

Role of Medicinal Plant in Human Health Disease

Amit Kumar Garg, Mohammed Faheem*, Sumer Singh

Department of Biotechnology, Singhania University, India

ABSTRACT

Medicinal plants have been used in healthcare since time immemorial. Medicinal plants play vital roles in disease prevention and their promotion and use fit into all existing prevention strategies. The researches and utilization of herbal medicine in the treatment of diseases increases every day. Medicinal plants provide major source of molecules with medicinal properties due to presence of natural compounds. Medicinal plants are useful for curing human diseases and play an important role in healing due to presence of phyto chemical constituents. The natural and unique medicinal plants are used for curing various diseases/ailments and income generation. Ayurveda and other Indian literature have mentioned the use of plants in treatment of various human ailments. Medicinal plants are important source to combat the serious diseases in all over the world. The present study focuses on the knowledge on medicinal uses of plants and the scientific investigation to confirm their medicinal values and the role, contributions and usefulness of medicinal plants in tackling the diseases of public health importance.

Key words: *Disease; Medicinal plants; Healthcare*

Introduction

Medicinal plants are considered as rich resources of ingredients which can be used in drug development pharmacopoeial, non-pharmacopoeial or synthetic drugs. A part from that, these plants play a critical role in the development of human cultures around the whole world. Plant is an important source of medicine and plays a key role in world health [1]. Medicinal herbs or plants have been known to be an important potential source of therapeutics or curative aids. The use of medicinal plants has attained a commanding role in health system all over the world. This involves the use of medicinal plants not only for the treatment of diseases but also as potential material for maintaining good health and conditions. Many countries in the world, that is, two-third of the world's population depends on herbal medicine for primary health care. The reasons for this is because of their better cultural acceptability, better compatibility and adaptability with the human body and pose lesser side effects. Some of the drugs believed to be obtained from plants are aspirin, atropine, artemisinin, colchicine, digoxin, ephedrine, morphine, physostigmine, pilocarpine, quinine, quinidine, reserpine, taxol, tubocurarine, vincristine and vinblastine.

Discussion

Herbal medicines proved to be the major remedy in traditional system of medicine. About 90% of the herbs and medicinal plants in India are collected from the forest. During 1950-1970, approximately 100 plants based new drugs were introduced in the USA drug market including deserpidine, reseinnamine and vincristine which are derived from higher plants. Medicinal plants have provided mankind a large variety of potent drugs to alleviate or eradicate infections and suffering from diseases in spite of advancement in synthetic drugs, some of the plant-derived drugs still retained their importance and relevance.

The use of plant-based drugs all over world is increasing [2]. Through recent researches on herbal plants or medicine, there have been great developments in the pharmacological evaluation of various plants used in traditional systems of medicine. Medicinal plants contain a wide variety of secondary metabolites or compounds such as tannins terpenoids, alkaloids, flavonoids that dictates the therapeutic potency of the plants most especially the antimicrobial activities [3].

The introduction of plant derived drugs in modern medicine has been linked to the uses of plant derived materials as an indigenous cure in traditional system of medicine [4]. Some of the plants have been found to possess significant antibacterial, antifungal, anticancer, antidiuretic, anti-inflammatory and anti-diabetic properties [5,6-9]. Plant derived drugs are used to cure mental illness, skin diseases, tuberculosis, diabetes, jaundice, hypertension and cancer. The use of traditional medicine and medicinal plants in most developing countries, as a normative basis for the maintenance of good health, has been widely observed. Oral diseases are major health problems with dental caries and periodontal diseases among the most prevalent, preventable global infectious diseases. Oral health influences the general quality of life and poor oral health is linked to chronic conditions and systemic diseases. In developing countries all over the world, large numbers of people die daily of preventable or curable diseases because of the lack of even simple health care. Diseases in these countries are often associated with malnutrition. The developing world is not a homogenous entity, but is made up of a variety of widely differing countries and areas which are at different stages of development.

