

Dravya pariksha vidhi w. s. r. to anukta dravya

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ABSTRACT

This article deals with the concept of Anukta Dravya and 'Dravya Pariksha Vidhi'. Dravya Pariksha Vidhi plays an important role in the field of Dravyaguna. It is basically the study methodology described regarding a new drug. An attempt is made to understand the each point mentioned under Dravya Pariksha Vidhi thoroughly and understand their importance in case of drug study. The biggest advantage of applying this method is that, we could find Ayurvedic attributes like Rasapanchaka, gunas, etc. for a totally new drug and thus, facilitate its use in Ayurvedic therapeutics. It was also observed that it is quite similar to the Pharmacognostic study method for natural drug and thus, it can be concluded that, studying a new drug by combining both methods would be more beneficial for the acceptance of new drug.

Keywords: Anukta dravya, Dravya pariksha Vidhi, Pharmacognostic study

INTRODUCTION

Ayurveda deals with every aspects of human life. The principles of Ayurveda are eternal but its applications can be modified as per the timely changes in society. Literary meaning of the word 'Anukta' is 'unsaid' and unuttered.

The knowledge about medicinally useful plants in the early age scientifically documented and systematically organized in Ayurvedic Samhita, Nighantus and other texts. Codified information regarding plants of folklore origin is not documented in the classical texts of Ayurveda. Multiple exotic plants are existent in India which are not referred to either in classical literature of Ayurveda and are commonly referred to as Anukta Dravya in Ayurveda. A good number of such medicinal plants have been discretely mentioned at numerous instances. The complete description of such medicinal plants in terms of their pharmacodynamics properties i.e. name, identification, morphology, rasa, guna, virya, vipaka etc. Simultaneously, the

plants should be described botanically and evaluated for their pharmacodynamics so that they can be successfully utilized in therapeutics and documented by incorporating into Ayurvedic Materia Medica (Nighantus) for future reference.

WHO has appreciated the importance of medicinal plants for public health care and has framed guidelines to support the developing nations in their efforts to formulate national policies on traditional medicines and to study their potential usefulness as therapeutic agents.^[1] This has increased the responsibility of Ayurvedic experts. It is the high time to work on an anukta dravya when the world is looking at us primarily because of our knowledge of medicinal plants.^[2]

NEED:

Many important medicinal plants have been red listed and many are on the way. Anukta dravyas may solve the problem of scarcity of medicinal plants.

We are in era of newly emerging diseases; anukta dravyas may help in findings their solution.

Ethno-botanical studies carry a great importance in Ayurveda, Charaka clearly directs to collect information about known and unknown dravyas from forest dwellers, shepherds tribes etc.^[3] their serious studies may expand our knowledge of herbs.

Above all, it is our duty to keep introducing new dravyas in Dravyaguna Vigyana so as to maintain the Shashwata (everlasting) feature of Ayurveda

Acharya Charaka's view and guidelines (C. Vi. 8/87) proved to be a source of light or the basic guideline for the later

researchers, who studied new drugs. Thus, later evolved Nighantus followed this and studied new drugs; and described them in their compendium. Many drugs from other healthcare systems or which were not found in India, were later incorporated in Ayurveda. This has led to new addition. For example, Yashtimadhu, Hingu were originally from Gulf region, Dalchini and Lanka were from Sri-lanka, but we find their references as well as elaborate description in classical texts of Ayurveda.

Thus, following this tradition, we must find out such commonly used as well as folk medicines, which do not have mention in Ayurvedic Samhitas. Such time tested drugs, are needed to be studied by Dravyaguna Researchers. In Ayurveda, this can be attained with the help Dravya Pariksha Vidhi in Vimansthana of Charaka Samhita. Thus, this article aims at proper understanding of Dravya Pariksha Vidhi and its applicability in today's era.

AIMS AND OBJECTIVES

The study is carried out with an aim to review the Basic concept of dravya Pariksha Vidhi, try to understand it thoroughly and find its applicability in practice.

MATERIALS

This study was carried out after searching various medical databases like Pubmed, Dhara etc. and classical texts like Charaka Samhita, Sushruta Samhita and books like Dravyaguna Vigyana by different authors etc. related to Anukta dravya and the concept of 'Dravya Pariksha Vidhi.'

