

CONTROVERSY IN MEDICINAL PLANTS: A REVIEW

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ABSTRACT

Controversy is a state of prolonged public dispute or debate, usually concerning a matter of conflicting opinion or point of view. Controversial plants or *Sandigdhadrayas* is a term used for medicinal plants having controversial botanicals as sources; appear in the Ancient Indian Literature. There are several reasons for the existence of controversy in Medicinal Plants. It has become an important task to generate parameters of identification among different plant sources having similar name. Since herbal products are prepared using plants known for specific activity, the controversial source sometimes lead to inefficacious preparation. The problem of controversial drugs requires tackling from several angles such as literary, pharmacognostical, pharmacological & clinical apart from collecting relevant data from field study. Now it is up to the younger generation to carry on this work further utilising all the available scientific methodology & techniques to arrive at a rational conclusion about identity of controversial drugs. It is not a question of which is the correct botanical source of a drug but which is more potent in curing a disease. Genuine research work should be carried out by all means for solving this controversy.

Keywords: Controversy, *Sandigdhadrayas*, Pharmacognostical, Pharmacological

INTRODUCTION

Controversy is attached with the historical events, since the past happenings are to be assessed on the basis of existing evidences. Many times these evidences are incomplete which gives rise to scope for suspicion & doubt. Irrespective of modern perspective, Ayurvedic

textual descriptions should be considered as the evidence document whenever an attempt is made to clarify about a controversial herb.¹

A very serious drawback of the Ayurvedic system at present is the difficulty in identifying the genuine medicinal herbs prescribed by the

founders of the system. In Ayurvedic Sanskrit literature, medicinal plants are not described with scientific precision. To determine the botanical identity of the raw drugs mentioned in ancient Sanskrit texts is not at all easy. Unlike modern botany, there are no definite rules of nomenclature in Ayurveda. As a result, each drug plant is known by several names.

Moreover, the same synonyms may be given to more than one plant, causing confusion in identifying the genuine plant. This confusion is compounded by the lack of a technically precise description of the complete plant. Any attempts for the standardization & quality control of medicines will be an exercise in futility until the genuine drug plants are botanically identified beyond all doubts & such plants alone are used to prepare the medicines.

DEFINITION: SANDHIGDHA DRAVYAS

The word controversy was coined from the Latin word *controversia* – "turned in an opposite direction," from *contra* – "against" and *vertere* – to turn, or *versus* hence, "to turn against." Controversy is a state of prolonged public dispute or debate, usually concerning a matter of conflicting opinion or point of view. Controversial plants or *Sandigdhadrayas* is a term used for medicinal plants having controversial botanicals as sources; appear in the Ancient Indian Literature. Quantum of information gained from Ayurvedic & other Sanskrit literature revealed various incidences where one common name is used for two or more entirely different plant species in traditional system of Medicines.²

REASONS FOR CONTROVERSY³

1. Disruption in traditional teaching & training
2. Non availability of raw-materials
3. Unwanted dependency over substitutes.
4. Same synonyms for different plants.
5. Documentation defects in the manuscripts
6. Fake-vaidyas allowed to identify herbs

1. Disruption in traditional teaching & training

Knowledge on traditional medicine descended from teacher to student through direct teaching & training modules. In ancient times there was no specific system of morphological description of plants as done now a days. The main reason of not going into details in this regard has been their close contact with plants growing in the surroundings, thus not necessitating other means of identification.

During Vedic period, each drug was given a single name and the names were coined mostly based on the morphological characters & utility of the drug. In Post Vedic period the teaching method was *Gurukulaparampara* in which the guru recites the teaching and disciples hear and they started giving more names which include the local names, names based on their utility in therapeutics, place of origin etc.

Even the commentators compiled the materials from more than one source and they described a single *Dravya* with many names & different *Dravya* under one name, gradually such names became additional names and are known as *Paryayanama* or synonyms. All this leads to confusion & controversy in the proper identification of *Dravyas*.

2. Non availability of raw-material

It is mainly due to geographical variations & urbanization. As a result of geographical variations, drugs available in ancient times are not available at present.

Eg: *Somalatha*, there is reference about Soma plant in *Rigveda* & *Vishnu Purana*. But there is no description about the features of the plant. In *Susrutha Samhita Chikitsa Stana*, there is reference about 24 types of Soma Plant. In all varieties of Soma plant there is 15 leaves, these spring up in *Suklapaksha* & fall off in *Krishna Paksha*; one leaf develops on every day of *Suklapaksha* & on the full moon day it has 15 leaves; thereafter one leaf fall off every day & at the end of *Krishna Pakshait* becomes a creeper only (without leaves).

