



CODEN [USA]: IAJPBB

ISSN : 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187

<https://doi.org/10.5281/zenodo.6464992>
Available online at: <http://www.iajps.com>

Review Article

HERBS-A INDIGENOUS MEDICINES- A BRIEF OVERVIEW

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Article Received: March 2022

Accepted: March 2022

Published: April 2022

Abstract:

Herbal medicines that utilizing with their use of different parts of plant's such as seeds, berries, roots, leaves, bark or flowers as an medicinal and therapeutic purpose. surgeons (called Bheshaja or vaidya) but recently herbal medicine has attracted much attention as alternative medicines useful for treating or preventing life-style related disorders. Whole herbs contains many ingredients, and it is likely that they work together to produce the desired medicinal action. The types of environment (Climate, Bugs, Soil, Quality) in which a plant grew will affects its components, as will how and when it was harvested and proceed. Herbs are the nature's gift to human being to make disease free well life. There are different sources of drug. Herbs are having two main different sources namely synthetic as well as natural origin. In modern years most of the drugs referred as medicine they are manufactured by chemical synthesis.. For most herbs, the specific ingredients that are causes a therapeutic effect is not known. Herbal drug treat many conditions such as asthma, migraine chronic fatigue rheumatic arthritis, editable bowel syndrome. Herbal preparations are best to consult with your family doctor or an herbalist before self treating.

Keywords: Ayurveda, Traditional medicines, higher plants, microbes, marine organisms.

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Please cite this article in press Chetan Y. Kadam et al, *Herbs-A Indigenous Medicines- A Brief Overview.*, Indo Am. J. P. Sci, 2022; 09(04)

INTRODUCTION:

Herbal medicine is the oldest and still the most generally used system of medicine in the world at present. It is medicine made completely from plants parts (leaves, roots, stem, flowers, and seeds). The World Health Organization (WHO) evaluates that 80 percent of the world population, currently using herbal medicine for some aspect of primary health care. As per WHO there are three kinds of herbal medicines: crude plant materials, processed plant materials and medicinal herbal products.

The classical Indian texts on herbal medicines include Rigveda, Atharveda, Charak Samhita and Sushruta Samhita. Herbal medicines are used by practitioners of traditional system of medicines across the world due to their well-established and widely acknowledged use. Ayurveda, which means science of long life, is believed to have originated over 6000 years ago and was designed to promote good health and long life rather than to fight disease and was practiced by physicians and surgeons (called Bhashaja or vaidya) but recently herbal medicine have attracted much attention as alternative medicines useful for treating or preventing life-style related disorders. According to recent surveys and studies, 15% to 40% consumers have used herbal medicine to cure many diseases. In last 25 years in United States, due to increasing cost of prescription medicines, combined with an interest in reusing to natural or organic remedies, has led to an increase in use of herbal medicines. Approximately 70% of German physicians prescribe plant based medicines to the patients.

Classification of Herbal Medicines

Herbal medicines can be classified into four categories as per WHO, based on their origin, evolution and the forms of current usage. While these are not always mutually exclusive, these categories have sufficient distinguishing features for a constructive examination of the ways in which safety, efficacy and quality can be determined and improved.

Category 1: Indigenous herbal medicines

This category of herbal medicines is historically used in a local community or region and is very well known through long usage by the local population in terms of its composition, treatment and dosage. Detailed information on this category of traditional medicines (TM), which also includes folk medicines, may or may not be available. It can be used freely by the local community or in the local region. However, if the medicines in this category enter the market or go beyond the local community or region in the country, they have to meet the requirements of safety

and efficacy laid down in the national regulations for herbal medicines.

Category 2: Herbal medicines in systems

Medicines in this category have been used for a long time and are documented with their special theories and concepts, and accepted by the countries. For example, Ayurveda, Unani and Siddha would fall into this category of TM.

Category 3: Modified herbal medicines

These are herbal medicines as described above in categories 1 and 2, except that they have been modified in some way—either shape, or form including dose, dosage form, mode of administration, herbal medicinal ingredients, methods of preparation and medical indications. They have to meet the national regulatory requirements of safety and efficacy of herbal medicines.

Category 4: Imported products with a herbal medicine base

This category covers all imported herbal medicines including raw materials and products. Imported herbal medicines must be registered and marketed in the countries of origin. The safety and efficacy data have to be submitted to the national authority of the importing country and need to meet the requirements of safety and efficacy of regulation of herbal medicines in the recipient country.

