

## MEDICINAL HERBS EXISTENCE IN THE USAGE OF POLYHERBAL FORMULATION - A REVIEW

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### Abstract:

*Moreover, The influence of geographical and seasonal changes on the chemical content of polyherbal medication is also compared in this study. HPTLC marker based fingerprinting analysis, with Gymnemic acid, Gallic acid, Mahanine and Quercetin were conducted Further this Polyherbal formulations evaluated for various in vitro and in vivo methods. They were analyzed for, in vitro anti-oxidant (Nitric oxide and DPPH), anti-diabetic ( $\alpha$ -Amylase inhibitory activity), antilipidemic (HMG Co A reductase inhibition assay, cholesterol enzymatic endpoint method) anti-obesity (Oil Red O staining method) and in vitro cytotoxicity by MTT assay. The formulation exhibiting prominent anti-oxidant as well as antilipidemic activity was selected for the in-vivo evaluation. The in vivo antilipidemic activity was done by Diet-induced hyperlipidemia model. The selected final formulation was subjected for the RPHPLC quantification method using biomarkers and stability studies.*

**Key words:** Polyherbal formulation, Standardization, Hyperlipidaemia.

### Introduction

The second century BCE marks the beginning of Ayurveda. Vaisheshika, an ancient Hindu philosophical system, and Nyaya, an ancient school of logic, served as the foundation for Ayurveda. It was developed concurrently with the Nyaya and Vaisheshika schools and is associated with the well-known Samkhya manifestation framework.

The Vaisheshika School thought it was important to find out what the patient

thought was wrong with them before treating them. According to the Nyaya school, one must fully comprehend the patient's situation and the nature of the illness prior to beginning treatment. The Vaisheshika school divides all characteristics into six groups: quality, specificity, activity, generality, innateness, and substance. In Sanskrit, these categories are referred to as Dravya, Vishesh, Karma, Samanya, Samavaya, and Guna, respectively. 2, and then the Nyaya and Vaisheshika schools came together to form the Nyaya-Vaisheshika school. The Nyaya-Vaisheshika school helped spread Ayurvedic knowledge and elevated ancient wisdom in the years that followed. Ayurveda is still held to be founded before these institutions by the Hindu deity Brahma, who is regarded as the world's creator. 4, 5 Some people hold the belief that the creator of the world gave the sages this holistic healing knowledge for the benefit of humanity as a whole. Traditional medicines were passed down from sages to their followers to the common man through numerous written and oral reports. Shlokas were used to keep track of what people learned about how plants could be used for medicine. These expressions were used by sages to explain how to make use of medicinal plants. Many people hold the belief that the Yajur Veda, Rig Veda, Sam Veda, and Atharva Veda—all significant compilations of

information—are the foundation of the Hindu healing method. The Rig Veda is the most well-known of the four Vedas. It has 1028 Shlokas and talks about 67 plants. The Yajur Veda and the Atharva Veda both list 293 and 81 medicinal plants, respectively. The Ayurvedic treatment system is based on these Vedas. Legend has it that "Atreya" was the one who wrote both the Rig Veda and the Atharva Veda. They are said to have come from Lord Indra, who in turn came from Lord Brahma. A compilation of Vedic wisdom was compiled by Agnivesha. The text, which Charaka and other scholars altered, is now known as the "Charaka Samhita." The Charaka Samhita covers all aspects of Ayurvedic medicine, while the Sushruta Samhita focuses on the science of surgery. 8, 9, 10, and 11: Traditional healers continue to use these two well-known works. These ancient texts are available in translations and languages other than Tibetan, Greek, Chinese, Arabic, and Persian. 12 The Charaka Samhita is the most important record, but there are also a few other less important collections like the Nighantu Granthas, Madhava Nidana, and Bhava Prakasha, which were put together by different academics.

#### **Basic doctrine principles of Ayurveda**

Five elements make up the universe, according to Ayurveda: Vayu means air, Jala means water, Aakash means space or ether, Prithvi means earth, and Teja means fire. In Ayurveda, these five substances are referred to as Pancha Mahabhoota. It is said that they collaborate in various ways to produce the three fundamental humours of the human body. Together, the three humours of Vata, Pitta, and Kapha are referred to as the "Tridoshas." These doshas control the fundamental

