



Phytochemical Studies and Pharmacological Screening in Medical Analysis

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DESCRIPTION

Herbal medicines continue to grow in popularity as consumers adopt more natural approaches for staying healthy and these have been used since ancient times. In fact, every major culture had used herbalism as the method of healing at some time or the other. Since the last two decades, World Health Organization is encouraging the use of principal indigenous medicinal plants for treatment of different ailments in developing countries.

World Health Organization estimates that about 80% of population living in developing countries relies almost exclusively on traditional medicines for their primary health care needs. Since medicinal plants are the backbone of traditional medicine 3300 million people in the under developed countries utilize medicinal plants on a regular basis. This assumption does not include the developed countries where there has been a great fascination for herbal medicines and dietary food supplements in the last decade.

In recent years, although worldwide growth in usage of traditional systems of health care has been seen, in countries like India, China, Tibet and Brazil, the scenario has always been associated with these traditional systems of medicines. These countries still possess very rich biological as well as cultural diversity and traditional health care systems have been a deep influence in the current health care means in these nations.

Today these traditional systems are not only flourishing in their respective countries but also becoming immensely popular among other nations including the western world. Care systems have been practiced for many centuries, namely Ayurveda, dating back to more than 5000 years, Siddha, Unani and more recently Homeopathy. Apart from these systems, there has been a rich heritage of ethno botanical usage of herbs by various tribal communities in the country.

Only in the last few decades, a resurgence of interest in plants as sources of medicines and novel molecules for use in the elucidation of physiological/biological phenomena has been seen. There are number of reasons for this, firstly, there is a genuine expectation in developing countries that their health care problems can be solved through a sensible scientific exploitation of medicinal plants, some of which have been used for generations by local population. Secondly, there is the worldwide 'green' revolution which is reflected in the belief that herbal medicines are safer and less damaging to human body than synthetic drugs. Furthermore, it is the fact that many important drugs used today in modern medicine were derived from plants or lead molecules are of plant origin.

Plants have also yielded molecules which are extremely valuable tools in the characterization of enzymes and the classification of receptor systems eg. Morphine, physostigmine, muscarine, atropine, nicotine, tubocurarine etc. Some scientists thus expect that the plant kingdom holds the key to understand the complexity of human biochemistry/pathology and the cure of perplexing diseases of humans.

CONCLUSION

The initial optimism, engendered by the idea that a sophisticated understanding of receptor systems and of the biochemistry of disease would pave the way to predictable drug development, has not been realized, therefore, laboratories around the world are engaged in the screening of plants with therapeutic potential for biological activity. The isolated pure chemical from a plant is first studied extensively for its pure chemical structure and biological activity. Suppose the isolated component shows some useful activity, then one can design the synthesis of a series of analogous compounds, each differing from the other a little bit in its structure. By careful molecular manipulation, it is possible to bring out new drugs of real therapeutic merit.

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