Now the available botanical sources of Soma plant are *Ephedragardiana*, *Sarcostemmaacidum*, *Cerophagiabulbosa*, but these plants are not having any such characters. Urbanization results in deforestation which in turn results in the disappearance of several plant species. Eg: *Pushkaramula* is identified with *Kushta*. Because of these reasons; the genuine drugs used by our *Acharyas* are not available. As a result, physicians are compelled to take which ever available drugs having almost similar pharmacological properties. This led to the origin of substitutes as well as controversies

3. Unwanted dependency over substitutes

Sometimes certain substitutes were available easily for the *Vaidyas* which enabled them to accept these substitutes for original herbs. Several plants in use today are substitutes for the genuine ones. Over a period of time *Vaidyas* forget the original source &

started claiming the substitutes as original. Even though the main source is available, there is more dependence on substitutes, may be because of the reasons like laziness & unawareness of the drug collector

4. Same synonyms for different plants

Synonyms play an important role in identification of a drug. Eg: *Guduchi* is having synonyms like *Chakralakshanika*, *Chinna*, *Chinnaruha*, *Tantrini* all these helps in the proper identification of the *Dravya*. More the number of synonyms help in easy identification of the *Dravya*. But in our *Sastra*, the same synonym which is used for one drug is used as a synonym for another drug also like: *Haimavathi* for *Vacha*, *Haritaki*; *Madhuparni* for *Guduchi*, *Gambhari*, *Amritha* for *Haritaki*, *Guduchi*.

If the commentators have made it more clear like which drug is to use in that particular context, like in case of mentioning of synonyms like *Amrita*, if they specify to use *Haritaki* or *Guduchi*, then such controversy would not arise. When we go through the commentaries, in some place they made it more clear & in certain other context, they failed to do it. In such cases, analysing the pharmacological properties will be the only option. So a synonym has its own merits & demerits.

A name like *Bahukantaka* can indicate any spiny plant, just as *Swarnakshiri* can be any plant with yellow latex or sap. A plant can be wrongly called *Peethapushpi* just because it has yellow flowers. A synonym like *Palamkasa* which is common for *Guggulu* as well as *Goksura* may not cause any controversy/confusion since they can be identified on the basis of the context in which *Palamkasa* is mentioned.

5.Documentation defects in the manuscripts

The copy-writers of manuscripts have made colossal mistakes which played a prominent part in making many plants controversial. There was no printing press. They had written either on *Boorja* or *Taalapatras*. Men were entrusted to copy these writings & it is they who have made many mistakes.

For Example: *Taalavriksha* of *Dhanwan-tariNigahntu* has become *Latavriksha* in *Nighandusesha*.

धन्वन्तरिनिघण्टु

नारिकेलोरसफलः : कूर्चशेखरः

तालवृक्षोद्दृढफलोलाङ्गलीदक्षिणात्यः :

निघण्टुशेष- टी

: कूर्चकेसरः

लतावृक्षोद्दृढफलोलाङ्गलीदक्षिणात्यः :

This lead to controversy of many Medicinal Plants

6. Fake-Vaidyas allowed to identify herbs

Over a period of time fake-Vaidyas (which does not have real traditional knowledge) were allowed as authors & teachers of ayurveda which resulted in controversial herbs. Some books on Medicinal Plants were written by amateur Vaidyas who does not have field knowledge nor botanical knowledge, when these text books were taken for reference, it leads to wrong identification of many drugs. This humiliates the knowledge of many scholarly Ayurvedic Physicians.

RELEVANCE OF CONTROVERSY IN PRESENT ERA

It has become an important task to generate parameters of identification among different plant sources having similar name. Since herbal products are prepared using plants known for specific activity, the controversial source sometimes lead to inefficacious preparation. The increased demand & reduced availability has reportedly led to even adulterations of many plant based formulations.⁴

RASNA: A CONTROVERSIAL MEDICINAL PLANT

There are many controversial medicinal plants but here only one important medicinal plant which is having different controversial botanical sources is discussed below:

Rasna is another important drug having different botanical sources & used in the preparations like: *Rasnadhikasayam*, *RasnadhiChurna*, *Rasnadhitailam*, *Aswagandarishtam*, *Devadarvyarishtam*, *Karpasthyadhitailam* & *Kasayas* like *Rasnaerandadhi*, *RasnaSaptakam*, *RasnaPanchakam* etc.⁵

Rasna plant is praised for its *Kapha Vata hara* property & also used for *Sotha* etc diseases.

