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Substitution in Ayurveda w.s.r to *Yogratnakar* : A Conceptual Study

Poonam Rathore¹, Seema Bhagat²

1-MD Scholar, Postgraduate Department of DravyagunaVigyana National Institute of Ayurveda, Madav Vilas Palace, Amer Road, Jaipur , Rajasthan, India.

2-MD Scholar, Postgraduate Department of DravyagunaVigyana National Institute of Ayurveda, Madav Vilas Palace, Amer Road, Jaipur , Rajasthan, India.

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Corresponding author-

Poonam Rathore, MD Scholar,
Postgraduate Department of
DravyagunaVigyana National
Institute of Ayurveda, Madav Vilas
Palace, Amer Road, Jaipur
Rajasthan, India.

Email:

rathorepoonam345@gmail.com

ABSTRACT:

Introduction- Substitution is a replacement of equivalent drugs in place of original drugs on the basis of similar pharmacological actions and therapeutic uses. In *Ayurveda*, substitution is described by the name of *Abhava Pratinidhi Dravya*. During *Samhita Kala*, concept of substitution was not existed but later on this practices come in existence, but *Acharya Vagbhata* has mentioned that the *Dravya* having similar *Rasa* (Taste), *Guna* (Property), *Virya* (Potency) and *Vipaka* (Bio-transformation) should be used in absence of each other.

Material and Methods- Thorough review of Ayurvedic literature related to *Abhava Pratinidhi Dravya* is done for the better understanding of the concept, *Ayurveda* Compendia, Journals and Publications.

Result & Discussion- Substitution provides a great scope for the physician to utilize drugs that are easily available, cost effective and most appropriate for the management of the diseases. Now a days, the concept of substitution is entirely converted into intentional and unintentional malpractices of adulteration. This study mainly focuses on the concept of substitution with special reference to *Yogratnakar* in which commonly used substitute in place of original drug like *Trianthema portulacastrum* (*Varshabhu*) in place of *Punarnava* (*Boerhavia diffusa*), *Chitrak* (*Plumbago zeylanicum*) for *Danti* (*Baliospermum montanum*). *Polyalthia longifolia* for *Ashoka* (*Saraca indica*). etc has been delimitated.

Keywords- *Ayurveda*, Substitution, *Abhava Pratinidhi Dravya*, *Yogratnakar*.

INTRODUCTION

In the present era, depletion of natural resources like petroleum, drugs, food, and lot of other material are increasing day by day. Intensive research is being carried out all over the world to rule out alternatives for these resources. Plant resources mainly medicinal plants are

disappearing at an alarming rate and not enough attention is being given to seek alternate sources or substitutes for many of these plants. Although, many medicinal species have vanished from our country or are threatened with extinction, India is blessed with one of the richest floras in the world and still there are hundreds of species, which



have equal value to some of the commonly used plants and may be some of them; even be superior in their properties to those in common use.¹ Ayurvedic classics like *Charaka* and *Sushruta* have not given direct reference or enlisting *Abhava Pratinidhi Dravyas*, but *Acharya Vagbhata* explained *Pratinidhi* as; when there is unavailability of any particular drug during preparation of a compound, one should try to get another drug having similar potency in terms of *Rasa, Guna, Veerya* and *Vipaka*.² Not only this but a *Vaidya* can substitute a particular *Dravya* from a *yoga* (compound) based on the condition of patient, time, or disease.³ Detail description regarding *Abhava Pratinidhi Dravyas* can be traced from lexicons such as *Bhavaprakasha, Yogaratnakara, and Bhaishajya Ratnavali*.

Concept of substitute

Substitute is a drug having similar *Rasa, Guna, Vipak, Veerya* and is used on the absence or unavailability of original genuine drug.

