



Review Article

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Ayurvedic pharmacopeia if constructed as per Ayurvedic principles; An observational outlook

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ABSTRACT

Natural products derived from plant, animal and mineral origin, constitute the materia medica of Ayurveda. Ayurveda, science of life has its own principles and theories in relation to cure of a disease or at maintenance of health. Quality monographs on these natural products constructed based on the principles of Ayurveda, may really serve the purpose in this regard. An observational discussion on facts and future scenario on Ayurveda pharmacopeia has been discussed in this paper.

Keywords: Ayurveda, Principles, Monographs, Pharmacopeia.

INTRODUCTION

India has an ancient heritage of traditional medicine. There are different systems of medicine practiced in India like *Ayurveda*, *Siddha*, *Homeopathy*, *Yoga* etc which use natural products as their materia medica^[1]. The world health organization (WHO) estimates that about 80% of the population living in the developing countries rely almost exclusively on traditional medicine for their primary health care needs^[2]. Indian materia medica includes about 2000 drugs of natural origin almost all of which are derived from different traditional system and folklore practices^[3]. Out of these drugs derived from traditional system 400 are of mineral and animal origin while the rest are of vegetable origin.

Ayurveda is accepted to be the oldest treatise on medical system, which came into existence about 900 BC^[4]. *Ayurveda* literally means science of life. It is said to be an *Upaveda* of *Atharvaveda*; whereas *Charakasamhita* (1900 BC) is the first recorded treatise fully devoted to the concept of practice of *Ayurveda*. This records 341 plants and plant products^[5]. The next landmark of *Ayurvedic* literature was the *Sushruta samhita* (600 BC), which has special emphasis on surgery. It describes 395 medicinal plants, 57 drugs of animal origin, 64 minerals and metals as therapeutic agents. *Bhavamishra* has made a description of 470 medicinal plants in his treatise^[6].

Though prevention of disease and maintaining positive health is the main emblem of *Ayurveda*, gives equal importance for cure of diseases. It considers *Panchamahabhoota* as basic anatomical entity, whereas *tridosha* as physiological factors which reside inside this body. This classifies the whole human population into three major constitutions *kapha*, *pitta* and *vata*^[7]. *Ayurveda* is uniquely patient oriented, where the *Ayurvedic* physician diagnoses, treats and dispenses medicine to every individual patient. This important principle can form the basis for a form of personalized medicine with maximum therapeutic efficacy^[8]. Depending upon stages of a disease, season, age of a person, sex etc drug and its formulations will be designed.

For formulations and assessment of action of the drugs, theory of *Rasa-Guna-Veerya- Vipaka* was established with which it is more convenient for a physician to formulate the medicine according to need and not necessarily depend on pharmaceutical preparations. *Dravyaguna Vijnana* is the special branch of *Ayurveda* that elaborates the qualities and biological actions pertaining to food and medicine^[9]. *Charaka samhita* explains that, real expert on medicinal plants is one who besides their nomenclature and identification is also well versed in their applications ie their qualities, actions and uses^[10]. Designing of an ideal drug involves several sophisticated factors. These are *gunakarma jnana* (knowledge of properties and actions), *yoga jnana* (knowledge of formulations), *kalpana jnana* (knowledge of preparations) and *prayoga jnana* (knowledge of preparations)^[11].

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The nomenclature of *Ayurveda* is not the binomial system that has been adopted by modern botany. In *Ayurveda*, there are many names for a single entity and a single name is used to denote many plants^[12]. Naming system was primarily designed to help a physician select a plant for medicinal purpose rather than establish the taxonomical identity of the plant. These names provide a comprehensive picture of the various aspects of the plant, including morphology, ecological factors, therapeutic parts, seasonal characters, qualities, biological actions and uses. Thus synonyms in total give complete profile of a drug^[13].