NATURAL SOURCES OF DRUGS

There are different sources of drug. Broadly speaking, there are two sources of drug namely synthetic and natural. Many drugs used in medicine today are developed by chemical synthesis. A recognized number of drugs are obtained from natural sources. The most important natural sources of drugs are

- (1) Higher plants,
- (2) Microbes,
- (3) Animals and

1. Higher Plants

There are 200,000 to 250,000 species of flowering plants growing on earth which belong to 10,500 genera are source of about 300 families. Of these higher plants, a number of genera are source of drugs. These genera are distributed among plant families like Solanaceae, Compositae, Papveraceae, Scrophulariaceae, Leguminosae, Rutaceae, Rubiaceae, Umbelliferae, Dioscriaceae, Gentaceae, Bromeliaceae, Apocynaceae, Rhamnaceae, Caricaceae, Plantaginaceae, Sterculiaceae, Ericaceae, Liliaceae and Gramineae. Scrutiny of the drugs

obtained from plants reveals that the majority of the drugs are derived from seed bearing plants (spermatophytes). Among the spermatophytes the angiosperms (flowering plants) have yielded a good number of useful medicinal plants than the gymnosperms (non flowering plants). The gymnosperms are useful sources for oils, resins and the alkaloid ephedrine. Within the angiosperms both monocotyledons and dicotyledons provide many useful drugs. Among the dicotyledons cinchona, ipecac, rauwolfia, belladonna, vinca are some of the important drugs from higher plants. Drugs consisting of entire plant or some part of it are often designated as crude drugs. Generally, only that part of the plant which contains the greatest amount of active constituent is collected and marketed. Thus a crude drug may consist of seeds, fruits, leaves, flowers, roots, and barks of stem or roots. In some cases, the wood of a tree may be used as a crude drug. Many of the plant products are important therapeutically. These are represented by the alkaloid, cardiac glycosides, anthraquinones, flavonoids, mucilage's and enzymes. Plant product like steroid sapogenins are important raw material for the synthesis of steroidal hormones and related drugs. Besides higher plants some of the lower plants also provide a number of useful drugs. Ergot which is a fungal drug is source for ergotamine. Many fungi are source of antibiotics. Agar and alginic acid are obtained from algae.

2. Microbes Vaccines

Vaccines are suspensions of living, dead, or attenuated (less virulent) microbes. Depending upon the source the vaccines are classified into three groups i.e. viral vaccines, bacterial vaccines prepared from viruses, bacteria and rickettsia, respectively.

Viral Vaccines:

Viral vaccines are used as prophylactic agents against smallpox, rabies, influenza, polio, measles and mumps. They contain live, attenuated or killed virus. Followings are different types of viral vaccines.

- Smallpox vaccine
- Rabies vaccine
- Influenza virus vaccine
- Poliomyelitis vaccine
- Measles vaccine
- Mumps vaccine
- Rickettsial vaccines

Bacterial vaccines:

Bacterial vaccines consist of suspensions of killed or attenuated pathogenic bacteria in isotonic sodium chloride solution or other suitable diluents. The general method of preparing a bacterial vaccine is cultivation of the specific organism in a suitable broth medium. The organisms remaining on the filter pad are washed with saline to remove any residual culture medium. They are then suspended in saline and killed, usually by addition of formalin, phenol, heat, or other suitable preservative the product is adjusted to a specific potency. Typhoid vaccine, cholera vaccine, plague vaccine, pertussis vaccine, BCG vaccine are the important bacterial vaccines which are used as active immunizing agents.

Followings are different types of bacterial vaccines.

- Typhoid vaccine
- Cholera vaccine
- Plague vaccine
- BCG vaccine

Toxoids: are also microbial products used to produce active immunity against diseases. The waste products of bacteria which are poisonous to the animal body are called toxins. When the excreted toxins of the bacteria are dissolved in the surrounding culture medium they are known as exotoxins. When they are retained within the bacterial body they are referred as endotoxins when the exotoxins are treated formaldehydes their toxic properties are reduced or eliminated but their antigenic property is retained. These products are called fluid toxoids. When the fluid toxoid is precipitated with or absorbed on alum, aluminium hydroxide or aluminium phosphate an adsorbed toxoid is produced. Both fluid and adsorbed toxoids are used to induce artificial active immunity in susceptible individual. Tetanus toxoid and diphtheria toxoid are the examples of such microbial products. A combination of diphtheria and tetanus toxoid with pertussis vaccine is known as triple antigen or DPT. it is used to produce immunity in young children against diphtheria, tetanus and whooping cough.

3. Animals

Certain animal parts and animal products are used as drugs. The major groups of animal products are used in medicine are hormones, enzymes, animal extractives, organs and bile acids.

Hormones

Hormones are mammalian products that are secreted by endocrine or ductless glands of animals, and released directly into the blood. The most important hormone products are thyroid, conjugated estrogens, insulin, epinephrine (adrenaline), oxytocin,

vasopressin and gonadotropins. Thyroid is a modified preparation of the thyroid glands of sheep and pigs. It is given orally to treat patients suffering from thyroid insufficiency. It contains the hormone thyroxine. Conjugated estrogen is an amorphous preparation containing water soluble conjugated forms of mixed estrogens obtained from thyroid urine of pregnant mares. It is employed in the treatment of menopausal symptoms in the female and also used for therapy of dysmenorrhea. Insulin is a polypeptide hormone secreted by the beta cells of the islets of langerhans, situated in the pancreas of all vertebrates. Pancreas of cattle's or pigs is the major source of this hormone. Insulin is available in several different forms. It is used in the therapy of diabetes. Epinephrine (adrenaline) is a hormone produced by adrenal medulla in man. It is found in other animal also. Because of its simple structure, all of the epinephrine used in medicine today is prepared by synthetic means. It is used as a vasoconstrictor drug. It is also a rapid acting bronchodilator useful in the treatment of acute asthma.

