DETERMINATION OF ANUKTA DRAVYA THROUGH CLASSICAL AYURVEDIC PRINCIPLES

HITESH VYAS1* AND KALPESH B. PANARA2

Department of Basic Principles1, Department of Dravyaguna,2
I.P.G.T & R.A., Gujarat Ayurveda University, Jamnagar-361008 Gujarat (India),

Abstract: Introduction: Bheshaja or drug is the tool for the physician and is described as the second most important factor for successful management of disease in Ayurvedic classical texts. In spite of having detailed description of numerous drugs along with their properties and therapeutic usage, still many of the medicinal plants are not included in Ayurvedic texts as they are large in number. Acharyas suggested utilizing Yukti (intellect) along with Anumana (Inference) to determine properties of undocumented drugs.

Aim: To explore the classical principles regarding the determination of properties of Anukta (undocumented) Dravya.

Material & Method: Brihattrayi with available commentaries and other literatures were referred and critically analyzed. Various scattered principles and methods providing the guideline on the evaluation of Anukta Dravya were synchronized and explored.

Results and Discussion: Anukta Dravya may be used to verdict with four kinds of Pramaṇa – Aaptopadeha, Pratyaksha, Anumana, and Yukti. Apart from this, properties of undocumented or extra-pharmacopeial drugs may be depended on many factors such as Chara (Desha), Sharira Avayava, Swabhava (constitution), Linga (sex) etc. Drug evaluation method described in Charaka Samhita emphasizes various aspects of new drug development such as morphological identification, analyzing inherent properties and conducting clinical trial for establishing safety and efficacy. Utilization of Pramaṇa with other principles may provide the evaluation method of Anukta Dravyas.

Conclusion: Classical principles and methods may contribute to present drug development guideline for the determination of Anukta Dravya (undocumented or unexplored medicinal plants).

Key words: Anukta Dravya, Dravya Pariksha Vidhi, Pramaṇa, Yukti.
INTRODUCTION

Ayurveda describes four elements for successful management of the diseases. These four are Vaidya (Physician), Dravya (Drug), Upasthata (Nursing staff) and Atura (Patient) [1] (Sutrasthana 9/3). Among these four, Dravya is recognized as the Karana (tool) [1] (Vimanasthana 8/87) for the physician to achieve the state of Dhatusamya (equilibrium of body elements) which indicates the importance of drug. It is further emphasized by creating Bhesajya Chatushka (Medicine quadrat) as first group of chapters in Charaka Samhita. Ayurvedic texts described many drugs in terms of their names, properties and therapeutic usage etc. As per the FRLHT study, total 620 plants have been identified from Charaka Samhita [2] while some scholars opine that about 1000 plants have been described in Charaka Samhita including grains and other food plants [3]. In Sushruta Samhita, 573 plants have been mentioned for the treatment of various diseases [4] (Uttaratantra 66/8). Acharya Vagbhadra in Ashtanga Hridaya described about 903 drugs [3]. Apart from these three principal texts, many Nighantus (lexicons) of later period, by adding many new plant drugs, enrich the classical pharmacopoeia. Due to innumerability of plant species, many plant drugs were not recorded in classical treatises though they have the medicinal properties. Therefore, no any classical herbal pharmacopoeia is available which enumerates all the medicinal plants and this fact is also supported by the Charaka Samhita [1] (Sutrasthana 27/329,330). Such drugs are being utilized and practiced by the many ethnic groups. Further, many herbal drugs were introduced in India after intrusion of many other countries. Such undocumented and newly introduced herbs are not evaluated scientifically till date. Undocumented or unexplored drugs are known as Anukta Dravya (extra pharmacopoeial drugs). Recently, herbal drug research emphasized on enlightening the medicinal properties of such undocumented herbs. But, it is very difficult to transform properties of such herbs into therapeutic application as Ayurvedic principles of drug actions i.e. Rasa (taste), Guna (properties), Virya (potency), etc. are not evaluated. Determination of Anukta Dravya (extra pharmacopoeial drugs) wherein properties of Dravya can be enlightened through basic principles of Dravyaguna is the need of hour. But, no classical guideline is directly available which provides the evaluation method of such kind of unexplored drugs. Therefore, efforts have been made to compile the scattered references which explain the basic concepts for determination of Anukta Dravya (extra pharmacopoeial drugs) through classical Ayurvedic method.

