

Substituting Drugs in Ayurveda with Special Reference to Botany

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Abstract

Substitute drugs utilize for the drugs which are not available. It mainly deals with rational substitution intentionally selected of crude drugs required for medicinal purpose. This concept is referred from one of the Laghutrayi, Bhavapraksha written in 16th century A.D. As the list of substitute is first of its kind and this Nighantu is considered. With proper revalidation of existing documented examples, there is always a scope to find out new substitutes for Abhava dravyas of today's time, keeping in mind, it is selected for discussion and bringing awareness about is the main concern for present research topic.

Keywords: Abhava Pratinidhi; Rational Substitution; Availability of Medicinal Plants

Introduction

Charaka has emphasized regarding the qualities of Ideal drug (Prashasta Bhesaja) for medicinal purpose should possess following aspects i.e. Bahuta (readily available & in abundance), Yogyatva (Eligible for Therapeutic uses), Anekvidha Kalpana (capacity to be formulated in varied type) and Sampat (Potential) [1-3].

Today over three quarters of world population relies on herbal plants and products for health care, as they symbolize safety in contrast to synthetics. In India nearly 9,500 registered herbal industries and a multitude cottage level herbal unit depends upon continuous supply of medicinal plants for manufacturing herbal medical formulation.

In fact, the major wild resource of medicinal plant required for herbal Industry is facing shortage due to non-availability of genuine plants due various problems like

over-exploitation, deforestation, loss of habitat, extinction of rare plants, indiscriminate harvesting impairing the availability of raw drugs.

The demand of medicinal plant is ever increasing but fails to meet supply with authentic drug giving rise to adulteration and irrational substitution affecting efficacy and safety of herbal medicines. Non-availability was very well sensed after the Samhita period and from medieval period evolved the concept of Pratinidhi Dravya.

Ashtang Hridaya while describing 33 groups of plants, with similar Pharmaco-therapeutic activity proposed that, if any drug in a group if not available can be substituted with newer drug and the inappropriate drug to the group should be rejected.

On observing the difficulties on procuring the original drug arise the concept of Pratinidhi, with a proper and precise list of substitute drugs probably for the first time in

Bhavprakasha. Substitution is based on Ayurveda principles, that both the drugs Abhava Pratinidhi should possess similar Guna i.e. Rasapanchak and proven on basis of pharmaco-therapeutic activity. Pratinidhi drugs serves to overcome the problem of drugs un-availability, scarcity, rare or difficult to procure [4-6]. This in a way helps to produce good quality herbal products and lend a support in conservation and sustainability of medicinal plants.

Materials and Methods

The Abhava pratinidhi Dravya List includes 47 drugs of plant origin (Sthavar Dravya), 2 drugs of animal origin

(Jangam Dravya), 7 drugs Minerals-Metals origin (Bhoumya Dravya) and 5 food materials (Ahariya Dravya).

The Pratinidhi dravyas of Bhoumya dravyas are excluded. Here author have tried to give the botanical names for fore mentioned drugs so that acceptability of the concept will be enhanced.

The table gives botanical names for the each paired substitutes mentioned in the classics are gathered and presented in here.

