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Herbaceuticals: A Review

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Abstract

The number of patients seeking alternate and herbal therapy is growing exponentially. Herbal medicines are the synthesis of therapeutic experiences of generations of practicing physicians of indigenous systems of medicine for over hundreds of years. Herbal medicines are now in great demand in the developing world for primary health care not because they are inexpensive but also for better cultural acceptability, better compatibility with the human body and minimal side effects. However, recent findings indicate that all herbal medicines may not be safe as severe consequences are reported for some herbal drugs. Most herbal products on the market today have not been subjected to drug approval process to demonstrate their safety and effectiveness. Thousand years of traditional use can provide us with valuable guidelines to the selection, preparation and application of herbal formulation. To be accepted as viable alternative to modern medicine, the same vigorous method of scientific and clinical validation must be applied to prove the safety and effectiveness of a therapeutically product. In the present study we attempted to describe the present scenario and project the future of herbal medicine and introduce a new term “Herbaceuticals”

Keywords Herbal, Safety, Alternative Medicine, Scientific, Herbaceuticals.

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Introduction

Herbal medicines are finished, labelled, medicinal product that contain active ingredient from various parts of plants or other plant material or combination thereof, whether in the crude state or as plant preparation. The herb is

generally given as a whole and is not fragmented and synthesised. Neutraceuticals are the products that also possess a pharmacological effect, but are based on a nutrient that exceeds the boundaries of what are considered herbal medicinal. These minerals, vitamins and cations

(e.g. Chromium, which has found use in Diabetes mellitus) Plant material includes juice, gums, fatty acids, fatty oils, essential oils and any other substances of this nature. Herbal medicines may contain excipients in addition to the active ingredients. Medicine containing plant materials combines with chemically active defined substances, including chemically defined, isolated constituents of plant are not considered being herbal medicines (Muhammad Ali; 2008).

The use of plants for healing purposes predates human history and forms the origin of much modern medicine. Many conventional drugs originated from plant sources: a century ago, most of the few effective drugs were plant based. Examples include aspirin (willow bark), morphine (from the opium poppy), quinine (from cinchona bark), and digoxin (from foxglove) (Kamboj VP; 2000). Medical history from the beginning of time is filled with descriptions of persons who used herbs to heal the sick of the society. However, parallel to the onset of the industrial revolution we witnessed the rise of allopathic medicine. Herbal medicine was also an effective healing method, but was viewed less enthusiastically. Herbal products were discarded from conventional medical use in the mid 20th century, not necessarily because they were ineffective but because they were not as economically profitable as the newer synthetic drugs. In the early 19th century, scientific methods become more advanced and preferred, and the practice of botanical healing was

dismissed as quackery. Recognition of the rising use of herbal medicines and other non-traditional remedies led to the establishment of the office of Alternative Medicine by the National Institute of Health (NIH) USA, in 1992. Worldwide, herbal medicine received a boost when the WHO encouraged developing countries to use traditional plant medicine to fulfil needs unmet by modern systems (Valiathan MS; 1998).

Herbal Medicine

The WHO has recently defined traditional medicine (including herbal drugs) as comprising therapeutic practices that have been in existence, often for hundreds of years, before the development and spread of modern medicine and are still in use today. Traditional medicine is the synthesis of therapeutic experience of generations of practicing physicians of indigenous system of medicine. Traditional preparations comprise medicinal plants, minerals and organic matter etc. Herbal drugs constitute only those traditional medicines which primarily use medicinal plant preparations for therapy. The earliest recorded evidence of their use in Indian, Chinese, Egyptian, Greek, Roman and Syrian texts dates back to about 5000 years. The classical Indian texts include Rigveda, Atharvaveda, Charak Samhita and Sushruta Samhita. The herbal medicines/traditional medicines have therefore been derived from rich traditions of ancient civilizations and scientific heritage (Kamboj VP; 2000).