Need for substitution

1. **Non-availability of the drug-** For e.g leaf of the *Taxus baccata* Linn. - Taxaceae, are used in place of *Talisa patra* i.e *Abies webiana* Lindl - Pinaceae⁴
2. **Uncertain identity of the drug-** for *Kakjangha* different species such as *Leea, Hirta*, etc. are considered
3. **Cost of the drug-** e.g *Rasna moola* (*Pluchea lanceolata* Oliver and Hiern) costs approx. Rs.700 per kg instead of that pharmacies preferred to use its leaf.
4. *Kumkuma* (*Crocus sativus* Linn.) being costly is substituted by *Kusumbha* (*Carthamus tinctorius* Linn.). Though here it is mentioned as substitute rather; the drugs used as adulterant in which *Guna Karmas* will not match.⁵
5. **Seasonal availability of the part-** Certain part of drugs are available seasonally in these cases, other drug can be introduced, which is having the same action.
6. *Rakta Punarnava* (*Boerhaavia diffusa* Linn.- Nyctaginaceae) can be substituted for *Shweta Punarnava* (*Trianthema portulacastrum* Linn.- Ficoidaceae) in case of non-availability.⁶
7. **Geographical distribution of the drug-** As *Pashanbheda, Berginea ligulata* is used in Northern India while in southern parts *Aerva lanata* is considered as the source.
8. **Regional substitutes-** Under one name, various drugs were used in various regions as there are changes in

vernaculars, misidentification or adulteration practices, traditions practicing of *Vaidya* community and specific drug action on the available source may be the cause of introduction of regional substitute.⁷

9. Rasna

Pluchea lanceolata Oliver and Hiren - Asteraceae - Punjab and Gujarat

Alpinia galanga Willd - Zingiberaceae - South India

Vanda roxburghii R. Br. - Orchidaceae - Bengal.

10. Shankhapuspi

Clitoria ternatea Linn. - Papilionaceae - Kerala

Evolvulus alsinoides Linn. - Convolvulaceae - North India

Canscora decussata Schult - Gentianaceae - In some other regions

11. **The adverse reaction of the drug-** *Vasa* is a well known *Rakta-Pittahara* drug, but due to its Abortifaciant activity its utility in pregnant women is limited, instead drugs such as *Laksha, Ashoka* etc. are substituted.⁸

Criteria for substitution

A drug to be considered as a substitute should fulfill the following criteria.⁹

Similarity in *Rasa-panchakas*.

Eg:-*Bala and Atibala*,

Exhibit similar therapeutic effects.

Eg:-*Ativisha and Musta*.

Substitution with totally different drug

- *Bharangi* (*Clerodendron indicum*) and *Kantakari*. *Bharangi* has *Tikta Rasa* and *Laghu, Ruksha Guna* and has *Kapha* and *Vatahara* property. While *Kantakari* (*Solanum surattens linn.*) has *Katu vipaka* and *Ushnavirya*. It has Glycosides - Verbascoside and solasonin, solamargin, solasurine respectively.
- Both *C. indicum* and *S. xanthocarpam* have shown Anti-histaminic activity. Both *C. indicum* and *S. surattens* are commonly employed in the diseases related to the respiratory system, which are commonly associated with release of Histamines and other Autacoids.

Substitution of different Species

- Two types of *Gokshura*. *Tribulus terrestris* (zygophyllaceae) and *Pedaliium murex* (*Pedaliaceae*) *T. terrestris* has the chemical constituents like chlorogenin, diosgenin, rutin, rhamnose and alkaloid. While *P.murex* has sitosterol, ursolic acid, vanilin, flavonoids and

alkaloids.

- Both the species are proved for nephroprotective, lothotropic, diuretic and hepatoprotective activities. If we analyse the clinical conditions where *Gokshura* is indicated i.e. *Mutrakruchcha*, *Mutraghata*, *Ashmari*, *Prameha* etc. both *Tribulus terrestris* and *P. murex* appear to be appropriate.

Substitution of the species belonging to same family

For e.g *Datura metal* and *Datura stramonium* possesses the chemical Constituents: alkaloids, scopolamine, atropine, hyocyanin and lyoscine. The Alkaloids are proved as bronchodilator and inhibitor of secretion of mucous membrane. The alcoholic extract of *Datura metal* show anthelmintic activity.