S.No	Drug	Botanical name	Family	Part used
1	Bakula	Mimusops elengi Linn	Sapotaceae	Flower & bark
	Kumuda	Nelumbium rubra Roxb.	Nymphaeaceae	Flower
2	Tagara	Valeriana wallichii DC5	Valerianaceae	Roots
	Kuṣṭha	Saussurea lappa C.B. Clarke	Compositae	Roots
3	Meda-mahameda	Polygonatum cirrifolium Linn	Liliaceae	Bulbs
	Śatāvāri	Asperagus recemosa	Asperagaceae	Roots
4	Jivaka-Ruṣābaka	Microstylis wallichii Linn	Orchidaceae	Bulbs
	Vidāriganda	Pueraria tuberosa D C OR, Ipomoea Digitata Linn	Fabaceae, Convovulaceae	Bulbs, Bulbs
5	Kakoli-Ksirkakoli	Fritillaria roylei	Liliaceae	Bulbs
	Asvagandha	Withania somnifera Dunal	Solanaceae	Roots
6	Riddhi-Buddhi	Habenaria edgeworthii	Orchidaceae	Bulbs
	Varahikanda	Dioscorea bulbifera Linn	Dioscoreaceae	Bulbs
7	Surasa	Ocimum sanctum	Lamiaceae	Panchanga
	Nirguṇḍi	Vitex negundo	Verbinaceae	Panchanga
8	Drakṣa	Vitis vinifera Linn	Vitaceae	Fruit
	Kāṣmari palam	Gmelina arborea Linn	Verbinaceae	Fruit
9	Kumkumam	Crocus sativus Linn	Iridaceae	Stamens
	Kusumbhapuṣpam	Carthamus tinctorius Linn	Composite	Petals
10	Chitraka	Plumbago zeylanica	Plumbaginaceae	Roots
	Danti	Baliospermum montanum Muell	Euphorbiaceae	Seeds
11	Musta	Cyperus rotundus Linn	Cyperaceae	Roots
	Atiṣa	Aconitum heterophyllum Wall	Ranunculaceae	Roots
12	Kṣiram	Milk	Milk	Milk
	Mudga	Vigna radiata	Fabaceae	Seed
13	Chavika	Piper chaba Hunter	Piperaceae	Root
	Gajapippali	Piper longum Linn	Piperperaceae	Fruit
14	Ela	Eleatteria cardamomum	Zingiberaceae	Fruit
	Talisapatra	Abbies webbiana	Pinaceae	Leaves
15	Danwayasa	Alhagi camerlorum Fisch	Fabaceae	Panchanga
	Durālabha	Fisch Fagonia Arabica Linn	Zygophyllaceae	Panchanga
16	Guggulu	Commiphora wightii	Burseraceae	Gum
	Nimba niryasa	Azadiracta indica	Meliaceae	Gum
17	Jatipatra	Myristica fragrans	Myristicaceae	Fruit
	Lavanga	Syzygium aromaticum	Myrtaceae	Flowerbud
18	Nilotpala	Nymphaea stellata Willd	Nymphaeaceae	Flower

	Kumudam	<i>Nymphaea rubra</i>	Nymphaeaceae	Flower
19	Maricha	<i>Piper nigrum</i>	Piperaceae	Fruit
	Pippali	<i>Piper longum</i> linn	Piperaceae	Fruit
20	Puškaramūla	<i>Innula racemosa</i>	Astreaeae	Roots
	Śati	<i>Hedychium spicatum</i> Buch	Zingiberaceae	Roots
21	Somaraji	<i>Psoralea corylifolia</i> Linn	Fabaceae	Seeds, Seed-oil
	Prapunnata	<i>Cassia tora</i>	Caesalpinaceae	Fruit
22	Daruniṣa	<i>Berberis aristata</i> DC	Berberidaceae	Stem-Bark
	Niṣa	<i>Curcuma longa</i> Linn	Zingiberaceae	Tubers
23	Kasturi	Animal musk	Cervide	Musk
	Kankolam	<i>Piper cubeba</i> Linn.f.	Piperaceae	Fruit
24	Ballataka	<i>Semicarpus anacardium</i>	Anacardaceae	Fruit
	Chitraka	<i>Plumbago zeylanica</i>	Plumbaginaceae	Roots
25	Sunti	<i>Zingiber officinale</i>	Zingiberaceae	Roots
	Adraka	<i>Zingiber officinale</i>	Zingiberaceae	Roots
26	Bilva	<i>Aegle marmelos</i> 6	Rutaceae	Panchanga
	Kapitta	<i>Feronia elephantalia</i>	Rutaceae	Panchanga

Table 1: Botanical Names.

The details furnished here are compiled properly and made into table form after referring well in all available reference books to avoid controversy.

Results and Discussion

As the main requirement for an appropriate Pratinidhi Dravya is to possess similar gunas to that of original drug, the Abhava Pratinidhi dravyas were compared on basis of their Rasapanchak i.e. Guna (properties), Rasa (taste), Vipaka (post digestion and metabolism effect), Veerya (potency) along with Karma (actions) and Roghaghna (Indications). Among all categories of Pratinidhi Dravyas, 26 drugs showed similar medicinal part used and drugs with different medicinal part used. In most of examples Pratinidhi dravyas showed similarities in rasapanchak, actions and indications were observed. The most important criteria of Pratinidhi seem to be similarity in Indications, Pharmaco-Therapeutic uses.

Conclusion

While preparing a formulation, substitution is only applicable for secondary ingredient and not for the main ingredient. The mentioned instances serves only as a guideline, author has encouraged inclusion of newer substitute with proper logic and reasoning to select a substitute and any drug not suitable therapeutically should be excluded.

To select a proper substitute one has to not only seek overall Guna (Rasapanchak) similarities, but also test its

therapeutic efficacy clinically [7]. To assess drug on physico-chemical and clinical similarities requires further research.

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