The suggested approaches for documenting Anukta dravya may involve following steps:

1. Collecting primary information about the Anukta dravya through folklore and extensive study literature.
2. Identification with the help of botanical and pharmacognostical studies
3. Nomenclature as per criteria laid down by different Nighantus esp. Raj Nighantu.
4. Evaluation of characteristics of Anukta dravya which contributed towards the biological actions such as rasa, guna virya, vipaka and prabhava in healthy volunteers.
5. Establishment of logical rational of biological actions which correlate properties of Anukta dravya with its pharmacological action.
6. Toxicity studies in animals.
7. Pharmacological studies.
8. Clinical studies.
9. Evaluation and validation of ethnobotanical claims. To confirm safe and effective use of plants material for human being.
10. Inclusion in Ayurvedic pharmacopoeia with possible benefit.

Collecting information about Anukta dravya:

- Documentation through folklore^[4]
- Comprehensive survey of literature^[5]: comprehensive review of books, journals and previous research works. Computerized search of published

and unpublished works related to the study.

Identification:

After recording local name, its botanical identification is done. Plants are identified according to Bentham & Hooker's system of classification.^[6] All relevant books available on Indian indigenous medicinal plants are consult for correct identification and verification.

Nomenclature:

Nomenclature of a substance is very essential for proper identification and to distinguish a particular substance from others. 'Nama' is defined by the learned as the word, which on being pronounced suggests some entity and is used in alphabets. The nomenclature also highlights that our ancestors had a keen sense of observation. In Ayurveda, methodology of nomenclature is multinomial. A plant is referred to by many names. Each name describes a particular feature or a specific attribute of the plant.^[7]

Name of plants are selected on the basis of varied criteria including Raj nighantu and Dhanavantari nighantu. In Dhanavantari nighantu,^[8] the names of plants, one or many assigned according to their habitat, form, color, potency, taste, effect, etc.

In Raj nighantu,^[9] seven basis of names and synonyms of plants are described.

1. Rudhi (Traditional usages) e.g. Atarushaka, Guduchi
2. Prabhava (Effect) e.g. Krimighna
3. Desha (Habitat) e.g. Vaidehi, Magadhi

4. Lanchhana (Morphological charactes) e.g. Chitratandula
5. Upama (Simile) e.g. Varahikanda
6. Virya (Potency) e.g. Ushana
7. Itaravhava (Names prevalent in other factors or other regions) e.g. Kakavha

According to guidelines given in both nighantus regarding nomenclature of new medicinal plants, the nomenclature of Anukta Dravya is done. Further, there is a need for synthesis of contemporary and Ayurvedic knowledge, which will help the future generation to use Anukta Dravya, the ignored medicinal plants, of great value.

Dravya Pariksha Vidhi as per Charaka Samhita:

तस्यापीयं परीक्षा-
इदमेवंप्रकृत्येवंगुणमेवंप्रभावमस्मिन् देशे
जातमस्मिन्नुतावेवंगृहीतमेवमुपस्कृतमनया च
मात्रया युक्तमस्मिन् व्याधावेवंगविधस्य पुरुषस्ये
एतावन्तं दोषमपकर्षत्यपशमयति वा यदन्यदपि
च एवं विधं भेषजं भवेत्तच्चानेन विशेषेण
युक्तमिति ॥

च. वि. 8/87

As per the description Acharya Charaka has given guidelines for drug standardization, which are as relevant in today's era too. It indicates that a drug should be studied as follows:^[10]

1. Prakruti: Name, Natural order of drug and botanical morphology.
2. Guna: Physical – Rasa, Virya, Gunas and chemical properties
3. Prabhava: Therapeutic actions.
4. Desha: Botanical distribution
5. Rutu Gruhitam: Time and method of collection
6. Nihit: Method of preservation

7. Upaskrit: Sanskar, Pharmaceutical processing for its preparations
8. Matra: Dosage
9. Vyadhi: Various diseases in which drug can be therapeutically used
10. Evam vidham purushasya: Clinical trials or in which person it is probably useful

Prakruti of a Drug:

It includes Namarupa and nature of the drug. Ayurveda stressed to utilize the knowledge and experience regarding drug identification, of cowherds, hermits, huntsmen, forest dwellers etc.^[11] It helps in developing crude knowledge regarding identity of a drug and ascertain it. It has reduced confusion regarding classification and identification of a drug especially in case of unknown or folklore medicine.

Guna:

These properties will explain the therapeutic actions of drug and also help in identification and standardization of drug. It includes Rasa, Veerya, Vipaka, Gurvadi gunas and Panchbhautikatawa of the drug.^[12]

1. Determination of Rasa:

Rasa of a drug is gustatory appeal.^[13] It is told by Charaka that “रसो निपाते द्रव्यानां”. The taste perceived immediately on dropping the drug on tongue is its Rasa.

To find out the Rasa of the new drug, Nipata method and Taste threshold method can be followed.