- The Alkaloid present in both the species are well proven bronchodilators and also they inhibit the secretion of mucous membrane of the respiratory tract.
- Thus as far as the diseases of the respiratory tract are concerned both *D. metal* and *D. stramonium* are beneficial, while as *Krimihara*, *D. metal* would be a better choice as it is a proven anthelmintic.

MATERIALS AND METHODS

Available *Ayurvedic* and allied literatures were studied for comprehensive understanding of concept of *Pratinidhi Dravyas*. Relevant information from various different texts, journals, and internet media was also utilized based on availability and necessity for comprehensive understanding of the subject. A detailed list of classical drugs and their *Pratinidhis* with botanical names was enlisted, which was critically studied and divided under various subclasses with possible explanation.

Acharya Yogaratnakara had mentioned some example of substitute drugs under concept known as *Abhava dravya* that means the absence/unavailability of required drug we use another drug of similar *Rasa*, *Veerya*, *Vipaka* (bioequivalent) as that of original drug. Table 1: *Abhava Dravya* mentioned by *Acharya Yogaratnakara*¹⁰

DISCUSSION

After analysis of the available information about substitute drug in ayurvedic literature the *Acharyas* were very firm about taking substitute drug in place of original drug on the basis of *Guna*, *Karma* that was possible due to their proper knowledge of original drugs identification, absence of repeated names of two drugs and less quantity of drugs.

Acharya Yogaratnakara, has well explained the substitutes of many plants which contributed tremendously for better clinical approach. This can be possible due to identification of new species and many more drugs were added to the list of substitute drugs. But today the concept of substitution is fully diverted into intentional and unintentional adulteration malpractices for profit due to increased demand, cheaper costs, and with an assumption of no side effects of herbal medicines.

CONCLUSION

In present era, the need of crude drug market is proper and qualified substitute drug in the absence/ unavailability of original drug rather than different drug which is inferior in quality and action of original drug because most of the important plant species becomes listed as endangered plants. The most essential criteria for substitution are the Pharmacological activity/ Bioequivalency of that drug than Morphological characteristics or Phytoconstituents. Substitution of plants achieved many goals though basic idea given by ancient *Ayurveda*. It provides a greater scope for the physician to utilize herbs that are easily available, cost effective and most appropriate for the clinical condition.

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ORCID

Poonam Rathore , <https://orcid.org/0000-0002-6314-5026>

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Table 1: *Abhava Dravya* mentioned by *Acharya Yogaratanakara*^[10]

SN	Original drug	<i>Abhava Dravya</i>
1.	<i>Guduchisatva</i>	<i>Guduchi Rasa</i>
2.	<i>Chitraka</i>	<i>Dantikshara/Apamargkshara</i>
3.	<i>Dhanvayasa</i>	<i>Duralabha</i>
4.	<i>Tagara</i>	<i>Kushta</i>
5.	<i>Murva</i>	<i>Gingini Bark</i>
6.	<i>Lakshmana</i>	<i>Mayurshikha</i>
7.	<i>Bakul</i>	<i>Shweta/Raktakamal</i>
8.	<i>Nilotpala</i>	<i>Kumudini</i>
9.	<i>Kamal</i>	<i>Kamalbeej</i>
10.	<i>Bakulatwaka</i>	<i>Babbulatwaka</i>
11.	<i>Jatipatra</i>	<i>Lavang/Jayafala</i>
12.	Leaf milk of <i>Arka</i>	Leaf juice of <i>Arka</i>
13.	<i>Pushkarmool</i>	<i>Kushta/Rootbark of airand</i>
14.	<i>Sthauneyaka</i>	<i>Kushta</i>
15.	<i>Chavya/Gajapi ppali</i>	<i>Pippalimool</i>
16.	<i>Daruharidra</i>	<i>Haridra</i>
17.	<i>Rasanjana</i>	<i>Daruharidra</i>
18.	<i>Saurashtramru ttika</i>	<i>Sphatika</i>
19.	<i>Talishapatra</i>	<i>Swarnatali</i>
20.	<i>Bharangi</i>	<i>Talishpatra</i>
21.	<i>All Lavana</i>	<i>Sendhalavana</i>
22.	<i>Yashtimadhu</i>	<i>Dhataki</i>
23.	<i>Amlavatasa</i>	<i>Chukra</i>