Status of Herbal Medicine in India

India has a rich tradition of herbal medicine as evident from Ayurveda, which could not have flourished for two thousand years without any scientific basis. Ayurveda which literally means knowledge (Veda) of life (Ayur) had its beginning in Atharvaveda (Circa 1500-1000 BC). Charak Samhita and Sushruta Samhita are the two most famous treatises of Ayurveda several other were compiled over the centuries such as Bela Samhita, Kashyap Samhita, Agnivesh Tantra, Vagbhata's Ashtang hridaya (600), Madhava Nidan (700 AD). Vegetable products dominated *Indian Meteria Medica* which made extensive use of bark, leaves, flower, fruit, root, tubers and juices. The theory of *rasa*, *vipaka*, *viry* and *prabhava* formed the basis of Ayurveda pharmacology, which made no clear distinction between diet and drug, as both were vital component of treatment. Charak, Sushruta and Vagbhata described 700 herbal drugs with their properties and clinical effects. Based on clinical effects 50 categories of drug have been decribed – such as appetizers, digestive stimulant, laxatives, anti-diarrhea, anti-haemorrhoid, anti-emetic, anti-pyretic, anti-inflammatory, anti-pruritic, anti-asthmatic, antiepileptic, anti-helminthic, haemoptietic, haemostatic, analgesis, sedative, promoter of life (Rasyana), promoter of strength, complexion, voice, semen and sperm, breast milk secretion, fracture and wound healing, destroyer of kidney stones etc. The advent of western medicine in the eighteen century was a set back to the practice of

Ayurveda, which suffered considerable neglect at the hands of the colonial administration. After the first success of reserpine, an enormous amount of characterization of medicinal plants was done in many laboratories and University Departments, but the outcome was discouraging because the effort was disorganized, thin spread and non-focused. Molecular pharmacology now provides a new interface between Ayurveda and modern medicine. Using modern techniques, various categories of Ayurvedic drug could provide novel molecular probes. It is now possible to explore the mechanism of action of Ayurvedic drugs in terms of current concept of molecular pharmacology. Some striking example, of Ayurvedic drugs which are understood in terms of today's molecular pharmacology. Use of the herbal medicine in jaundice, presumably viral hepatitis, has been known in India science the Vedic times (Lele RD; 1999).

About 170 phyto-constituents isolated from 110 plants belonging to 55 families have been reported so far to possess liver protective activities. It is estimated that about 6000 commercial herbal formulations are sold world over as hepatoprotective drugs. Of them about 40 patent polyherbal formulations representing a variety of combinations of 93 Indian herbs from 44 families are available in the Indian market. However, the following four herbal medicines have been found to be most promising in the treatment of viral hepatitis, Silymarin obtained

from the seeds of *Silibum marianum*, extracts of *Picrorrhiza kurroa*, popularly known 'Kutki' and extract of many plant of the genus, *Phyllanthus* have been used as hepatoprotective, of them (Sharma PP; 2010). However, a new Japanese preparation from glycyrrhizin, stronger neomenophagen C (SNMC), appears to be very promising in the treatment of virus related chronic liver diseases (Tandon, 1999). Liv 52, popular brand of Himalaya Company; India, is a extract of several plants prepared for Ayurvedic medicine was reported to improve serum biochemistry values in rats with toxic liver damage, and uncontrolled observations in patients with liver disease seemingly gave similar result (Jain and DeFilipps, 1991). Double-blinded and well-designed clinical trials have also been conducted with Argyowardhani in viral hepatitis, *Mucuna pruriens* in Parkinson's disease, *Phyllanthus amarus* in hepatitis and *Tinospora cordifolia* in obstructive jaundice (Pal, 2002). India is one of the 12 mega biodiversity centers having over 45,000 plant species. About 1500 plants with medicinal uses are mentioned in ancient texts and around 800 plants have been used in traditional medicine (Kamboj, 2000). However, India has failed to make an impact in the global market with drugs derived from plants and the gap between India and other countries is widening rapidly in the herbal field. The export of herbal medicine from India is negligible despite the fact that the country has a rich traditional knowledge and heritage of herbal

medicines. The circumstance, which tends to frustrate a major developmental initiative for herbal products are many, (i) There is no clear definition of the target to be achieved or a time frame within which the target, if any, should be achieved.

(ii) There is no coordination among the national laboratories that are investigating medicinal plants.

(iii) A serious dialogue between publicly funded institution and the industry is conspicuous by its absence.

