



## Concept of Drug Research-An Ayurvedic Perspective

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### ABSTRACT

The use and demand of Ayurvedic medicine is increasing day by day. Hence, it is very much essential to maintain the purity, quality and efficacy of Ayurvedic medicine upto to the mark otherwise it will not produce the desirable therapeutic effect and finally defame the Ayurveda. Our Acharyas advised to invent or add new drugs or rediscover new properties of old drugs mentioned in the Samhitas as per the principle of the Ayurveda. This article presents a review of ancient methodology to discover new drugs and new properties of old drugs. The methodology consists of the knowledge of Nama rupa vinyan, Guna karma vinyan, Prayog vinyan, and Manaki karan of the drug .

### KEYWORDS

Ayurveda, Namarupa vijnana, Gunakarma vijnana, Prayog vijnana, Manaki karan

### INTRODUCTION:

Drug is the most important component of therapeutics as it is responsible for the equilibrium of the body system. It has been considered as the tool in therapeutics because physician becomes handicapped without a drug/medicine. To treat the emerging life threatening diseases like Dengue, Chicken guinea, Swine flu, SARS etc. potent herbal drugs are highly required. Multidrug therapy for a single disease or use of single drug in many ailments is based not only on theory but also on observation, experiment and experience.

Ayurveda, the ancient wisdom of life science has unique principle in terms of diagnosis and treatment of ailments as well as preventive measures, healthy dietary habits etc. Charak Samhita mentioned that drugs are obtained from three sources- Audbhida (drug of plant origin), Jangama (drug of animal origin), Bhauma (drug of mineral origin)<sup>1</sup>. But all these drugs are advised to use rationally after proper diagnosis of the disease. In the context of proper planning of drug use, Acharya Charaka<sup>2</sup> mentioned as

योगादपि विषं तीक्ष्णमुत्तमं भेषजं भवेत् ।

भेषजं चापि दुर्युक्तं तीक्ष्णं सम्पद्यते विषम् (ch.su.1/126)

A potent poison may become the best medicine if used judiciously. On the contrary even the best medicine becomes a potent poison if used incorrectly. Hence, to become a successful physician, knowledge of drug is highly essential.

Pandit Narahari (author of Raja Nighantu) quoted in his work that the physician who is entering in to the practice without the knowledge of Nighantu is equally criticized by the society like a scholar without knowledge of grammar and a warrior without the practice of weapon.<sup>3</sup>

निघण्टुना विना वैद्यो विद्वान् व्याकरणं विना ।  
अनभ्यासेन धानुष्कस्त्रयो हास्यस्य भाजनम् ॥९॥

In Ayurvedic classics, vast number of single drug and compound formulations are mentioned. Still our saints advised us to invent /add new drugs or rediscover new properties of old drugs by the guidelines of Ayurveda principle. There are several references available in our ancient literature regarding the drug research.

### AIMS AND OBJECTIVES:

The qualities of ideal drugs mentioned by our Acharyas should be adopted as the sole objectives of the drug research<sup>4</sup>.

- Bahuta-Abundantly available.
- Yogyatvam-Must be eligible for medicament.
- Anekavidha kalpana- Acceptability for various pharmaceutical forms.
- Sampat-It should possess all properties.

Drug research methodology is not mentioned step by step at one place in any Ayurvedic classical literature. It is found in scattered manner in different Samhitas and other classical texts. If all concerned literature of drug research will be compiled in one place, then it will become a very good tool for drug evaluation for future researchers. In view of this fact, an attempt has been made to compile the classical methods of drug research in a systematic manner.

### METHODOLOGY:

Followings are the steps for evaluation of drugs as per classical methods.

### NAMA-RUPA VIJNANA (Identification of Drugs):

Identification of the drug is the first step in the drug research. Nomenclature and morphological characters play a major role in the process of drug identification. Acharya

Charaka has clearly mentioned that a wise scholar is one who knows about the nama (names), rupa (morphological characters) and guna (properties) of the drugs. He has also stressed to contact the persons who are very close to nature, forest tribes, saints, shepherds etc. to obtain the knowledge about drugs<sup>5,6</sup>. Pandit Narahari, the author of Raj Nighantu mentioned seven methods for nomenclature of the drugs. They are as under<sup>7</sup>

1. Rudhitah-Tradition/uses
2. Prabhavat-Specific power/properties.
3. Deshokta-place of origin.
4. Lanchhana-special morphological properties.
5. Upama-Simile
6. Veerya-Potency
7. Itarahwaya-Miscellaneous.