Nipata method:^[14]

Powder of the drug is used in the experimental study to ascertain its Rasa. The study is conducted in volunteers who are able to identify the taste and express it. Volunteers are requested to taste the powder after washing their mouth with distilled water. They are then requested to write down the taste they felt instantaneously and the taste felt after half a minute on a paper.

The taste perceived in first half minute is considered as the Pradhana Rasa and that perceived after as Anurasa.

Taste threshold method:

It is the assessment of degree of variation of taste through taste threshold method. Dr. Shiv Charana Dhyani has worked on primary, comparative & superlative degrees of rasas e.g. Madhura-Madhuratara-Madhuratama and has fixed taste thresholds. This method involves forming solutions of drug by mixing 5gm of drug in 50ml of water—cold water, hot water and boiling with water. Again tasting is done after specific repeated dilutions and threshold is counted by noting down the last reading of dilution where taste is perceived and is compared with the available data regarding Taste-threshold scale of that specific Rasa and accordingly Taste-threshold for the drug is specified.^[13]

Determination of Gunas:

As per Ayurveda Guna means physiochemical (Bhautika) or pharmacological (Karmuka) properties of the dravya.^{[12][13][14]} While considering Gunas of a dravya, Karmuka gunas are expected to be considered. The Gunas inherent in a dravya can be inferred by their rasa, applications and biological

responses. They can be inferred also by its known Pharmacological actions.

Determination of Vipaka:

In Ayurveda, Vipaka is associated with the Rasa i.e. a fixed Vipaka is associated with corresponding Rasa. thus, It can be assessed by the knowledge of rasa.^[13] Vipaka of a drug is inferred by its properties after it has undergone digestive and metabolic transformations.^[13] Thus, Vipaka can be assessed by its action produced on Doshas, Dhatus and Malas. It can also be assessed on the basis of the available literary information, regarding its properties and actions.^[13] It would be based upon the Trividha Vipaka Vada of Ayurveda.

Determination of Veerya:

Veerya of a drug can be understand according to endothermic and exothermic reaction method mentioned by Dr. S.C. Dhyani.^[13] Assessment of Veerya is done by the Endothermic and Exothermic reaction in distilled water. 100gm of drug is added to 100ml of distilled water. And, the reactions were noted for an hour. The results are concluded by the rise or fall in temperature. Veerya can also be assessed by Anumana, by its effect on appetite, sleep and basic metabolic rate. But in this method, it is necessary to consider Ashtavidha Veerya mentioned by Shushruta as it would facilitate the understanding of Veerya more correctly. These 8 types of Veerya are considered as the elaborate description of 2types of Veerya.

Classification of Ashtavidha Veeryas^[13]

Sheeta	Guru, Snigdha, Mrudu
Ushna	Laghu, Ruksha, Teekshna

Determination of Prabhava:

Prabhava is a unique action of a drug. It can be defined as an action of a dravya which we cannot attribute to any of its rasapanchaka. No test parameters are available for its assessment.

Determination of Panch-bhautikata or Bhutika constitution:

Acharya Sushruta has given a good hint regarding the identification of Mahabhuta dominance. According to him assessment of dominant mahabhuta can be done by two ways:^[15]

1. By identification of taste & its intensity i.e. Asvadato
2. By identification of perceivable Guna-karmas i.e. Bhutaganadi

Accordingly, an attempt was made and a calculation method was developed in the study, “A study of Samskara and its role in alteration of Panch-bhautika composition of dravya”, by Dr. Dilip Nalge, Jamnagar. 2004.

In this method of calculation, percentage of mahabhuta dominance, using the gunakarmas of parthivadi dravyas mentioned by Bruhat-trayee and Ashtanga-Hridaya. Gunakarmas mentioned in texts are the maximum perceivable guna-karmas of any dravya. So these are more important regarding identification of mahabhuta dominance. As identification of mahabhuta dominance is itself a vast topic. It needs number of separate research works to be carried out to develop parameters for assessment of mahabhuta dominance.

The Asvadato or “taste with tongue” method is comparatively easy criterion to determine mahabhuta dominance, as specific rasas are having dominance of specific mahabhutas. But this has limitations, as this is only helpful in the case of Samana pratyayarabdha dravyas, as the arambhika mahabhutas of rasa and dravya karmas are same in Samana pratyayarabdha dravyas. So by understanding taste only, one may become able to understand dominance of mahabhutas in that dravya also.

Prabhava: (Specific action of Drug)

Prabhava stands for specific action of a drug. In modern terms, Prabhava is ‘Pharmacodynamics’ of a drug i.e. effects of a drug on various organs, body systems are studied. It can be inferred, on the basis of available literature references regarding the action of drug.