physiological functions of the body and have five sub-doshas for each of the main doshas. Saptadhatus (seven tissues), Rasa (tissue fluids), Meda (fat and connective tissue), Rakta (blood), Asthi (bones), Majja (marrow), Mamsa (muscle), Shukra (sperm), and three Malas (waste products) (sweat) make up the human body, according to Ayurveda. The Vata dosha regulates cell movement, electrolyte balance, and waste elimination. Dryness intensifies the effects. The temperature of the body, visual nerve coordination, hunger, and thirst are all controlled by the pitta dosha. As the body gets too hot, pitta gets worse. The Kapha dosha is aggravated by foods high in sugar and fat. The joints are lubricated and able to function properly thanks to the Kapha dosha. It is believed that Kapha is in charge of building up, Pitta of metabolism, and Vata of catabolism. 15 The three doshas and other factors must be balanced for good health. If any of the three are out of balance, you will get sick or sick. 16 Ayurveda is based on the idea that a healthy life requires a perfect balance between the Tridoshas in the human body and the elements found in nature. 17 The seven primary types of tissue in the human body are referred to as "Sapta Dhatus" in Ayurvedic medicine. The human body's proper function is ensured by these seven tissues working together. The Rakta Dhatu is similar to blood in that it controls the flow of blood components and blood cells throughout the body. The skeletal muscles that make up the Mamsa Dhatu (adipose fat) may be consulted by the Meda Dhatu (adipose tissue) when it requires assistance. The bones make up the Asthi Dhatu. On the other hand, the fluids and bone marrow that enable the bones to move and function

make up the Majja Dhatu. The reproductive systems are under the control of the Shukra Dhatu.

The Tri Malas and Trayo Dosa Agni, in addition to the Doshas and Dhatus, are significant aspects of Ayurvedic philosophy that should be investigated. "Tri Malas" refers to all three kinds of waste from digestion and metabolism. Their names are Mutra, which means urine, Purisa, which means feces, and Sveda, which means sweat. According to Ayurveda, an imbalance in the body's natural balance between the three doshas can lead to conditions like asthma, rheumatoid arthritis, and even diarrhea. Urinary tract infections, cystitis, and stomach discomfort may all occur if the body's Mutra Mala (urine) is not drained. The Sveda Mala may irritate the skin and cause fluid imbalances if it is not removed from the body. The body's biological fire, or "Agni," is the subject of all metabolic activity, according to Ayurvedic practices. There are thirteen different kinds of Agni in a human body. Jatharagni, which controls the digestive fire, is the most significant. Jatharagni is linked to Pitta and later Vatta in the physical body. When the body's digestive fire is stoked by an increase in acidity, Pitta levels and associated symptoms rise. Maintaining a balanced microbiota, properly digesting food, and providing the body with the fuel it needs are all dependent on a strong digestive fire. Stomach pain and health issues like ulcers, diarrhea, and constipation can result from any disruption of this equilibrium.

By taking into account a person's body type, history of illness, Dosha qualities, way of life, and environment, Ayurveda offers a variety of ways to improve their health.

The "Pancha karma" method is used in Ayurvedic treatments. The pancha karma treatment uses a variety of techniques to rejuvenate, cleanse, and extend the body's lifespan. To remove poisons from the tissues of the body, a set of five actions known as the Pancha karma are performed. All of the purgation methods (administration of medicines like decoctions, oils, and fumes through the nose) include enema with medicated oils (Nasya), therapeutic vomiting (Vaman), enema with medicinal oils (Basti), blood purification (Rakta moksha), and purgation using powders, pastes, or decoctions (Virechan).

Pradhan karma (primary therapeutic process), Paschat karma (regimes to be followed to restore the body's digestive and other absorptive procedures to their normal state), and Poorva karma (body preparation for treatment) are the three primary therapeutic processes. Clarified butter and medicinal oils are used in the oleation process. Swedan, or sweat, is produced in some areas of the body when steam therapy is used. Giving a liquorice and honey decoction followed by curd and rice a few hours prior causes forced vomiting, also known as vama. People are under the impression that these drugs make them vomit more. Senna, cow's milk, psyllium seed, and castor oil are some of the herbs and liquids used in the Virechana treatment for constipation. Pancha karma enemas are made with herbal decoctions like sesame or anise or medicinal oils.

In practice, there are eight branches of Ayurveda called "shtanga Ayurveda." Kayachikitsa is for internal medicine; Bhootavidya is for mental illnesses; Kaumar Bhritya is for children; Rasayana is for geriatrics; Vajikarana is for eugenics and aphrodisiacs; Shalya is for surgery; Shalakya is for ear, nose, throat, and eyes; and Agada Tantra is for toxicological studies.

Due to its comprehensive understanding of herbs, minerals, and animal products, as well as the aforementioned philosophical concepts, Ayurveda enjoys widespread popularity worldwide.

#### **Why Poly herbal:**

Due to the belief that poly herbaceous formulations provide benefits not available in contemporary treatments, polyherbal formulation has recently gained widespread acceptance and popularity.