Oxytocin is a polypeptide hormone secreted by posterior pituitary gland. It causes contraction of uterine muscles and also stimulates the ejection of milk in lactating mothers. This hormone is obtained from the pituitary glands of cattle's and pigs. It can also be prepared by synthesis. Oxytocin is used to induce labor in full-term pregnant women and to stop haemorrhage after child birth. Vasopressin is also a peptide hormone obtained from the posterior lobe of pituitary gland of healthy cattle and pigs. It is used in the treatment of intestinal paralysis. It is also used in the treatment of diabetes insipidus because of its antidiuretic action. Gonadotropins are mucoid hormones secreted by the anterior lobe of the pituitary gland. These hormones are prepared commercially from either horse serum or from the urine of pregnant women. They control the production of sex hormones in the body. Medicinally they are used in the treatment of infertility.

Enzymes

Enzymes are biological catalysts produced by living organisms. The enzymes are proteins whose molecular weight ranges from about 13,000 to 840,000. Some of the important enzymes used in medicine are pancreatin, trypsin, chymotrypsin, fibrinolysin, pepsin and hyaluronidase. Pancreatin is a preparation which contains enzymes of the pancreas. It is prepared commercially from pig pancreas. It is used in the treatment of pancreatitis, a condition resulting from a deficient production of these enzymes by the body. Trypsin is a proteolytic enzyme prepared commercially from the pancreas of

ox. It is used by topical application for treatment of wounds, ulcers, abscesses, and fistulas.

New Guidelines for Herbal Medicines

The guidelines seek to establish two cardinal principles: protection of the rights of human subjects and authenticity of ASU medicine clinical trial data generated. These guidelines are formulated based on CDSCO Document on GCP Guidelines (2001) for Clinical Trials on Pharmaceutical Products. They should be followed for carrying out all ASU medicine research in India at all stages of drug development, whether prior or subsequent to product registration in India. These GCP guidelines have to be followed during a clinical trial, if these not follow than clinical trial will be suspended by regulatory authorities. GCP guidelines also provide the compensation related guidelines for participants if any unwanted result or death of participants occurs during clinical trial. From 2017 onwards, its also mandatory that there must be expiry and manufacturing date present on product label.

Indian Regulations

In India, herbal medicines are regulated under the Drug and Cosmetic Act (D and C) 1940 and Rules 1945, where regulatory provisions for Ayurveda, Unani, Siddha medicine are clearly laid down. Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) is the regulatory authority and mandate that any manufacture or marketing of herbal drugs have to be done after obtaining manufacturing license, as applicable. The main focus of this department is on development of Education and Research in Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy systems. Laws and regulations on herbal medicines are partly the same as those for conventional pharmaceuticals. The D&C Act extends the control over licensing, formulation composition, manufacture, labelling, packing, quality, and export. Schedule "T" of the act lays down the good manufacturing practice (GMP) requirements to be followed for the manufacture of herbal medicines.

Future importance of Herbal Medicine:

It is estimated that there are about 350,000 species of existing plants (including seed plants, bryophytes, and ferns), among which 287,655 species have been identified as of 2004. Relatively small percentages (1 to 10%) of these are used as foods by both humans and other animal species. It is possible that even more are used for medicinal purposes. 30 World Health Organization (WHO) has shown great interest in documenting the use of medicinal plants used by tribes from different parts of the world. Many developing countries have intensified their efforts in

documenting the ethno-medicinal data on medicinal plants. Research to find out scientific evidence for claims by tribal healers on Indian herbs has been intensified. Once these local ethno-medicinal preparations are scientifically evaluated and disseminated properly, people will be better informed regarding efficacious drug treatment and improved health status.

The traditional knowledge system needs to be studied, documented, preserved and used for the benefit of humankind, before it is lost forever. This will require a holistic approach, and involvement and participation of local inhabitants. The Associated Chambers of Commerce and Industry of India (ASSOCHAM) has projected that the market size of herbal industry which is currently estimated at Rs. 7,500 crores (Rs. 75 billion) will double to levels at Rs.15,000 crore by 2015 since this industry would be growing at a compounded annual growth rate of over 20% hence forth. In a study brought out by ASSOCHAM on Herbal Industry and Global Market 2015, it is pointed out that India's rich resource of medicinal plants and traditional treasure of knowledge in this area, its share at present is considered very meager. A quick estimate of the potential reveals that India can generate raw stock of around Rs. 300 billion and easily achieve around Rs.150 billion value added products. Thus, India is hardly able to exploit less than 50% of its potential. Interestingly both raw materials (herbs) and herbal products have ready market globally.

CONCLUSION:

Herbs are staging a comeback and in the present day's herbal products represent safety and security as compare to synthetic drug which leads toward research in herbal medicines. The traditional knowledge may play important role if a holistic approaches, and involvement and participation of tribes for documentation, preservation and use for the benefit of humankind, before it is lost forever.

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