free drugs is the major concern for all aspects of human health with special emphasis on liver organ. Plants represent ultimate and unlimited reservoirs for these bioactive natural products since they support the plant survival itself. They act as physical defenses against predators and environmental harsh conditions. These secondary metabolites proved to play a powerful role in supporting human health and several thousands of these compounds have been, claimed to possess medicinal properties, used directly as pharmaceutical agents [1,2]. However, the practice of traditional herbal medicine is as old as mankind and has being practiced by many civilizations worldwide; searching for the bioactive ingredients/compounds still the top for fighting against human illnesses. Exploring these medicinal plants and herbs drugs are well thought-out due to their safety and considered to be free from side effects than synthetic one. They also are less toxic, relatively cheap and popular [3,4]. Currently, great opportunities are still open for scientific investigations of herbal medicines for cure of liver and gastrointestinal complications as they have been used traditionally and only a few of them have been proven scientifically [5]. There are hundreds of these herbal plants

distributed all over the world, among them is Moringa species, a single genus in the family Moringaceae with 14 known species, which grown in tropical and sub-tropical climates. They have been cultivated as herbs or massive trees from tropical Africa to the east Indies [6].

Moringa tree is known as the miracle plant for its defensive and treatment role for several health conditions including infectious diseases, inflammation, and malnutrition, gastrointestinal, hormonal and hematological disorders [6]. The most popular Moringa species, the studies almost focused on, are *M. oleifera* and *M. peregrina*. Growing research on Moringa tree, particularly their seeds, verify its significant medicinal effects [7-9]. The studies proved the ability of either *M. oleifera* or *M. peregrina* to improve liver, kidney and gastrointestinal functions and regulate blood sugar level. However, in our study, we verified the safety use of *M. seeds* even at the maximum dose tested (2000mg/kg BW) and the beneficial role of *M. seeds* in melioration the liver toxicity by improving its enzymes and cell histology. In addition, the study showed that all doses tested have the ability to regulate blood sugar and lowering blood cholesterol and triglyceride. For

*M. oleifera*, most the studies were carried, in which all the parts of this plant: root, bark, gum, leaf, fruit (pods), flowers, seed and seed oil have been used for various diseases [10,11] in the indigenous medicine of South Asia, including the treatment of inflammation and infectious diseases along with cardiovascular, gastrointestinal, hematological and hepato renal disorders [12-15]. Generally, we can say that *Moringa* tree is rich nutritive profile makes it versatile in its benefits, improving gastrointestinal ailments along from constipation to cancer.

### Role in Liver Protection

*Moringa* has a protective role for helping the largest natural detoxifier that we have, the liver. Several studies have shown the ability of *Moringa* to help in healing and preventing liver damage through restoring liver enzymes and its antioxidant potential (Reference). *Moringa* is able to restore liver enzyme by moderating their level due to its detoxification reaction [7,13-15]. This can be explained since the liver is responsible for blood detoxification, bile production, fat metabolism and nutrient processing in general. All of these functions run with the liver appropriate enzymes. When a liver is run down or overused the enzymes can often be depleted, and the whole function processes will slow down or even stop. In the presence of protective dose *Moringa*, it helps to get those enzymes back up and function successively due to its antioxidant potential and ability to regulate the enzyme levels by lowering lipid and sugar content in blood [7,16].

*Moringa* is also well established as a powerful anti-inflammatory agent [17]. Liver inflammation is considered as fundamental root of all disease. Inflammation of liver leads to improper glucose metabolism and bile production, which help in digestion run efficiently, in sequence liver, will start releasing glucose back into the blood which ended with increasing the level of blood sugar followed by other complications. *Moringa* helps to reduce inflammation both in the liver and the body so that the liver can work more efficient. *Moringa* helps the liver in fighting the oxidative stress since it is a good supply of antioxidants and serve the liver in its detoxification process [18].

### Discussion

An unhealthy liver or GIT (gastrointestinal Track) can lead to different health problems for human body, ranging from nutritive problems to poor psychological health and even death. Existence of Herbal plants that possess many bioactive principles could be alternative and complementary remedies for human illness, in particular liver health and gastrointestinal complication. Studies done on *Moringa* species proved the importance of these species for human healthcare [7,12-15]. *M. tree* is rich in its nutritional value and others bioactive compounds. Recent studies done to evaluate the toxicity of this plant on boy organ of experimental animals, all revealed that *Moringa oleifera* and *M. peregrina* are safe to used up to 2000mg/Kg BW [7,12-15] and no sign biochemical and histological changes (unpublished data). Modern pharmaceutical research, concerned with all aspects to identifying new chemical

substances with new modes of action, could be applied for this valuable tree and open a new era for new human drugs.

### Conclusion

Plant-based antioxidants, anti-inflammatory and antimicrobial, have preventive and therapeutic effects on various liver diseases. *Moringa* tree showed to have these properties and proved its ability to be alternative drug for liver health, human health care in general. To be used to ameliorate hepatotoxicity and GIT complication is promising for therapeutic new remedy. Even that, excessive or incorrect consumption of does should be manipulated depending on the plant part used, ecological source of *Moringa* and time for plant collection. Following a standardized herbal preparation technique, herbal medicinal plants will be the future alternative and complementary medicine for human health.

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