According to Ayurveda, actions of drug can be divided as-

- a. Action on Dosha
- b. Action on Dhatu
- c. Action on Mala
- d. Action on Strotas

Desha: (Habitat)

The soil, air, temperature, rainfall, sunlight and altitude are the important factors for the growth and development of plant. Since, they vary from place to place, knowledge about the habitat of any drug is very important. Some plants are found in specific regions while some can be found everywhere. Even if the plant is available everywhere, its chemical constituents vary in amount, which is proved by many researchers. According to Ayurveda, a drug should be collected from Prashasta desha. Thus,

study of ecological conditions play an important role in drug study.

Rutum Gruhitam: (Season and method of collection)

Drug should be collected in prashasta kala. Time is important factor as it imparts direct effect on potency of drug. In Ayurveda, Prashasta Rutu^[16] for drug collection is well described.

Nihitam: (Method of Preservation)

Preservation is also an important factor as it imparts direct effect on drug. In Ayurveda drug's preservation is well described.^[17] Even modern sciences states that a standard quality drug can be obtained only if it is collected by Good collection practices and preserved by Good storage practices related guideline must be followed as it may affect the physical as well as chemical properties of a drug.

Upaskrit: (Pharmaceutical processing)

Many preparations can be made from single drug to make it more potent, preserved, palatable and clinically effective.^[12] Information about pharmaceutical preparation mentioned, related to the study drug can collected and an attempt could be made to consider its use in various Ayurvedic kalpas.

Matra: (Dosage)

This is fixing the dosage of a drug.^[12] In Ayurveda, it is fixed according to severity of disease, age, time, koshtha and agni of the patient.

Vyadhi: (Various diseases in which drug can be useful)

A single drug can be used in different diseases, symptoms at different

places.^[13] Hence knowledge from different people in different places regarding its use should be compiled. The applicability of the drug as a possible therapeutic agent can be decided according to its uses mentioned in literature sources studied. Some of its possible applications can also be inferred according to its assessed Rasapanchaka.

Evam Vidham Purushasya: (Clinical trials or Person to whom it is to be administered)

Drug should be studied in clinical trials, which provide more valid base for the acceptance of a drug, as it is the best way to evaluate any drug's medicinal utility. Thus, it is needed to be studied according to Ayurvedic perspective of clinical trials but not before verifying its safety profile.

MODERN CONCEPT OF PHARMACOGNOSY:

The American Society of Pharmacognosy defines Pharmacognosy as "the study of the physical, chemical, biochemical and biological properties of drugs, drug substances or potential drugs or drug substances of natural origin as well as the search for new drugs from natural sources."^[18]

It is the study of medicinal uses of various naturally occurring drugs its history, sources, distribution, method of cultivation, active constituents, medicinal uses, identification test, preservation methods, substitutes and adulterants.^[19]

Scheme for Pharmacognostical Studies of natural drug:^[20]

- ✓ Official name, synonyms and vernacular terms.
- ✓ Biological source and family

- ✓ Geographical source and habitat
- ✓ History and introduction of crude drug
- ✓ Cultivation, collection and processing of drug
- ✓ Morphological or Macroscopic traits
- ✓ Microscopic or histological studies
- ✓ Chemical constituents and qualitative chemical tests
- ✓ Pharmacological actions, therapeutic and other pharmaceutical uses and formulations
- ✓ Commercial varieties, substitutes and adulterants
- ✓ Quality control of crude drug and phytopharmaceuticals derived from them

Macroscopic, microscopic qualitative analysis and chemical analysis are needed to be done in order to understand or achieve proper standardization of a drug.

From the above points, it is clear that Pharmacognostic study covers thorough information regarding a natural drug. Thus, this can be co-related with the Dravya Pariksha Vidhi in Vimanasthana of Charaka Samhita.

Applicability of Dravya Pariksha Vidhi:^[21]

1. The study of any new drug by Dravya Pariksha Vidhi- C.Vi. 8/87 would facilitate its inclusion to the Ayurvedic Compendium.
2. It is most applicable for the study of Anukta Dravyas
3. When a drug is studied according to the 'Dravya Pariksha Vidhi', it is studied according to the

attributes of Ayurveda, thus, we can get a complete standard profile of the drug according to the Ayurvedic point of view.

4. It would facilitate the use of drug in Ayurvedic practice once its Rasapanchaka etc. are known.

CONCLUSION:

Thus it can be concluded that if a new drug is studied according to the "Ayurvedic- perspective" as well as by modern Pharmacognostic view, it would provide a more firm base for its acceptance in Ayurveda therapeutics.

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