(iv) A mechanism for regular interaction between the expert in Ayurveda and R and D group

Difference of Herbal and Conventional Drugs

Although superficially similar, herbal medicine and conventional pharmacotherapy have three important differences:

Use of Whole Plants- Herbalists generally use unpurified plant extracts containing several different constituents. It is claimed that these can work together synergistically so that the effect of the whole herb is greater than the summed effects of its components. It is also claimed that toxicity is reduced when whole herbs are used instead of isolated active ingredients ("buffering")[1]. Although two samples of a

particular herbal drug may contain constituent compounds in different proportions, practitioners claim that this does not generally cause clinical problems. There is some experimental evidence for synergy and buffering in certain whole plant preparations, but how far this is applicable to all

herbal products is not known (Jayaraman KS; 1996).

Herb Combining- Often several different herbs are used together. Practitioners say that the principles of synergy and buffering apply to combinations of plants and claim that combining herbs improves efficacy and reduces adverse effect. This contrasts with conventional practice, where polypharmacy is generally avoided whenever possible (Jayaraman KS; 1996).

Diagnosis- Herbal practitioners use different diagnostic principles from conventional practitioners. For example, when treating arthritis, they might observe, “under functioning of a patient’s symptoms of elimination” and decide that the arthritis results from “an accumulation of metabolic waste products”. A diuretic, cholerectic or laxative combination of herbs might then be prescribed alongside herbs with anti-inflammatory properties (Jayaraman KS; 1996).

Why People Use Herbal Medicine

The earliest evidence of human’s use of plant for healing dates back to the Neanderthal period. Herbal medicinal is now being used by an increasing number of patients who typically do not report to their clinician’s concomitant use. There are multiple reasons for patients turning to herbal therapies. Often cited is a “sense of control, a mental comfort from taking action,” which helps explain why many people taking herbs have diseases that are chronic or incurable viz. diabetes, cancer, arthritis or AIDS. In such

situations, they often believe that conventional medicine has failed them. When patients use home remedies for acute, often self-limiting conditions, such as cold, sore throat, or bee sting, it is often because professional care is not immediately available, too inconvenient, costly or time-consuming. In rural areas, there are additional cultural factors that encourage the use of botanicals, such as the environment and culture, a “man earth relationship.” People believe that where an area gives rise to a particular disease, it will also support plants that can be used to cure it. In India vast sections of the rural population have no access to modern medicine. Hundred of primary health centres which are intended to serve rural areas, lack staffs, diagnostic facilities, and adequate supplies of drugs. The rural population is heavily dependent on traditional medical systems. Natural plant products are perceived to be healthier than manufactured medicine. Additional, report of adverse effect of conventional medications are found in the lay press at a much higher rate than reports of herbal toxicities, in part because mechanisms to track adverse effect exist for conventional medicines whereas such data for self treatment is harder to ascertain. Even physicians often dismiss herb as harmless placebos (Kamboj VP; 2000).

Synthetic Drugs Derived From Herbs

Many of our modern drugs (e.g., aspirin, Morphium, Tamoxifen, Vincristin, etc.) were originally derived from botanical material. In

fact, many skeptics wonder why we cannot also extract and synthesize the active ingredients from well-researched herbal medicines such as St. John's Wort and generate single ingredients derived from that plant. This would clearly solve several problems inherent in herbal medicine, such as standardization. While this approach of creating pure compounds does work occasionally, it fails in other instances. One reason can be the fact that herbal medicines tend to have not one but a multitude of pharmacologically active ingredients. Thus extracting only one ingredient might reduce the pharmacological activity of the whole plant extract.

Single ingredients derived from herbal extracts can no longer be considered herbal medicines as, by definition, herbal medicines are based on the whole plant. Nevertheless, such drugs are reminders of the fact that many plants contain molecules that are pharmacologically active and can thus have both beneficial and detrimental health effects.

Trifala Churna

Triphala is a unique herbal formulation that has been a gift from Ayurveda to this world. Triphala since centuries has been an herb of choice for an Ayurvedic practitioners to cure many diseases.

Benefits of Trifala Churna are; extremely beneficial in treating constipation/laxative, helpful in countering allergies, powerful eye tonic, helpful in treating urinary tract infection

(UTI), use in treating female reproductive tract abnormalities, it is best tonics and it helps in reducing inflammation.

Dose: 1 spoon twice a daily with water or honey.