To explore the principles regarding Anukta Dravya, texts of Brihattrayi (Charaka Samhita, Sushruta Samhita and Ashtang Hridaya) with available commentaries, Nighantus and other literature were screened, analyzed and interpreted in the light of aim of the study.
RESULTS AND DISCUSSION

No direct references regarding determination of properties of Anukta Dravya are available in classical texts. Maharshi Charaka while concluding Mahakashayas in Sutrasthana 4th chapter said that ‘the intellectual person may find out properties from new drug after the logical examination and analysis’ [1] (Sutrasthana 4/20) Again in Sutrasthana 27th chapter, he stated that the properties of drug utilized in other region may be determined by taking into account the attributes made for them by the people of that locality [1] (Sutrasthana 27/329,330). Maharshi Sushruta also opined that qualities of the substance can be determined by Rasa (taste perception) and Bhuta-guna (properties of proto-elements) [4] (Sutrasthana 46/331). Such indirect scattered references provide the clue to determine the method for the evaluation of Anukta Dravya. But further detail protocol/method needs to be evaluated.

Pramana (Evidence)

Four kind of Pariksha also are useful for this purpose. Four kind of Pariksha (investigation method) i.e. Auptopadesha (authorities testimony), Pratyaksha (direct perception), Anumana (inference) and Yukti (logical reasoning) have been described to assess all kind of substances [1] (Sutrasthana 11/17). Anukta Dravya also can be assessed by these methods.

Auptopadesha: These are authoritative instructions based on their experience. It is said that foresters like shepherds and goatherds are acquainted with the names, forms [1] (Sutrasthana 1/120). It has reduced confusion regarding classification and identification of a drug especially in case of unknown or folklore medicine. Nomenclature and morphological identification can be learnt from these persons and they may be considered as Apta in this regard.

Pratyaksha: It is evidence based on direct observation [1] (Vimansthana 4/7). Organoleptic characters of the drug such as taste, color, smell etc. can be determined through this tool.

Anumana: it is the inference or indirect knowledge based on reasoning. It is also important method to determine the properties of Anukta Dravya.

Determination of Guna through Pramana

Guna includes properties of drugs responsible for drug action such as Rasa, Veerya, Vipaka, Gurvadi Gunas and Prabhava of the drug [1] (Sutrasthana 26/71). It will also help in identification and standardization of drug. General principles of Drug action are enumerated as Rasapanchaka i.e. Rasa (taste), Guna (quality), Virya (potency), Vipaka (metabolism) and Prabhava (specific principle). Among them the first four principles are categorized under rational principles while Prabhava is designated as empirical component as its activity is inexplicable [1] (Sutrasthana 26/67-70). Guna of Dravya such as Rasa, Virya, Vipaka etc. can be determined with the help of Pramana.
**Determination of Rasa**

Charaka states *rasa* is experienced as gustatory sensation when a *Dravya* comes in contact with the tongue [1] (*Sutrasthana* 1/64). Rasa serves as a tool to infer the *Panchabhautika* composition of the *Dravya* [4] (*Sutrasthana* 46/331) and facilitates for identification of spectrum of activity of a particular drug. Prof. C Dwarakanath discovered the method known as “Taste threshold” for determination of intensity of *Rasa* in a given substance. [5] Pushpan R & Nishtewsar K. have designed a proforma wherein taste is identified through quantifying perception of symptoms allotted to Rasa for the identification in view of guidelines denoted in *Ayurvedic* Classics. Single blind Rasa evaluation method was developed and validated by studies on healthy volunteers. Based on the guidelines denoted in *Ayurvedic* Classics, a single blind Rasa evaluation method was developed and validated by studies on healthy volunteers.[6]

But, in case of poisonous plants where the direct taste cannot be possible, indirect method with help of *Anumana Pramana* may become helpful to assume the taste of such drugs. [7] (*Sutrasthana* 7/14-18).