रास्नायुक्तरसारस्यासुवहारसनारसा।

एलापर्णीचिसुरसासुगन्धाश्रेयसीतथा॥⁶

Except for the mention that the plant has got leaves which resemble those of *Ela* (*Elettariacardomomum*) (*Elaparni*) & that it has got fragrant tubers (*Sugandha*, *Suvaha*), the ancient texts do not lend any assistance in finding out the accurate identity of the plant source & consequently, there is great confusion with regard to the identity of the drug. While

analysing the different properties of *Rasna* like *Elaparni*, *Sugandha*, *Suvaha* etc, definitely we will go behind many plants having these properties.

A number of widely different plants are equated with it by different people. The application of names such as *Suganda* to more than one drug has further deepened the dispute. The text like Indian Medicinal Plants, Wealth of India, & Materia Medica considered a drug with Sanskrit name *Kulanjana* as *Alpiniagalanga*. But *Raja Nighantu*, *Bhavaprakasha Nighantu*, & *Nighantu Ratnakara* considers *Rasna* & *Kulanjana* as two different plants with different therapeutic properties.

Raja Nighantu mentions three types of *Rasna*, namely *Moolarasna* (*Rauwolfiaserpentina*), *Patrarasna* (*Lochnerarosea*), *Trinarasna* (*Vanda roxburghii*). *Charaka*, *Susrutha* & *Vagbhata* do not make any mention of such a distinction. Ayurvedic formulary of India & API suggests *Pluchea lanceolata* as the real *Rasna*⁷ & *Alpiniagalanga* as the substitute. Studies on the market samples reveal that the two types of *Rasna* are sold in South Indian markets. One with light brown colour & aro-

matic odour identified as the rhizomes of *Alpiniacalcarata*, locally called *peraratta*. The other less aromatic, *Alpiniagalanga*, known as *cittaratta* or *aratta* in Malayalam.

At present, the following plants are being used as *Rasna* in different parts of India:⁸

1. *Vandatessellata* (*Vanda roxburghii*) (Orchidaceae)- Bengal
2. *Alpiniagalanga* (Scitamineae)- Kerala
3. *Alpiniacalcarata* (Scitamineae) -Kerala
4. *Pluchea lanceolata* (Asteraceae)- North India
5. *Viscum album* (Loranthaceae)- Kashmir, Nepal
6. *Withaniacoagulens* (Solanaceae)- Punjab
7. *Aristolochia indica* (Aristolochiaceae)- Bombay
8. *Inularacemosa* (Asteraceae)- Kashmir
9. *Rauwolfiaserpentina* (Apocynaceae)- Throughout India
10. *Lochnerarosea* (Apocynaceae)- Throughout India
11. *Enicostemalittorale* (Gentianaceae)- Throughout India

Figure1: Different Botanical Sources of *Rasna*



1. *Vanda tessellate*



2. *Alpinia galanga*



3. *Alpinia calcarata*



4. *Pluchea lanceolata*



5. *Viscum album*



6. *Withania coagulans*



7. *Aristolochia indica*



8. *Inula racemosa*



9. *Rauwolfia serpentine*



10. *Lochnera rosea*



11. *Enicostema littorale*

DISCUSSION

Plant-based medicines form a very important component of total medicines available for treating various human & veterinary diseases. This requires genuine coordinated & focused research on these aspects of medicinal value of all the plants & their actual uses so that the medicinal value of all the plants can be scientifically verified along with the documentation of traditional knowledge. The problem of controversial drugs requires tackling from several angles such as literary, pharmacognostical, pharmacological & clinical apart from collecting relevant data from field study.

To solve the problem of non-availability of drugs, the only option is the use of substitutes. If the original manuscripts are available, we can make use of it & upto a certain extent can clarify the documentation defects. Though we

consider more number of synonyms as the most common factor for controversial herbs, but actually the synonyms several times help in the removal of controversy on a herb. In case of same synonyms the context should be analysed thoroughly & pharmacological properties should be analysed & as per the *Yukthi* of the *Vaidya* the drug can be chosen. Till now API has conducted several researches & considered one botanical source as the accepted. But in case of controversial drug we are not considering the API as the standard.

Now it is up to the younger generation to carry on this work further utilising all the available scientific methodology & techniques to arrive at a rational conclusion about identity of controversial drugs. This can be achieved by more comparative experimental & clinical research

works between the different botanical sources of the controversial drugs.

CONCLUSION

We must emphasize the need for an objective research on the plants mentioned in the Ayurvedic classical literature to link their description to the correct botanical sources, applying the principles of *Namajnana*, *Roopajnana*, *Yuktijnana* etc., and study their pharmacognosy, pharmacology and clinical aspects. Several comparative studies are conducted between the different botanical sources, but many are not published, so it is a hindrance in solving the controversy. Genuine research work should be carried out by all means for solving this controversy, so that all the physicians should be able to use a single plant source as the standard.

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