Tulsi Tablets

Tulsi also known as the holy basil, it is widely used around the world. This precious herb is even worshipped throughout India and as well as numerous other parts of the world. Tulsi has a wide range of medicinal uses and helps in most of the existing diseases on earth.

Benefit of Tulsi tablets are: Nerve tonic (helps to sharpen Memory), helps to mobilize the mucus in bronchitis and Asthma, acts as anti stress agent, very good in headache, have anti-inflammatory properties, a powerful antioxidant, antiviral and antifungal properties, useful in skin diseases, useful in blood – glucose management, commonly used in fever, influenza, common cold & catarrh.

Smurti Ras Capsule

Smurti Ras is for the improvement of memory and indicated for short term and long term memory for all age groups. It also promotes the Concentration and intelligence, also useful in depression. Smurti Ras is very useful particularly for students, office executives, and businessmen who are doing very heavy mental work and also in mentally retarded persons.

Chyavanprash Avleha

It is a semisolid/Jam-like mixture of herbs, spices, and other ingredients, prepared as per the Ayurvedic traditions. It is widely consumed in

India because of its health benefits. With the growing interest of masses in Vedic Sanskriti, Yoga and Ayurveda, consumption of Chyawanprash has increased in India and abroad. This is the oldest commercial brand continuously used any where in the world.

Various Indian holy books like Mahabharat Purans etc, tell us that this formulation was first prepared by the 'Royal Vaid's', named Ashvini Kumar brothers, the twins, during Vedic times, 10,000 years ago Chyavan Rishi has created this formulation. He consumed for long time and lived long without any disease; hence the name Chyawanprash was came from Chyavan rishi's name. The first historically documented formula for Chyvanprash is found in Charaka Samhita, the ancient Ayurvedic treatise book.

Benefits of Chyavanprash are; anti oxidant improves immunity, fights against the pathogens, improves appetite, digestion and memory power, in chronic cold, Cough and sinusitis it is very effective. It is recommended to the patients suffering from Tuberculosis and AIDS.

Ashwagandha Oil

Ashwagandha Oil is very good for body massage. It improves muscle tone, makes the muscles strong reduces the pain in body and gives energy and freshness. In Muscular Atrophy-leg cramps, weakness, massage the body with Aswagandha Oil. Ashwagandha oil lubricates the joints and makes them stronger and keeps away from degeneration.

Ashwamrut Syrup

Ashwamrut is a General Tonic for all age group. Ashwamrut is good immunity enhancer. Ashwamrut Contains Ashwagandha, Nagkeshar, Pippli, Vidang, Guduchi, Gokhru and other Herbs. Ashwamrut increases appetite, improves metabolism, gives energy, reduces fatigue for promotes good health. After a long term illness like Fever, Typhoid, Tuberculosis, Aids, Malaria, and Surgeries etc-it's recommended to improve health, appetite and energy. In leg cramps, general weakness, loss of appetite-Ashwamrut is best solution. That's why it is a great elixir. In chronic cold and Urticaria, Lichen planus are such diseases where Ashwamrut improves immunity and cut down the force of recurrence.

Dosage – 10 ml twice a day

Herbal Cosmetics

Herbal cosmetics cannot product composed of plant material in totally or cosmetic base containing plant material like extracts, tinctures, distillates, etc., different parts of plant like stem, leaves, flowers, fruits, bark, roots, seeds, rhizomes are used in cosmetics. Before using plant material in cosmetics the plant should be identified properly and then a standardised material like extract, tincture should be used. It is advisable to make standard for crude plant material. It will be useful to give guidelines for preparing some plant material like decoction, tinctures, flower water etc. these guidelines will helpful to those who want to make herbal material for use in cosmetics (Kamboj VP; 2000).

Conditioning Rinses

A general procedure for making extract for all herbal hair rinses is as under: Mix herbs thoroughly. Place 30-100 g of herb mixture in a non-metal pot or in a stainless steel pot. Add 250-500 ml of water and cover the pot. Heat gently and bring to boil, lower the heat and simmer for 3-5 min. strain the liquid and preserve it. While using it, an equal quantity of water can be mixed before rinsing the hair (Miller LG; 2005).