The importance of plants in traditional medicine and as raw materials in pharmaceutical industries cannot therefore be overemphasized. The use of herbs to treat diseases is almost universal among non-industrialized societies. Many of the pharmaceuticals currently available to physicians have a long history of use as herbal remedies, including opium, aspirin, digitals and quinine. The use of medicinal plants is increasing worldwide, in view of the tremendous expansion of traditional medicine and a growing interest in herbal treatments. Plants are used in medicine to maintain and augment health-physically, mentally and spiritually as well as to treat specific conditions and ailments. In industrialized countries, adaptation of traditional medicines is termed “complimentary” or “alternative” medicine. Traditional medicine has maintained its popularity in all regions or the developing world and its use is rapidly spreading in industrialized countries.

Chemically prepared drugs may act quickly, but they have side effects which affect human body negatively in the long run, whereas, medicinal plants work in an integrated or pro-biotic with little or no adverse effects on the body [10]. The development of human culture, the use of medicinal plants has had magical-religious significance and different points of view regarding the concepts of health and disease which existed within each culture. For the past 3000 years, a large number of plants are used in health care practices, such as in Traditional Medicine in China, India and Africa, most of which contains therapeutic values which has been ascertained as such by Western standards. World Health Organization (WHO) reported that 80% of the earth’s population rely on traditional medicine for their primary health care needs, and most of this therapy involves the use of plant extracts and their active components [11] (Table 1).

Table 1: List of some plants which are most commonly used in herbal drugs

Plants Name	Plants Parts use in Disease
<i>Abutilon indicum</i> (Kanghi)	Seeds are used as laxative and in piles and leaves are locally applied on ulcer and boils.
<i>Acacia catechu</i> (Khair)	The bark of the tree is used in chronic diarrhoea.
<i>Acacia nilotica</i> (Babul)	The twig of the plant is used as natural tooth brush. The extract of fresh bark is used as tonic.
<i>Adhatoda vasica</i> (Vasaka)	The decoctions of leaves are given to cure asthma and other bronchial troubles.
<i>Aloe vera</i> (Gwarpatha)	The peelings of the leaves are used in skin burn and gel is given orally in ulcers. The fleshy part is also used in facial creams.
<i>Andrographis paniculata</i> (Kalmegh)	The plant is used for malarial fever and as liver tonic.
<i>Anisomelos indica</i> (Bhandari)	Leaves used in cough and cold.
<i>Anogeissus latifolia</i> (Dhawra)	Leaves are used in diarrhoea. Gum is used as tonic.
<i>Argemone mexicana</i> (Pili Katari)	The extract is used in various skin diseases. The latex is applied in eyes in case of conjunctivitis.
<i>Azadirachta indica</i> (Neem)	Seed oil is used in skin diseases and in lice. Bark is useful in malarial fever. Tender twigs are used as tooth brush.
<i>Boerhaavia diffusa</i> (Punarnava)	Plant used in jaundice, urinary troubles and in skin diseases.
<i>Catharanthus roseus</i> (Sadabahar)	The leaves and white flowers are used to reduce sugar level.
<i>Chlorophytum</i> spp. (Safed Musli)	The roots of the plant are used for general weakness, as tonic and aphrodisiac.
<i>Curculigo orchoides</i> (Kali Musli)	Roots are used as tonic and aphrodisiac; in leucorrhoea and menstrual irregularities.
<i>Curcuma caesia</i> (Kali Haldi)	Rhizomes are used in sprains, bruises and internal injuries.
<i>Cyperus scariosus</i> (Nagarmotha)	The tubers are used in urinary and heart troubles.
<i>Datura metal</i> (Dhatura)	Smoke of seeds inhaled in bronchial troubles.
<i>Gymnema sylvestre</i> (Gurmar)	The leaves of the plant are used in diabetics.
<i>Ocimum sanctum</i> (Tulsi)	The leaves are used to cure cough and cold and also to cure boils and ulcers.
<i>Phyllanthus amarus</i> (Bhuiamla)	It is a common household remedy for the treatment of Jaundice.
<i>Solanum nigrum</i> (Makoy)	The leaves are used in skin diseases and jaundice.
<i>Syzygium cumini</i> (Jamun)	Seed-powder is useful in diarrhoea, dysentery and diabetics.
<i>Tylophora indica</i> (Antamool)	The leaves are taken orally in asthma.
<i>Urginea indica</i> (Jangli pyaj)	The juice of the bulb is used in respiratory disorders.
<i>Vitex negundo</i> (Nirgundi)	The extract of the leaves is used in body pain and in skin diseases.

