



Herbal medicines

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I. BACKGROUND:

Herbal medicine is simply defined as the science of using plants to treat or prevent medical conditions. Botanical and herbal are often used interchangeably and they essentially mean the same thing. Many people may also use the term phytotherapy. Even though it may seem like a new or trendy concept, humans all across the world have been using plants to treat medical conditions for literally thousands of years. Hippocrates, the father of medicines, detailed using over 500 plants that could be used medicinally. Before we had antibiotics and high-tech medical lifesaving equipments, obviously, people had to rely on other

things to help cure their ailments and plants were truly one of the mainstays of treatment. The main idea is that humans have always used herbal medicine and it's use continues today, often in lieu of or in addition to pharmaceutical treatments for symptom management.

COMPARING PHARMACEUTICALS AND BOTANICALS:

Botanicals tend to have milder effects and thus are best for treating only mild to moderate symptoms. More severe symptoms usually need treatment with pharmaceuticals.

CHARACTERISTICS	PHARMACEUTICALS	BOTANICAL
Active ingredient	Single	multiple
Therapeutic effects	Stronger	Milder
Potency	High	Low
Side effects	More	Fewer
Therapeutic action	Single	synergistic
Dosing	Pills	Pills,tea,tincture

ASSESS, EDUCATE, ADVISE MODEL:

- STEP 1- Listen to clues from the patient.
 STEP 2- Discuss the best botanical options that may help the patient.
 STEP 3- Help patients select a quality product and discuss important and discuss important safety concerns.

THE DIETARY SUPPLEMENTS HEALTH EDUCATION ACT (DSHEA):

It was introduced in 1994. It does the following-

- 1) Allows marketing of supplements without Food and Drug Administration [FDA] approval regarding safety and efficacy.
- 2) Holds manufacturers responsible for the truthfulness of claims.
- 3) Allows manufacturers to claim a product affects 'structure and function.'
- 4) Holds manufacturers responsible for ensuring the safety and quality of supplements.

CHECKLIST FOR EVALUATING RESEARCH STUDY:

Consideration of the following factors can help you determine validity.

- 1) Size of the study
- 2) Control and randomization
- 3) Blinding
- 4) 'Follow-up data'
- 5) Reducing bias
- 6) Conflicts of interest.

CONTAMINANTS AND ADULTERANTS:

Contaminant:A substance that is unintentionally present.

Adulterant:A substance that is intentionally added.

- Contaminants and adulterants found in botanical include heavy metal pharmaceutical misidentified plant parts microorganisms and pesticides

- Contaminant are unintentionally present while adulterants are intentionally added.

HOW DO BOTANICALS INTERACT WITH PHARMACEUTICALS:

- Herbal drug interactions can be serious and are sometimes fatal
- The greatest metabolism action occurs in the liver
- Herbal drug interactions occur when botanical or herbal products interfere with prescription or over the counter medication.

YOUR ROLE AS A HEALTH PROVIDER:

- Make sure to have an accurate and current medication list for each patient
- Note any medication that have narrow therapeutic window or are critical to life
- Know if and how a botanical may affect any other medications your patient may be taking
- Follow up with the patient.

SPECIAL POPULATION OF PATIENTS:

- Certain population of patients may be more vulnerable to harm from botanical and you should generally avoid recommending botanical to these groups.
- Verify that there is a strong evidence base for safe use and check record before recommending.

BOTANICAL PRODUCT QUALITY MEASURE I.E 'THIRD PARTY TESTING':

An organization unrelated to the manufacturer analyse a botanical product

- Purity test
- Contamination check
- No undeclared substance
- Adherence to GMPs

Limitations:

Third party cannot test the effectiveness of a product

Guarantee future that batches will meet the same standards

Botanical product quality measure i.e third party testing

GENERAL SAFETY GUIDELINES:

- Do your own medical literature research on any botanical product so you have reliable
- Information about the supplement you want to buy or recommend.
- Select products and companies that have been reviewed and vetted by trusted third-party Organizations.

DON'T BE FOOLED BY:

- Sensational or extreme claims of effectiveness
- Glowing product reviews
- Claims of "independent testing" or following "Good Manufacturing Practices (GMPs)" if no specifics are given.