Herbal Mask and Packs

Herbs have extensive use in bath mixtures and masks/packs. In fact they can be used by any sex and on any part of the body. They are used to exfoliate the outer scaly layer of the skin, absorb excess oil, texture skin surface and moisturize the skin (Miller LG; 2005). Masks should be applied to a clear skin. Normally masks remain on the skin for 10 to 15 minutes. After removing the mask, face or other part of the body should be rinsed with warm water.

Facial Steaming Herbals

Herbal steaming cleanses, increases perspiration and removes dirt, left over cosmetics. steaming hydrates the skin of the face. However, too much steaming or steaming too often can deplete the skin of natural moisture and oil in the skin. Two to three times a week or even less will be sufficient (Miller LG; 2005).

Herbal Lotions

Herbal lotions can be prepared by using different herbs and solvent like water, glycerine, etc.

Herbal Gels and Soaps

Herbal gels can be prepared with herbal extract and gelling agent like quince seed mucilage. Herbal soaps can be prepared by first preparing herbal extracts and then adding soft soap to the desired consistency. Some examples are given below;

Herbal Hair Shampoos

A general procedure for making extract for shampoos is as under: Place about 100 gm of mixing with soft soap or other detergent shampoos. Alternatively this extract can be incorporated in shampoo formulation by replacing a part of water.

Bath Oils

Fragrances and fragrant oils in bath have been used from early times. There are two types of oil in bath, one, floating oils and, two, those that disperse in water.

Natural hair dyes

Many herbs are used to dye the hair. When using herb for the hair dyeing the following steps may be followed:

Wash the hair with good quality shampoo, rinse with warm water and towel dry. Apply petroleum jelly or lanolin to the hair-line to avoid staining of the scalp. Put on gloves on the hands and apply thick herb paste made with water from root to the tail of the hair working only on a section at a time. Roll the hair up and flat to the head. Wrap the head in a muslin cloth or cotton towel wrung out in hot water and cover the head tightly with a plastic cap. Leave it for sufficient time. This may

be 10 minutes to several hours depending on the colour of the hair and the shade desired. After the coloured had developed, rinse the hair with warm water over and again till the herbs are removed. Then rinse with cold water then dry the hair.

Herbal baths

There are few fundamental things for a beautiful body. this includes right diet, healthy invigorating exercise, regular test and cleanliness. Herbal baths are aid to beautiful body. They are antidote to improve air and harsh water conditions. Herbs are used to smooth and hydrate skin and keep theb skin healthy and young looking. Herbal baths can be taken 2-3 times in a week (Miller LG; 2005).

Herbal powder and deodorant

Body odours are affected by food that we eat. Body odour is also significantly affected by synthetic fabrics. Synthetic fabric covers our body with an impermeable layer making the skin to breathe difficult. A diet strong in meat results in stronger body odour. Eating yogurt has beneficial effect by changing bacterial population. Taking bath is a good measure to remove body odour.

Conclusion

All the above discussed information comes under the term 'Herbaceuticals'. The 'HERBACEUTICALS' refers to the combination of Herbal and Pharmaceuticals. Herbaceuticals are cosmetic products with biologically active ingredients purporting to have medical or drug-like benefits. The "Herbaceuticals" label applies

to products applied topically, such as creams, lotions and ointments from herbal source and products which are ingested orally from herbal source. The wide spread use of herbal medicine is not restricted to developing countries. The rebirth of herbal medicine, especially in developed countries, is largely based on a renewed interest by the public and scientific information concerning plants. Classically trained physicians cannot ignore herbal medicines any more. They must realize that large number of patients is using herbal medicines. They must have adequate knowledge and should be more open to discuss with their patient regarding herbal medicine. Patient disclosure of herbal use may provide an opportunity for the physician to redirect the patient towards effective conventional health care. By taking a complete drug and supplement history, a dialogue can be initiated to rationally compare the appropriateness of herbal remedies and regulated pharmaceuticals in relation to the severity of the condition. Patient with chronic conditions such as AIDS or cancer should also be warned that some of the adverse effects of herbals are often similar to symptoms of problem associated with their disease or treatment, thus making it difficult to discern if the disease or the "remedy" is the problem. For the herb-using patient who views conventional medicine with ambivalence, the physician can foster a more open and communicative relationship by demonstrating an objective understanding of both alternative and

conventional approaches. The public should be better protected and informed on herbal medicine, and doctors should take an active part in this process.

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