Conclusion

Plants have provided humans with many of their essential needs, including life-saving pharmaceutical agents. However, medicinal plants are threatened as a result of human impact and uncontrolled wild collection, it is therefore recommended that deliberate efforts towards domestication and cultivation are essential for continuous supply of these plant species. Presently many countries face large increases in the number of people suffering from diseases like diabetes, diarrhoea, cancer, rheumatism, inflammation, jaundice, hepatic obstruction, pain, cold, cough, etc. remedies from medicinal plants are used with success to treat the disease. In India, Uttarakhand has diversity of aromatic and medicinal plants. These plants may be used as a huge amount of raw material for pharmaceutical industries for manufacturing the medicines. In addition to the requirement for conservation of medicinal plants it has also become essential to protect and patent the traditional knowledge.

References

1. Sandberg F, Corrigan D. Natural remedies: Their origins and uses. Abingdon: Taylor and Francis. 2001.
2. Bhat KKP. Medicinal plant information databases. In: Non-Wood Forest Products. Medicinal Plants for Conservation and Health Care, Rome: Food and Agriculture Organization. 1995.
3. Evans WC, Trease GE. Trease and Evans Pharmacognosy. 6th edition, China: WB Saunders. 2002.
4. Igoli JO, Ogaji OG, Tor-Anyiin TA, Igoli NP. Traditional medicine practice amongst the Igede People of Nigeria. Part II. Afr J Trad CAM. 2003, 10(4): 1-10.
5. Sule WF, Okonko IO, Joseph TA, Ojezele MO, Nwanze JC, et al. In-vitro antifungal activity of *Senna alata* L. crude leaf extract. Res J Biol Sci. 2010, 5(3): 275-284.
6. Timothy SY, Lamu FW, Rhoda AS. Acute toxicity, phytochemistry and antibacterial activity of aqueous and ethanolic leaf extracts of *Cassia alata* L. Int Res J Pharma. 2012, 3(6): 73-76.
7. Oladeji SO. Thin-layer chromatographic analysis of flavonoids and total phenolics in methanolic and ethanolic extracts of *Senna alata* (L.) Roxb. (Fabales: Fabaceae). Brazil J Biol Sci. 2016, 3: 221-225.
8. Adelowo FE, Oladeji SO. Spectrophotometric analysis of phenolic compounds in *Senna alata*. Am J Adv Sci Res. 2016, 3(2): 246-253.
9. Midawa SM. Cutaneous wound healing activity of the ethanolic extracts of the leaf of *Senna alata* L. (Fabaceae). J Biol Sci. 2010, 2: 63-68.
10. Idu M. The plant called medicine: The 104th inaugural lecture series of University of Benin City, Nigeria: Calameo. 2009.
11. Joshi B, Sah GP, Basnet BB, Bhatt MR, Sharma D, et al. Phytochemical extraction and antimicrobial properties of different medicinal plants: *Ocimum sanctum* (Tulsi), *Eugenia caryophyllata* (Clove), *Achyranthes bidentata* (Datiwan) and *Azadirachta indica* (Neem). J Microbiol Antimicrob. 2011, 3: 1-7.