

## **SUMMARY**

Herbal medicine, also called botanical medicine or phytomedicine, refers to the use of a plant's seeds, berries, roots, leaves, bark, or flowers for medicinal purposes. Long practiced outside of conventional medicine, herbalism is becoming more mainstream as improvements in analysis and quality control along with advances in clinical research show their value in the treatment and prevention of disease.

Plants had been used for medicinal purposes long before recorded history. For example, ancient Chinese and Egyptian papyrus writings describe medicinal plant uses. Indigenous cultures used herbs in their healing rituals, while others developed traditional medical systems (such as Ayurveda and Traditional Chinese Medicine) in which herbal therapies were used systematically. Scientists found that people in different parts of the globe tended to use the same or similar plants for the same purposes.

In the early 19<sup>th</sup> century, when methods of chemical analysis first became available, scientists began extracting and modifying the active ingredients from plants. In the U.S. Later, chemists began making their own version of plant compounds, beginning the transition from raw herbs to synthetic pharmaceuticals. Over time, the use of herbal medicines declined in favor of pharmaceuticals.

Recently, the World Health Organization estimated that 80% of people worldwide rely on herbal medicines for some aspect of their primary health care. In the last 20 years in the United States, increasing public dissatisfaction with the cost of prescription medications, combined with an interest in returning to natural or organic remedies, has led to an increase in the use of herbal medicines. In Germany, roughly 600 – 700

plant-based medicines are available and are prescribed by approximately 70% of German physicians.

For most herbs, the specific ingredient that causes a therapeutic effect is not known. Whole herbs contain many ingredients, and it is likely that they work together to produce the desired medicinal effect. Many factors determine how effective an herb will be. For example, the type of environment (climate, bugs, soil quality) in which a plant grew will affect its components, as will how and when it was harvested and processed.

The use of herbal supplements for medicinal purposes has increased dramatically over the past 30 years. Herbal supplements are classified as dietary supplements by the U.S. Dietary Supplement Health and Education Act (DSHEA) of 1994. The FDA defines a dietary supplement as "...any product taken by mouth that contains a so-called dietary ingredient and its label clearly states that it is a dietary supplement". Per the provisions of DSHEA, herbal supplements – unlike pharmaceutical drugs can be marketed without undergoing testing to prove their safety and efficacy. However, herbal supplements must be manufactured according to good manufacturing practices.

Many herbs are considered safer than conventional medications, but because they are unregulated, herbal products are often mislabeled and may contain undeclared additives and adulterants. Some herbs are associated with allergic reactions or interact with conventional drugs. Self-prescribing herbal products will increase your risk, so it is important to consult your doctor or pharmacist before taking herbal medicines.

Herbal drugs have become increasingly popular and their use is widespread. Licensing regulations and pharmacovigilance regarding

herbal products are still incomplete and clearcut proof of their efficacy in liver diseases is sparse. Nevertheless, a number of herbals shows promising activity including the following:

- Silymarin ,which is an extract of *Silybum Marianum* (milk thistle) that may act as an antioxidant,anti-inflammatory and as an anti-carcinogenic.there is a good scientific evidence that silymarin is beneficial in chronic viral and alcoholic hepatitis and in patients with liver cirrhosis.
- Dimethyl Dimethoxy Biphenyl Dicarboxylate(DDB) ,which is a product of Schizandrin C which is a natural product of *Schizandrae chinensis*. DDB decreases the elevated ALT levels with no effect on AST levels, histopathology of the liver or viral load in patients with chronic viral hepatitis. Experimental studies suggest that DDB may be useful in toxin induced hepatic injury and some chemical carcinogens.
- Glycyrrhizin ,which is the active constituent of *Glycyrrhiza (Licorice)*. Experimental studies indicated that glycyrrhizin may have a hepatoprotective effect through an anti-inflammatory action.Also studies on animals suggest that licorice may be useful in toxin and drug induced hepatitis and HCC with no human studies.
- Turmeric (*Curcumin*) , which is derived from *Curcuma Longa*. Expeimental studies on cultured cells concluded that curcumin may act as an anti-oxidant, anti-inflammatory and anti-carcinogenic. It may have hepatoprotective effect against chemical induced hepatic injury and against hepatic carcinogens in animals with no human studies.

- *Camellia sinensis* (*Green tea*), which consists of polyphenols (flavonoids , catechins) and vitamin C. *Camellia sinensis* may have hepatoprotective effect against viral hepatitis , hepatotoxic agents , ischemia / reperfusion injury and hepatic carcinogenesis but all in experimental and animal studies with no available human studies.
- Tetrandrine ,which is derived from *Stephania tetrandra* , a Chinese herbal agent , and is a calcium channel blocker which has been used in china to treat liver and lung fibrosis. Experimental studies suggest that tetrandrine may have antifibrotic action. Tetrandrine may be useful in patients with chronic hepatitis via its antifibrotic action. It would be effective for cirrhotic patients. Experimental studies on rats with liver fibrosis treated with tetrandrine was demonstrated reduction in AST,ALT and ALP levels , the morphological features of fibrotic liver were also improved.
- Salvianolic acid B ,which is an extract of *Radix Salviae Miltiorrhizae* that has antioxidant and antifibrotic action through inhibiting hepatic stellate cell proliferation , inhibiting HSC collagen production via TGF-B Smad signaling pathway and induction of apoptosis to activated stellate cells. Salvia (Sm) could effectively alleviate the pathological changes of liver fibrosis as detected by biopsy examination before and after treatment of patients with hepatitis B in early stage cirrhosis.
- Oxymatrine ,which is an alkaloid extracted from Chinese herbs *Sophora alopecuroides* or *Sophora flavescens*. It has antiviral effect which was demonstrated in clinical trials of patients with chronic hepatitis. Large percentage demonstrated serological conversion and normalization of ALT level. Also oxymatrine has

been determined to be capable of acting directly on fibrosis development.

This study tried to outline the most famous herbal supplements as regards, chemical structure , pharmacokinetics , their effects , uses in different liver diseases , recommended doses and side effects.

## RECOMMENDATIONS

- It should be clear to both doctors and patients that liver supports are not drugs.
- Liver supports are not treatment for every liver disease, only the item which proves efficacy should be used in the appropriate patient.
- Many researches should be conducted to standardize these supplements and asses their interactions.
- Cost benefit relation should be studied carefully before we ask a patient to spend more than 50% of his income to improve one or more of liver functions without effect on prognosis, survival, liver histology or viral markers.