**Determination of Vipaka**

*Vipaka* is the transformed state of ingested substance after digestion. *Vipaka* can be assessed based on *Doshakarma* (action on humors), *Dhatukarma* (action on tissues) and *Malakarma* (action on metabolic waste products) [1] (*Sutrasthana* 26/58).

**Determination of Virya**

The *Virya* of *Dravya* is perceived through two means, viz. *Adhivasa* (*Anumana*-Inference) and *Nipata* (*Pratyaksha*-Directly) [1] (*Sutrasthana* 26/66). Here, *Adhivasa* (*Anumana*) means after knowing the karma done by the *Dravya*, inferring its *Virya*. *Nipata* (*Pratyaksha*) means direct perception of *Virya* through sense organs. When a *Dravya* comes in contact with any of the sense organs it is grouped under *Nipata*.

*Acharya Charaka* stated that it is impossible to describe all drugs with their attributes as they are unlimited in number. He also advocated the therapeutic utility of each and every substance of the world in specific condition and situation but selection of drug is to be made in accordance with the propriety of its administration and therapeutic needs [1] (*Sutrasthana*26/12) So, method for the evaluation of properties of undocumented drugs is required for their rational and proper therapeutic administration and uses. *Acharya Chakrapani* suggested use of *Panchamahabhuta Siddhanta* for assessment properties of *Anukta Dravya* [1] (*Sutrasthana* 27/329,330). All substances are classified in to the five categories depending upon the dominance of one or other *Mahabhutas* and specific characteristics are described. For instance, *Prithvi Mahabhuta* possesses *Guru* (heavy), *Kathina* (hard), *Khara* (rough), *Shira* (immobile), *Sthoola* (gross) etc. qualities [1] (*Sutrasthana* 26/11). To determine the therapeutic activities of unknown drug, initially,
Panchamahabhautic categorization based on its Guna (properties) should be evaluated. Therapeutic utility can be inferred further as the actions of such Mahabhutas and also drugs having various tastes are already described in classical text. Maharshi Sushruta and commentator Dalhana also has given the same opinion [4] (Sutrasthana 46/331).

Other principles
Few more ways are also indicated by Maharshi Charaka to determine the properties of Anukta Dravya. At the end of Mamsa Varga, Maharshi stated that Chara (habitat), Sharira Avayava (body part), Swabhabha (constitution), Linga (sex) etc. of animals should be examined to determine the properties of Mansa (meat) [1] (Sutrasthana 27/331). Some of these parameters can be used for evaluation of herbal drugs too.

Chara (habitat): Three kind of Desha (habitat) have been described in Ayurvedic classical texts. They are Anupa (marshy), Jangala (arid) and Sadharana (general or medium) [1] (Kalpasthana 1/8). Among these Jangala land is said to be dry and Vata-Pitta predominant, i.e. drugs of this land are having less humidity and are comparatively Laghu (light) in nature. Opposite to that Anupa kind of Desha is more humid and therefore herbs of this land tend to be Guru (heavy). This is how on the basis of habitat of the unknown drug few properties can be determined (Kalpasthana 1/8) (table no. 1). Sushruta mentioned characteristic features of Panchabhautika Bhoomi (land predominant of particular Mahabhoota) [4] (Sutrasthana 36/4). For instance, Land with many stones, having blackish colour and hard is Prithvi Mahabhuta predominant and the plants of this land also will having dominant properties of Prithvi Mahabhuta. Further, Land is also categorized in to two types based on Hot and cold potency. This division further leads to infer the quality and properties of medicinal plant that are grown in particular land [4] (Sutrasthana 36/5). This reference of Sushrutha Samhita is also useful for determination of properties of unknown drugs.