24.	<i>Chukra</i>	<i>Jambiri Nimbu Swarasa</i>
25.	<i>Draksha</i>	<i>Kashmariphala</i>
26.	<i>Draksha/kash mariphala</i>	<i>Madhukapushpa</i>
27.	<i>Nakhi</i>	<i>Lavangpushpa</i>
28.	<i>Shatavari/Vidari</i>	<i>Musali</i>
29.	<i>Khasa</i>	<i>Sugandhavala</i>
30.	<i>Shalaparni</i>	<i>Prushniparni</i>
31.	<i>Brihati</i>	<i>Kantakari</i>
32.	<i>Mishreya</i>	<i>Shatapushpa</i>
33.	<i>Mudgaparni</i>	<i>Mashaparni</i>
34.	<i>BrihataAgnima nth</i>	<i>Laghuagnimantha</i>
35.	<i>Kasturi</i>	<i>Kankola</i>
36.	<i>Kankola</i>	<i>Javitri/Malatipushpa</i>
37.	<i>Karpura</i>	<i>Sugandhi Mustaka</i>
38.	<i>Karpura</i>	<i>Granthiparna</i>
39.	<i>Kesara</i>	<i>Nava Kusumbhapushpa</i>
40.	<i>Shrikhanda/Sh wetaChandana</i>	<i>Karpura/Raktacandana</i>
41.	<i>Raktacandana</i>	<i>Navaushira</i>
42.	<i>Musta/Ativisha</i>	<i>Haritaki</i>
43.	<i>Haritaki</i>	<i>Karkatashrungi</i>
44.	<i>Nagakashara</i>	<i>Padmakeshara</i>
45.	<i>Bhallataka</i>	<i>Naddibhallataka</i>
46.	<i>Meda- Mahameda</i>	<i>Shatavari</i>
47.	<i>Kakoli- kshirakakoli</i>	<i>Ashwagandha</i>
48.	<i>Jivaka- rishavaka</i>	<i>Vidarikanda</i>

49.	<i>Riddhi-Vriddhi</i>	<i>Varahikanda</i>
50.	<i>Varahikanda</i>	<i>Charmakaralu</i>
51.	<i>Bhallataka</i>	<i>Chitrakamula</i>
52.	<i>Ikshu</i>	<i>Nala</i>
53.	<i>Madhu</i>	<i>Puranaguda</i>
54.	<i>Matsyandika</i>	<i>Khanda</i>
55.	<i>Khanda</i>	<i>Shwetasharkara</i>
56.	<i>Nirgundi</i>	<i>Tulasi</i>
57.	<i>Tulasi</i>	<i>Nirgundi</i>
58.	<i>Kutherika</i>	<i>Gramyatulasi</i>
59.	<i>Shwetapunarnava</i>	<i>Raktapunarnava</i>
60.	<i>Rasna</i>	<i>Kulinjana</i>
61.	<i>Suwarna</i>	<i>Swarnamakshika</i>
62.	<i>Swarnamakshika</i>	<i>Raupyamakshika</i>
63.	<i>Makshika</i>	<i>Swarnagairika</i>
64.	<i>Rasabhasma</i>	<i>Lohabhasma</i>
65.	<i>Kantaloha</i>	<i>Tikshnaloha</i>
66.	<i>Mukta</i>	<i>Muktashukti</i>
67.	<i>Vaidurya</i>	<i>Muktabhasma</i>
68.	<i>Paradabhasma</i>	<i>Rasasindura</i>
69.	<i>Rasasindura</i>	<i>Hingula</i>
70.	<i>Goksheera</i>	<i>Ajaksheera</i>
71.	<i>Gogruta</i>	<i>Ajagruta</i>
72.	<i>Ksheera</i>	<i>Munga/Masura Rasa</i>