BOTANICAL ACTIONS:

The botanical action of a plant describes how it exerts its therapeutic effect on the human body. This helps explain why we choose certain plants for different types of medical conditions. Some botanical actions are well understood for certain plants while others are little bit more of a mystery and we're still learning about through research.

BOTANICAL PREPARATIONS:

Herbal preparations are made by using solvents to help extract active plant constituents and that water and alcohol are most commonly used solvents.

While there are varieties of way to create preparations. The preparation method chosen should be based on the medicinal qualities of plants, as well as patient preference.

1. Water-Based Preparations
 - a. Infusion – Pour hot water (near-boiling) over fresh or dried flowers, leaves or seeds and steep. Works well for Flowers, leaves, Roots, and seeds.
 - b. Maceration – Pour cold or room temperature water over fresh or dried plant parts, and allow to steep. Works well for flowers, leaves, roots, and seeds.
 - c. Decoction – Hard plant material is actively heated and simmered over sustained period of time. Works well for Dried, hard plant Parts (bark, Woody stems, Roots, and some Berries).
2. Other Preparation Types
 - a. Tinctures – Herbal extract produced by using alcohol or glycerin as the solvent.
 - b. Crude Herbs – Crushed and dried herb in tablet or encapsulated form.
 - c. Extracts – Made in a laboratory setting and utilize with sophisticated extraction techniques. Extracts come in two form; solid and standardized.
 - Solid Extracts – Herb that was originally a liquid extract prepared with alcohol, and from which the alcohol is removed in the final product.
 - Standardized Extracts – Herb processed by isolating a particular compound, and

guaranteed to have a specific percentage of the desired compound.

The common cold is the most frequent infectious diseases in human.

1. Botanical for upper respiratory conditions:

- Andrographis
- Umckaloabo
- Echinacea
- Eucalyptus
- Thyme
- Honey

2. Botanical for sore throat:

- Slippery
- Elim
- Marshmallow
- Sage

3. Botanical for influenza symptoms:

- Elderberry
- Ginseng

4. Botanical for allergic rhinitis symptoms:

- Butterbur
- Nettle

Andrographis(Andrographispaniculata):

Andrographis is a popular botanical in Ayurvedic and Traditional Chinese Medicine for its use as a digestive aid and its ability to boost immunity. Due to these immune-modulating and anti-viral properties, scientific researchers have become interested in this plant's potential to help decrease with the severity and frequency of the common cold. The leaves contain active compounds known as Andrographolides, which help stimulate the immune system. If taken within the 48 hours of symptoms onset, this can help fight off the upper respiratory infection and make the symptoms less severe. While more research is needed, there is a small body of scientific evidence to support its use for this purpose.

Honey:

While honey is not technically a botanical, it is still an important natural remedy that can be beneficial in the symptomatic treatment of coughs. Honey is rich in antioxidants, has anti-microbial effects, and provides a soothing coating in the throat that can help reduce coughing. The World Health Organization endorses honey as a remedy for coughs. Honey is considered very safe but is not to be given to children under one Year of age due to concerns for botulism.

Slippery elm:

The inner bark of this plant contains mucilage and can be used in the treatment of sore throats. The U.S. Food and Drug Administration have approved slippery elm as a demulcent. Popular ways to consume slippery elm include lozenges and using the powdered bark as a tea. As with other demulcents, it's best to not take slippery elm within one hour of another medication as it may impair the absorption of the medication. To date, no scientific research is available to support the use of slippery elm for sore throats, but it has an excellent safety profile and is a botanical worth knowing about for this condition.

Aloe vera:

Ancient cultures revered the use of aloe vera for its wound healing capabilities, and it is still used for this purpose today. The inner gel from the leaves has traditionally been applied topically to various types of wounds. Aloe vera can also be found as a "natural" ingredient in many health and beauty products. The gel of aloe vera should not be confused with the latex, which comes from the green, fibrous part of the plant and has laxative properties. The evidence base supporting aloe vera's Wound healing capabilities is inconclusive. Data from animal Studies show positive results, but many human trials have failed to show benefit.

Glycyrrhetic acid:

Derived from licorice root, glycyrrhetic acid has anti-inflammatory properties. Licorice is a very versatile plant with many therapeutic applications, including use as a topical agent for some skin conditions. When applied topically in the form of a cream, it can be used in a similar manner as low-potency Hydrocortisone creams for skin conditions such as atopic Dermatitis to decrease inflammation and improve skin hydration. Creams are available in 1% and 2% strengths.

