

Message from The Vice Chancellor

Herbal research vis a vis Ayurvedic clinical research

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Since ages medicinal plants are the main source of several health care systems being practiced in various countries. Every country is having its own traditional system of medicine consisting of natural substances derived from vegetable, metallic, mineral and animal origin. After advent of modern medicine, role of these indigenous systems which were catering the entire health needs of their respective populations has been reduced to the primary health care level problems. Herbal drugs have immensely contributed to the armamentarium of modern medical practitioners which has renewed the interest of scientists for exploring the rich potentialities of herbs through modern scientific methods. World Health Organization (WHO) recommends the herbal/traditional remedies in national healthcare programmes in view of their low cost and better safety profiles along with people's faith in such remedies. In India, scientists prefer to put the herbal materia medica of Ayurveda on a modern scientific footing to ensure standard quality of drugs. Standardization of herbal research includes the identification of plants, good agricultural practices including cultivation, post-harvesting technology, storage precautions for raw material, manufacturing process with analytical profiles, shelf-life of products and pharmacopoeial standards of quality control. For identification apart from pharmacognostical and chemotaxonomic methods, Deoxyribo Nucleic Acid (DNA) fingerprinting is also being utilized. Quantitative fingerprint of major components would be desirable, which can be done by High Performance Thin Layer Chromatography (HPTLC) or Liquid Chromatography - Mass Spectrometry (LC-MS). The analysis for microbial contamination, pesticide residues and heavy metals for estimating with regards to their permissible levels are also been followed. After confirming all these aspects, the herb is subjected for evaluation of its activity through experimental pharmacology including toxicity studies. Once the herb is screened by these tests, it is evaluated for documentation of clinical pharmacological data followed by clinical studies (Phase - 1 to Phase - 3). Based on this approach thousands of medicinal plants have been screened and finally lead to successful development of a separate branch of medicine known as "Herbal Medicine".

On most of the occasions modern scientific screening methods of herbs have not adopted framework of Ayurvedic approach. Charaka suggests ten point examination for initiating the execution of therapeutics, i.e. *Kaarana* (cause - physician), *Karana* (instrument - drug), *Karyayoni* (source of action - *Dhatu Vaishamyata*), *Karya* (action), *Karyaphala* (fruits/results of action), *Anubandha* (longevity), *Desha* (land/patient), *Kaala* (time/seasons and state of the patient), *Pravritti* (initiation), and *Upaya* (means of action).

Charaka further explains ten-fold examination of drug i.e. *Prakriti* (nature), *Guna* (qualities), *Prabhava* (specific factor),

Jaataam (place of growth), *Ritu* (season for collection), *Grihitam* (mode of collection), *Nihitam* (methods of preservation), *Upaskritam* (method of processing), *Matra* (dosage) and *Yukti* (judgment about patient and vitiated *Doshas* or application of intelligence for evaluating vitiated *Doshas* and subsiding them).

Patient should be examined by tenfold examination with reference to *Prakriti* (constitution), *Vikriti* (morbidity), *Sara* (excellence of *Dhatu*), *Samhanana* (compactness of the body), *Pramana* (measurement of organs of the body), *Satmya* (homologation), *Satva* (psychic state), *Aharashakti* (power of intake and digestion of food), *Vyayamashakti* (power of performing physical actions) and *Vaya* (age).

Tenfold examination of the disease cannot be evaluated totally in animal experimental pharmacology and it is very difficult to evaluate the *Prakriti*, *Dosha* vitiated by chemical injury and psychic state of animals involved in the drug trial. Involvement of *Dosha*, *Dhatu*, *Mala*, *Agni* and *Srotas* which are considered as *Samprapti Ghatakas* (components of pathogenesis) cannot be explained for the induced state (*Agantuja Avastha*) in the animal. Even if the animals are exposed to etiological factors identified by Ayurvedic classics, animals cannot answer the questions for collecting the relevant information of *Samprapti Ghatakas*. Hence, the best way to produce evidence about Ayurvedic drug activities by way of clinical evaluation from Ayurvedic perspectives wherein one can incorporate all the modern parameters in clinical research. The methodologies being adopted in herbal research may help for evolving "scientific herbal medicine" but may not be possible to translate these findings into Ayurvedic human body which is embodiment of *Dosha*, *Dhatu*, *Mala*, *Agni*, *Srotas*, *Satva* and *Atma*.

Compound formulations designed by Agnivesha (Charaka Samhita) such as *Chyavanaprasha*, *Punarnavadi Mandura*, *Chitrakadi Vati*, *Navayasa Lauha*, *Pushyanuga Churna*, and *Talisaadi Churna*, etc. are still being prescribed by Ayurvedic practitioners and by this time millions of patients would have consumed them, but documentation of data about the activity of those formulations is lacking in terms of modern evaluation. It is a fact of facts that all the drugs reported in Ayurveda classics were evaluated only in human beings but not in animals. The need of the hour is to conduct evidence based clinical trials for the proper scientific validation. Globally there is a positive trend towards holistic health integrative sciences, system biology approaches in drug discovery and Ayurvedic doctrines will be of immense help for herbal research.

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