Polyherbal is well-known for its utility in a wide range of medical contexts. The overall efficacy of poly herbal formulations is enhanced by the incorporation of a variety of phytochemicals that have been produced in a manner that is appropriate. Second, polyherbal compounds frequently possess a wide therapeutic range. The majority of polyherbals are safe at high dosages and effective at low doses. Contrasted with traditional treatment, polyherbal details frequently make less antagonistic impacts. Most of all, there is a belief that poly herbals are natural, good for the environment, cheaper than modern medicine, easier to find, and more affordable, especially in underdeveloped countries and rural areas. Polyherbal medicines also have a long history of experimentation and a solid foundation in

traditional beliefs and practices. Polyherbs are socially and culturally acceptable because of these factors. The therapeutic preparation of multiple herbs is referred to as polyherbal formulation (PHF). In Ayurveda and other traditional medical systems, a precise ratio of multiple herbs can be used to treat disease. [1] It is used to treat diabetes and other conditions in these systems. The Ayurvedic text "Sarangdhara Samhita," which was written in 1300 A.D., emphasized the idea of polyherbalism in this ancient therapy. Plant formulations and mixed plant extracts are favored over single plant extracts in the traditional Indian medical system. It is common knowledge that Ayurvedic herbs come in a variety of dosage forms, with PHF being the most common. Polyherbalism has advantages over single-herb formulations that are the result of synergy. Herbs are plants or parts of plants that are valued for their therapeutic, aromatic, or flavorful qualities. Because they produce a variety of chemicals, herbs can be thought of as biosynthetic chemical labs. Many of the ingredients in herbal treatments and medications are plant parts or unpurified plant extracts that often work together in a synergistic way. The practice of using herbs or herbal products for their medicinal or therapeutic properties is referred to as herbalism or herbal medicine. They can come from any part of the plant, but the most common sources are the leaves, roots, bark, seeds, and flowers. They are taken in through the mouth, inhaled, swallowed, or applied topically. Numerous biochemicals derived from plants are included in herbal products, many of which contribute to the plant's medicinal properties. Chemicals with proven therapeutic properties are

referred to as "active components" or "active principles." The plant species, harvest time and season, soil type, preparation method, and other factors all play a role in their existence. Over the past ten years, natural medicines have gained more popularity and acceptance in both developing and developed nations. Around 80% of the world's population, particularly in developing nations, rely on herbal medicine as their primary form of healthcare due to poverty and limited access to modern medicine. Traditional medicine is frequently regarded as an integral part of the culture of many societies. There are many reasons why people in the West are drawn to herbal remedies, but the most important one is the belief that, like our ancestors before us, they would help us live better lives. Herbal remedies are frequently regarded as a gentle and balanced treatment option. Billions of people use herbal products as home remedies and prescription medications. As a result, they hold a significant portion of the global drug market. toxicological research For quality requirements and manufacturing methods, there are no effective regulatory mechanisms. Because herbal remedies can be purchased without a prescription, consumers may not be aware of the risks associated with inferior products. As a result, one of the most essential requirements for the production of a drug of high quality is the drug's stable and well-defined composition. Assuring consistent product quality is essential to the sector's survival and success due to the nature of plant-based goods, which frequently depend on multiple variables and are impacted by them (Bauer, 1998). The prescribed dosage must be taken over

a specific time period in order to achieve the intended effect from herbal remedies. Some herbs, like the vast majority of biologically active chemicals, may be poisonous and cause undesirable side effects, despite the widespread belief that the majority of herbal preparations are safe for human consumption (Bisset, 1994). Due to genetic, cultural, and environmental factors, the components of plants and herbal preparations vary widely, making their application more challenging than it would have been otherwise. For instance, it can be challenging to regulate and determine the quality of various batches of preparation, the active principles are variable and may not be known, and the availability and quality of the raw materials are frequently problematic. The majority of nations place herbal products on the market without adequate scientific review or mandatory safety testing.

### **Importance of Polyherbal Formulations**

In Ayurveda, medicines are based on two fundamental concepts. The first individual only uses one drug, while the second individual uses multiple drugs. Polyherbal refers to the use of multiple drugs. This primary herbal treatment has existed for a long time. Polyherbalism is the practice of combining various medicinal herbs to enhance their effectiveness. Because they help make treatment work better, polyherbal drugs are getting more and more popular. Because a single plant's active phytochemical components are insufficient to produce the desired therapeutic effects, polyherbal medicine is crucial. In a polyherbal formulation, the therapeutic effect will be stronger and the toxicity will be lower when multiple herbs

are carefully combined. Individual plant parts are insufficient to produce desirable pharmacological effects.

### Conclusion

Avoiding suffering that isn't necessary and leading a long, healthy life. Natural elements are used in Ayurveda to eliminate the disease's underlying cause by restoring balance and establishing a healthy lifestyle to prevent imbalance from returning. Herbal medicines have been around for a long time and have been used for a variety of treatments in ancient Chinese, Greek, Egyptian, and Indian medicine. Individual plants' active phytochemical components are insufficient to produce the desired therapeutic effects. It will have a better therapeutic effect and be less toxic when multiple herbs are combined in a specific ratio. The most important aspects of polyherbalism and its clinical significance are the primary focus of this review.

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