<table>
<thead>
<tr>
<th>Desha (region)</th>
<th>Anupa</th>
<th>Jangala</th>
<th>Sadharana</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dosh Dominancy</strong></td>
<td>Kapha</td>
<td>Vata</td>
<td>Balanced Dosha</td>
</tr>
<tr>
<td>Air</td>
<td>Harsh and hot</td>
<td>Soft and cold</td>
<td>Moderate</td>
</tr>
<tr>
<td>Rainfall</td>
<td>Heavy</td>
<td>Less</td>
<td>Moderate</td>
</tr>
<tr>
<td>Land</td>
<td>Uneven land is predominantly Many large mountains</td>
<td>Clear sky and the land is even Very few and small hills</td>
<td>Characteristic of both</td>
</tr>
<tr>
<td>Disease tendency</td>
<td>Kapha-Vata Roga</td>
<td>Vata-Pitta Roga</td>
<td>-</td>
</tr>
</tbody>
</table>
Sharira Avayava: Though Maharshi Charaka described this with reference to animal meats but this principle also can be used for herbal drugs. Bhavprakash while describing Shaka Varga (vegetables), says that there are six types of Shaka-Patra (leaf), Pushpa (flower), Phala (fruit), Nala (branch), Kanda (root or rhizome) and Sanswedaja (mushroom etc.) and each category is Guru (heavy) to its prior category [8] (Poorvakhanda, Shakvarga/1). It means leaves are most Laghu (light) and roots are most Guru (heavy). Anukta Dravya can also be assessed by application of this principle of body parts of the herb.

Dravya Pariksha (Drug examination or evaluation tools)
‘Dravya Pariksha Vidhi’ (drug examination method) has been introduced by Acharya Charaka [1] (Vimanasthana 8/87). Further, quantification, standardization and examination tools for various factors are discussed in Vimanasthana. Among them, ‘Dravya Pariksha Vidhi’ may be utilized to assess purity, quality and efficacy of already known or documented drug as well as unknown drugs. With the help of this methodology, descendant writer of Ayurvedic texts might have evaluated the properties of new herbs and added their application in management of various diseases. Such as Yashtimadhu, Hingu, Chopachini etc. herbs have been added to classical Ayurvedic Pharmacopeia in later period [9]. This method also provides the standardization and quality control aspect for drug through good cultivation, harvesting and storage practices. Clinical trial on the new drug will provide the assurance on safety and efficacy of the drug.

CONCLUSION
Anukta Dravya i.e. undocumented or extra pharmacopeial drugs can be assessed by Ayurvedic basic principles. Four Pramana emphasize the role of evidence in any research of examination protocol. Utilization of Pramana with other principles may provide the evaluation method of Anukta Dravyas. Classical drug examination method provides various aspect of new drug development such as morphological identification, analyzing inherent properties and conducting clinical trial for establishing safety and efficacy. Monograph of any Anukta Dravya can be prepared based on examination method for drug mentioned in Ayurvedic texts. The study of any new drug by these examination tools would facilitate its inclusion to the Ayurvedic compendium.

References
3. **Vaidya Bapalal Shah.** Charaka no Swadhya (Guj); part-2, Chapter 21; 1st ed., Prachya Vidya Mandir, Maharaja Sayajirao University, Vadodara; **1979**: 727


5. **C. Dwarakanath.** The fundamental principles of Ayurveda **Part III.** Chowkambhba Krishnadas Academy, Varanasi **2009**:16


8. **Bhavmishra.** Bhavprakash, (Girija Shankar Shastri ed.). Sastu Sahitya Vardhaka Karyalaya, Ahemdbad, **1985.** Pp.448


**Corresponding author:** Vd. Hitesh Vyas, M.D., PhD (Ayu) Associate Professor, Department of Basic Principles, I.P.G.T & R.A., GAU, Jamnagar- 361008 (Gujarat), email: drhavyas@yahoo.co.in, M- 9426433231