Modern Approaches to Herbal Medicine

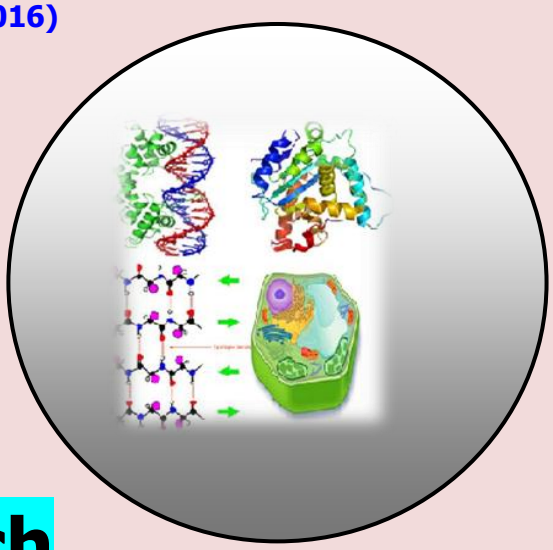
By

Bineeta Yadav

ISSN 2319-3077 Online/Electronic
ISSN 0970-4973 Print

UGC Approved Journal No. 62923
MCI Validated Journal
Index Copernicus International Value
IC Value of Journal 82.43 Poland, Europe (2016)
Journal Impact Factor: 4.275
Global Impact factor of Journal: 0.876
Scientific Journals Impact Factor: 3.285
InfoBase Impact Factor: 3.66

J. Biol. Chem. Research
Volume 35 (2) 2018 Pages No. 1040-1043



Journal of Biological and Chemical Research

An International Peer Reviewed / Referred Journal of Life Sciences and Chemistry

Indexed, Abstracted and Cited in various International and National Scientific Databases

Published by Society for Advancement of Sciences®

J. Biol. Chem. Research. Vol. 35, No. 2: 1040-1043, 2018
(An International Peer Reviewed / Refereed Journal of Life Sciences and Chemistry)
Ms 36/01/89/2019

ISSN 2319-3077 (Online/Electronic)
ISSN 0970-4973 (Print)

Dr. Bineeta Yadav
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RESEARCH PAPER

Received: 22/11/2018 **Revised: 21/12/2018** **Accepted: 22/12/2018**

Modern Approaches to Herbal Medicine

Bineeta Yadav
Department of Chemistry, DAV PG College, Lucknow, U.P., India

ABSTRACT

Search for drugs to improve the quality of life and correct diseases has been a part of human life right from beginnings. Ayurveda originated from time back between 6 to 8 BC in India. There are many texts available which describes in detail various methods of diagnosis and their mode of treatment. Most of the material used in such preparation is of compound herbal origins which continue to occupy an important position in present day. A large number of population in the country use herbal drugs for most of their therapeutic needs; there is a sharp resurgence of interest in herbal drugs in west with Germany as leader followed by France, Britain, Italy etc. in view of the side effects shown by many of the modern drugs and especially to meet therapeutic needs which still exists with modern drugs and for which herbal drugs based in on Traditional systems of medicine have some special relevance, the lead for discovery and development of many of the modern drugs.
Keywords: Ayurveda, Papaver somniferum, Curcuma longa, Rauwolfia serpentina, Taxus brevifolius.

INTRODUCTION

Herbal medicines involve the integration of several therapeutic experiences and practices of indigenous systems of medicine. According to World Health Organization, 60% of the world's population depends on traditional medicine and 80% of the population in developing countries depends almost entirely on traditional medicine practices and herbal medicines for their primary health care needs. Herbal medicine, also called botanical medicine or phytomedicine, refers to the use of plant parts such as seeds, berries, roots, leaves, bark or flower for medicinal and therapeutic purposes [Bent, 2008 and Falodun, 2010]. A number of scientific investigations have highlighted the importance and the contribution of many plant families i.e. Asteraceae, Liliaceae, Apocynaceae, Solanaceae, Caesalpinaceae, Rutaceae, Piperaceae, Sapotaceae used as medicinal plants. Herbal plants play an important role in preventing and treating of human diseases. Plants have been associated with the development of human civilization around the whole world. However, plants are considered

as rich sources of phytochemical ingredients which enable to have medicinal value. Medicinal plants are a potential source for the development of new herbal drugs. In the 21st century, the pharmacological effects of medicinal plants have been considered as a promising future drug/medicine for the management of health care.