BOTANICALS FOR GERD :

Gastroesophageal reflux disease (GERD) is often referred to as "heartburn" or "reflux" among patients. It can occur at any age, but is much more common in older adults. A sense of burning or discomfort occurs in the chest when stomach or duodenal contents flow backward into the esophagus, which irritates the tissue lining and creates the discomfort. This may be very disruptive and uncomfortable for people, particularly when it occurs at night and interrupts sleep. Licorice, marshmallow, and slippery elm can be useful in the treatment of GERD.

- Licorice (Glycyrrhizaglabra)
- Marshmallow (Althea officinalis)
- Slippery elm (Ulmusfulva)

BOTANICALS FOR GI & LIVER DISORDERS :

• Botanicals for irritable bowel syndrome (IBS)

IBS is the most common functional abdominal disorder, with a global prevalence estimated to be around 10–15%. It is a group of symptoms, including varying levels of abdominal discomfort, irregular bowel movements, bloating, and rectal urgency. The cause of IBS is thought to be multifactorial, with diet, gut microbiota, altered gut motility and permeability, and psychosocial stress all contributing to symptoms. IBS is more likely to affect women than men. The symptoms can adversely affect a person's work or school, as well as their overall quality of life. It's also a common reason that people seek alternative treatment options up to 51% of patients with IBS report having utilized complementary therapies and healing practices to help manage their symptoms. Peppermint (*Mentha x piperita*)

• Botanicals for nausea

Nausea is a frequent gastrointestinal complaint and can be attributed to a wide range of causes, including but not limited to infections, pregnancy, motion sickness, side effects of medications, and gastritis. While treating the underlying cause is always the best course in managing nausea and vomiting, there are pharmaceutical and botanical options for providing relief. In general, botanicals are appropriate for milder symptoms, and pharmaceuticals may be needed for more persistent or severe symptoms. Ginger (*Zingiber officinale*)

• Botanicals for liver disease

The liver helps with detoxification and blood clotting, and these functions can be impaired if the liver suffers damage from viruses, alcohol, toxins, obesity, or inherited genetic conditions. Severe damage can cause scarring of the liver, known as cirrhosis, which can lead to liver failure. It's important to know the facts about milk thistle; it's one of the most frequently used botanical medicines for various forms of liver disease, including hepatitis B or C, alcoholic liver disease and nonalcoholic fatty liver disease (NAFLD), and for protection from liver-toxic medication. Milk thistle (*Silybum marianum*)

BOTANICALS FOR URINARY TRACT INFECTIONS :

One of the most frequent complaints prompting a trip to the doctor's office is urinary

tract infection (UTI). UTIs are exceedingly common worldwide, particularly among women. In the U.S., 15% of all community-prescribed antibiotics are for UTI, costing an estimated \$1 billion U.S. dollars. Classic symptoms include urinary urgency, frequency, and discomfort with urination. If fever, vomiting, or back pain is present, this may indicate a kidney infection, known as pyelonephritis. Pyelonephritis is a more serious infection and medical attention needs to be sought immediately. Botanical therapies are not indicated in such cases.

- Cranberry (*Vaccinium macrocarpon*)
- Uvaursi (*Arctostaphylos uva-ursi*)

II. RESULT:

Herbal medicine (also herbalism) is the study of pharmacognosy and the use of medicinal plants, which are a basis of traditional medicine. There is limited scientific evidence for the safety and efficacy of plants used in 21st century herbalism, which generally does not provide standards for purity or dosage. The scope of herbal medicine commonly includes fungal and bee products, as well as minerals, shells and certain animal parts. Herbal medicine is also called phytomedicine or phytotherapy. In India, Ayurvedic medicine has quite complex formulas with 30 or more ingredients, including a sizable number of ingredients that have undergone "alchemical processing", chosen to balance dosha. In Ladakh, Lahul-Spiti and Tibet, the Tibetan Medical System is prevalent, also called the 'Amichi Medical System'. Over 337 species of medicinal plants have been documented by C.P. Kala. Those are used by Amchis, the practitioners of this medical system. The Indian book, Vedas, mentions treatment of diseases with plants.

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