Herbal drug standardization, quality control, pharmacopeia:

Global resurgence of interest in herbal drugs has led to the need of their mass production which perhaps was not even contemplated by the traditional *vaidyas* who prepared and dispensed medicine on a personal and individual basis. Large scale production of medicinal plant products necessitated the availability of standards to ensure their quality, efficacy and safety^[14]. *Ayurvedic* medicines many times contain multiple herbs than single. Sometimes they may include mineral and animal products. In order to provide a regulation and quality assurance of the natural products different pharmacopeia's and monographs have been published. The Government established 1969 a central council for research in Indian Medicine and *Homeopathy* (CCRIMH) to develop scientific research in different system of medicine viz. *Unani*, *Ayurveda*, *Siddha*, *Yoga*, *Naturopathy* and *Homeopathy*. At 1978 it was split into four separate research councils. Later on in 1995 department of Indian system of Medicine and Homeopathy (ISM &H) has been made by government of India controlling regulation relating to TSM^[15]. The manufacture, quality control and sale of all these traditional medicine are regulated through drugs and cosmetic act^[16]. Different pharmacopeia committees have been made and ISM &H council has established separate pharmacopeal Laboratory for Indian Medicine (PLIM) and Homeopathic pharmacopeal laboratory (HPL) at Gaziabad UP, India. In 1989 *Ayurvedic pharmacopeia* of India (API) has been published by ministry of health and family welfare, Government of India. Part I of API consists of Vol-I, II, III, IV and V comprising respectively 80, 78, 100, 68 and 92 monographs prescribing standards for *Ayurvedic* single drugs of plant origin^[15].

Meanwhile it is a known fact that herbal drug standardization is not new to *Ayurveda*. *Acharya Charaka* mentioned about the same in the treatise *Charaka Samhita Vimana sthana* 8/87, under the heading drug evaluation. *Idmevam prakriti* (Nature of a plant), *Evam guna* (chemical composition), *asmin deshe jata* (habitat), *evam grahitam* (useful part/parts), *evam nihitam* (sustainable harvesting), *upaskritam* (preservation/processing), *anaya cha matraya* (dose), *asmin vyadhe* (therapeutic indication), *evam vidhsya purushasya* (personality in which it is to be administered), *etavantam doshamapakarshashayati upashamayati* (action on *dosha*) are the factors related to a drug well thought-out prior to clinical trial^[10]. Using this protocol one can prepare a standard monogram which is most applicable for the practice of *Ayurveda*, simultaneously this forms a blue print of said drug.

Observational facts:

Dravya samgrahana (instruction for collection) is a vast topic explained in *Ayurveda*^[17]. Plants or their parts are collected during seasons that they grow to maturity. Instructions for collection are also found for plants with specific *virya/karma* as for example, for the purpose of emesis and purgation the drug should be collected in late winter. Drugs need to be collected in their fresh state (eg. *Guduchi*, *vasa*, *satavari* etc.) and those are to be used after a year (*vidanga*, *guggulu*, *dhanayaka*, *maricha*) come with separate instructions^[18]. *Pryaojya anga* (useful part) of a plant is an important matter concerned with dosage, adjuvants, dietary restrictions, time of consumption. Introducing a right drug at right stage of a disease is named as

amshamsha kalpana^[19]. Information on how to select drugs on the basis of individual constitution, disease type and stage of disease is provided along with precise dosage for every drug. Also included are details about contraindications for several drugs. For instance drugs like garlic should not be given in *pitta prakriti*, hot season and certain adjuvants like alcohol are indicated during its prescription^[20]. When one uses plants like *tuvaraka* and *arushkara*, hot water should not be taken along with them^[22].

Other interesting information includes substitutes (*pratinidhi dravyas*) and their rationality. Classical categorization of drugs under *Dashemani* and *Gana* are an indication to utilize group of drugs having similar activity and in the non-availability of any one drug *Acharyas* have given guidelines to use their types or substitutes. *Musta* for *ativisha*, *Gambhari* for *draksha*, *vidari* for *jivaka* are some suggested classical substitutes^[22,23].

CONCLUSION

"*Nahi jnanavayen kritsne jneye jnanamutpadyate*" partial knowledge about any science will not serve the purpose. Globally the prospects of traditional medicine have begun to look brighter than they did a few decades ago, and people are particular towards prevention than cure, positive health than treatment. *Ayurveda* has its holistic approach in improving quality of life. Theoretical foundations, world views, methods, logic, principles and concepts are quite distinct from other western knowledge systems. Quality pharmacopeia built not diluting quality principles of *Ayurveda* will help this traditional knowledge system as an eternal science.

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