MATERIAL AND METHODS

Plants have several pharmacological roles such as antioxidant, antiviral, anticancer, antimicrobial, antifungal and antiparasitic. Plants have free radical scavenging molecules, including flavonoids, phynolics, anthocynins and vitamins, which show antioxidant like activity [Chopra and Doiphode, 2002]. Prior to the 19th century, plant medicines were administered in their crude form as infusions (herbal teas), tinctures (alcoholic extracts), decoctions (boiled extracts of roots or stem bark), and syrup or applied externally as ointments (poultices, balms and essential oils) and herbal baths [Griggs, 1981, Gurib-Fakim, 2006]. However, from the late 19th century onwards, scientists began the isolation, purification and identification of bioactive principles from medicinal plants. For instance, morphine isolated from opium poppy (*Papaver somniferum*) is a powerful pain reliever and narcotic; quinine isolated from Cinchona plant species is an effective antimalarial drug; taxol (isolated from *Taxus brevifolius*) and vincristine (isolated from *Catharanthus rosesus*) are highly effective against certain cancers. Also, serpentine (isolated from the root of the Indian plant *Rauwolfia serpentia*) is used for the treatment of hypertension [5-8]. As a result of increasing demand for herbal healthcare products and application of traditional medicine, also referred to as complementary and alternative medicine systems, in both developing and developed countries, there are increasing concerns about the safety, standardization, efficacy, quality, availability and preservation of herbal products by policy-makers, health professionals and the general public. The problems associated with regulation, standardization and quality assurance in the manufacture of herbal medicines are prevalent both in developed and developing countries of the world [Falodun, 2010, Rotblatt, 1999, Sane, 2002]. *Curcuma longa* (haldi) and its active chemical constituent's curcumine are commonly used in India as a mild antiseptic for wound healing and as an anti-inflammatory agent. Piperine the bioactive principal of *Piper species.* It increases the bioavailability particularly of antitubercular drugs*. Withania somnifera* which is being used as an adoptogen, *Boswelliya serrata* (salaki) is being used in rheumatic and autoimmune diseases, *Commiphora mukul* (guggulu), the resin of which is being used for centuries in obesity, *Azadiracha indica* (neem) is the mother of skin allergy, eczema bioinsecticide, immunity, fertility control, *Picrorrhiza kurroa* (kutki) as an heptotopratective, *Centilla asiatica* (brahmi) as a memory enhancer and learning disorder, *Mocona pouriens* (atmagupta) in parkinsonism and aging, Kerala, Jammun, Begun and *Pterocarpum marsupam* all are used in controlling diabeties. *Terminalia arjuna* (arjun bark) as a cardionic, aleo vera (ghratkumari) in ulcer, aging and cosmetic, *Tinospora cordifolia* (guduchi) as an immunomodulator and cancer chemotherapy. Codeine, morphin, isolated from Opium the latex of *Papaver somniferum* used by ancient Sumarians, Egyptaians and Greeks for the treatment of headaches, arthritis and inducing sleep. Atropine, hyoscyamine isolated from *Atropa belladona*, *Hyascyamus niger* etc., were important drugs in Babylonium folklore. Ephedrine, Crude drug (astringent yellow) isolated from *Ephedra sinica* had been used by Chinese for respiratory ailments since 2700 BC.

Quinine derived from Cinchona sp were used by Peruvian Indians for the treatment of fevers. Emetine Brazilian Indians and several others South American tribes used root and rhizomes of Cephaelis sp to induce vomiting and cure dysentery. Use of Colchicum in the treatment of gout has been known in Europe since 78 AD. Digoxin derived from Digitalis leaves were being used in heart therapy in Europe during the 18th century. The story of *Rauwolfia serpentina* (sarpganda) used for blood pressure and mental disorders is very well known to us.

RESULT AND DISCUSSION

Herbal medicine is widely practiced in worldwide. For centuries, people have turned to natural remedies to cure common ailments such as colds, allergy, upset stomachs and toothaches and the trend is constantly increasing. Thus, there has been a shift in universal trend from synthetic to herbal medicines, which we can say 'Return to Nature' for the prevention of diseases and ailments. Nature has been a source of medicinal plants. Phytochemicals have been reduced the risk of many human diseases include cardiovascular disease, hepato-renal diseases, diabetes, cancers and neurodegenerative disorders. However, several herbal medicines are being derived directly or indirectly from plants that are considered as an important medicine currently in use for curing various human diseases [Modak et al., 2007, Shakya and Shukla, 2011]. In the next few decades, herbal medicine may become a new era of medical system for the management of human diseases. About 80% world populations rely on traditional medicine for primary health care. Over the past decade, there has been a resurgence of interest in the investigation of medicinal plant as a source of potential herbal medicine. There is a need to advance research for the development and characterization of new natural drugs with the aid of better screening methods from plants and other natural sources. As science advanced, it became possible to use AYUSH to solve the new challenges of modern healthcare system. In the present context the Ayurvedic system of medicine is widely accepted and practiced by peoples not only in India but also in the developed countries- such as Europe, USA, Japan, China, Canada etc. Plant based therapy are marked due to its low cost, easy availability based on generation to generation knowledge.

The executive board of WHO (World Health Organization) recently passed a resolution calling on countries

1) To promote the role of traditional practitioners in the health care systems of developing countries and,

2) To allocate more financial support for the development of traditional medical systems.

WHO also advocates utilizing those medicinal plants and remedies used by traditional practitioners to effectively treat their patients. Example of some of these plants are Ammi visnage, a Mediterranean plant, used to treat angina pectoris, *Cymbopogan proximus*, an Egyptian plant, used to remove urinary tract stones, the root of Combretum, used in Ghana to treat guinea-worm, bitter leaf, a Nigerian plant which kills mouth bacteria and *Desmodium adcendens, Thonningia sanguineaand Deinbollia pinnata* used in various combinations to treat bronchial asthma (Ozorio, 1979). Drugs of each and every traditional medicine, like Ayurveda, Unani and Siddha need to be tested and validated scientifically. Council for Scientific and Industrial Research (CSIR), New Delhi, is already involved in this field and validated about 350 formulations for different activities.

This is a welcome trend since it attempts to marry traditional practice with modern knowledge for the betterment of health (Gupta and Chitme, 2000). WHO has emphasized the need to ensure the quality control of herbs and herbal formulations by using modern techniques. Several countries have herbal pharmacopoeias and lay down monographs to maintain their quality. Ayurvedic Pharmacopoeia of India recommends basic quality parameters for 80 common herbal drugs (Dobriyal and Narayana, 1998).

ACKNOWLEDGEMENTS

The author is highly grateful to Professor J.P.N. Chansouria, Center of Experimental Medicine and Surgery, Professor V.B. Pandey, Professor V.P. Singh, Department of Medicinal Chemistry, Institute of Medical Sciences, BHU, for their valuable suggestions.

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Corresponding author: Dr. Bineeta Yadav, Associate Professor, Department of Chemistry, DAV PG College, Lucknow, U.P., India **Email: Yadav_bineeta@yahoo.com**

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