Many modern Ayurvedic scholars advocated the nomenclature of the plants on the basis of parts used, historical importance, weight, dose, properties, pharmacological actions etc.<sup>8</sup>

#### **GUNA –KARMA VIJNANA (Pharmacology):**

After the identification of drug, assessment of rasa panchaka is highly essential. Rasa, Guna, Veerya, Vipaka and Prabhava (collectively known as Rasapanchaka) are the important properties of a drug as per Ayurveda. Followings are the parameters for the assessment of Rasapanchaka.

**Rasa (taste of drug)-** Rasa of the drug is the gustatory appeal. Nipata method<sup>9</sup> (direct contact of drug with the tongue) is the criteria to assess the rasa of a known or unknown drug. This study should be carried out on healthy volunteers.

**Guna properties-Guna** can be assessed on the basis of rasa, bhautik composition of dravya and on the basis of clinical trials.

**Vipaka-It** is the final biotransformation of rasa through action of jatarangi. It can be assessed by karmanistaya (inferred by the action observed)<sup>9</sup>. In some cases determination of vipaka also inferred by the help of rasa and guna of the drug.

**Veerya-Veerya** is the potency of the drug which may be assessed as soon as it comes in contact with the tongue and it is also inferred by the pharmacological action as long as it remains in the body<sup>9</sup>.

**Prabhava-It** is the specific nature of the drug.

Acharya Charaka explained that a drug may act either by means of Dravya prabhav (natural property) or by means of guna prabhav (individual characteristic) and sometimes both may play role in drug action. Charaka explained different modalities of drug action in the following way<sup>10</sup>.

यत् क्वर्बन्ति, तत् कर्म; येन क्वर्बन्ति तद्वीर्यं; यत्र क्वर्बन्ति, तदधिकरणं;

यदा क्वर्बन्ति, स कालः; यथा क्वर्बन्ति, स उपायः; यत् साध्यन्ति, तत् फलम्॥१३॥

- **Karma-(Action or effect of drug)**-It can be determined on the basis of its effect on dosha, dhatu, mala, agni, srotas etc.
- **Veerya (potency of the drug)**-The drug acts by virtue of its potency. Potency of the drug implies all the qualities of drug by which they act.
- **Adhikaran (site of drug action)**-The site of action involves the action of drug on a particular stage of pathogenesis (samprapti). The main site of disease should be the main site of action of drug used to specify the disease.
- **Kala (time of drug administration)**-To get the best efficacy of the drug, the time of administration of drug is very important. By keeping this factor in mind, Acharya have specified particular time of administration of drug for particular disease.<sup>11,12,13</sup>
- **Upaya (mode of action)**-The mode of action of drug implies how the drug acts in the body. Acharya have de-

scribed that the drug after being well administered becomes an equalizer of increased and diminished elements at the same time. It brings down the excessive elements and augments the deficient one

- **Phalam-(result of the therapy)**-The aim of the treatment is to cure the disease and to restore the health. Proper selection and administration of drugs bring desired effects.

#### **PRAYOG VIJNANA (Pharmacotherapeutics):**

Experimental and clinical trial should be done to find out the action, indication, dosage and toxic effect of a particular drug. In ancient days, use of toxic drug for homicidal purpose was a common practice. In view of this fact, Acharyas have advised to use a portion drug to lower the animals and birds like deer, crow, cuckoo etc. to judge the toxicity of the same<sup>14</sup>. This type of experimental model was designed for toxicity study.

#### **MANAKI KARANA (Standardization):**

The problem of standardization of Ayurveda drugs is an acute one. For researchers it requires sincere and constant team work for years together. Acharya Charaka has beautifully described it in Viman Sthana 8/87 of Charaka Samhita.

तस्यापीयं परीक्षा- इदमेवम्प्रकृत्यैवङ्गुणमेवम्प्रभावमस्मिन् देशे जातमस्मिन्नृतावेवं गृहीतमेवं

निहितमेवमुपस्कृतमनया च मात्रया युक्तमस्मिन् व्याधावेवविधस्य पुरुषस्यैवतावन्तं

दोषमपकर्षत्युपशमयति वा, यदन्यदपि चैवंविधं भेषजं भवेत्तच्चाज्ञेन विशेषेण युक्तमिति॥८७॥

1. **Evam prakriti (Nature of the drug)**-The first step of drug research is to know the nature or habit of the drug which is differ according to the proto element constituent of drugs and it depends on the habitat of drug.
2. **Evam gunam (Qualities of the drug)**-The pharmacodynamics and pharmacokinetics of a drug depends on its properties. The physical and chemical characters of the drugs are to be recorded carefully which helps in identification and in explaining the pharmacological action and therapeutics.
3. **Evam Prabhavam (specific action of the drug)**-The specific action is nothing but the inherent active principle of the drug.
4. **Asmin deshejatam (place of growth)**- The properties of the drug depends on their place of growth. The growth and development of drugs are much influenced by various ecological factors like soil, air, temperature, rainfall, sunlight and altitude. Hence the study of ecological factors have an important role to play in selection of drug. Acharya Sushruta advised to examine the land (place of collection) for collection of medicinal plants. The land should be free from gravel, stone, unevenness, ant-hills, away from cremation ground, temples, sandy soil, non- fertile and non-fragile. It should be nearer to water source, smooth, firm/compact, plain/flat surface, black, golden or red in colour.<sup>15</sup>
5. **Asmin rutaujatam (season of collection)**-Particular parts of the plant should be collected in the appropriate season when they have attained their maturity in terms of taste, potency and smell. The colour, odour, taste, texture, and specific action should not be affected by time, sunlight, fire, water and parasites.<sup>17</sup>
6. **Evam grihitam (mode of collection)**- The person who wish to collect the plants should wear white cloth, must be neat and clean and follow the ritual procedures and perform prayer prior to collection and collect the plants facing towards East or North.<sup>16</sup>
7. **Evam nihitam (method of preservation)**-The collected raw materials should be preserve in suitable container and kept in well equipped store house facing eastward or northward. The store house should be suitable for all seasons, devoid of wind but well ventilated, daily ritualized with offering flowers and it should be unapproachable for fire, water, smoke, dust, rats and quadrupeds.<sup>17</sup>
8. **Evam upaskrutam (method of processing)**-Many

pharmaceutical preparations of drugs can be made with a view to make the drug more potent, preserved, palatable and clinically effective. The selection of preparation will be made by proper planning (Yukti) according to the need. Swaras (juice), Kalka(paste), Kwath (decoction), Hima (cold infusion) and Phanta (hot infusion) are the basic dosage form of Ayurveda medicine.<sup>18</sup>

9. **Anaya cha matrayayuktam (Dosage in which it is employed)**-Sharangdhar has clearly stated that there is no specific dose for every individual. To fix/finalize the dose, kala (time), agni (digestive fire), vaya (age), bala (strength), prakruti (constitution), dosha and desha (region) should be considered. Then only the dose will be finalized.<sup>19</sup>The dosage should be regulated so that the drug may produce desirable effect without any harm to the body.
10. **Tavantam dosham apakarshtyupashamayati (Quantum of Dosha eliminated or alleviated)**-This is the most important method of assessment of a drug or its medicinal utility. To observe the elimination or alleviation of doshas, clinical research should be designed in different ways. And by these ways action of drug on a particular dosha or doshas along with dhatu, mala, srotas should be revealed.

#### DISCUSSION AND CONCLUSION:

Research on drug have opened new sources of remedies. Ayurveda has got vast scope in the field of drug research because of its unique way of drug evaluation. If Ayurvedic drugs (single drug/compound medicine/known or unknown drugs) will be reassessed in the principle of Ayurveda as well as in the light of modern drug evaluation method, then it will create a new faith in the potency of Ayurvedic medicines at the global level.

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