



UNIQUE JOURNAL OF AYURVEDIC AND HERBAL MEDICINES

Available online: www.ujconline.net

Review Article

SYNONYMS BASED ON DISEASE IN RAJA NIGHANTU

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Received 09-09-2013; Revised 08-10-2013; Accepted 06-11-2013

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ABSTRACT

Raja nighantu is one of the noted lexicon in Dravyaguna. The name Raja nighantu itself reveals that it is the king of nighantus. Narahari pandita is the author of this nighantu who is the son of Iswara suri. There is controversy with regards to time period of Rajanighantu which ranges between 13th century to 17th century. It is also called as “Abhidana chudamani”, “Dravyabhdanagana sangraha”. He is the first author to place Dravyaguna ahead among Astangas of Ayurveda. In Raja nighantu, the concept of coining of synonyms for a particular drug was explained elaborately. He has given much importance for nomenclature of plants for which seven factors have been described as rudhi, swabhava, desha, lanchana, upama, virya, itarahwaya. He has described about the drugs in 23 vargas. He has given many synonyms than any other author to drugs based on different criteria like desa, swabhava etc. These synonyms are coined based on sound scientific principles which help us to gain good knowledge regarding the etymology, place of origin, the properties or nature of drug etc. when we study the synonyms of herbs one of the criteria we can find is disease based synonyms like sophagni for Punarnava, kustari for Arka etc. These synonyms give us specific idea about the usefulness of a drug in a particular disease. In the present work small attempt has been made to prove the preciseness of the author in coining the synonyms based on disease in the light of modern pharmacological and clinical research on different drugs.

Keywords: Dravyaguna, Ayurveda, Nighantu, Pharmacological Activity.

INTRODUCTION

Raja nighantu is one of the famous works in the field of Dravyaguna. The name itself reveals that it is the king of nighantus. Narahari pandita is the author of this nighantu who is the son of Iswara suri. There is no common opinion with regards to time period of Rajanighantu between Ayurvedic scholars and historians who placed the work between 13th century to 17th century. It is also called as “Abhidana chudamani”, “Dravyabhdanagana sangraha”. He is the first to place Dravyaguna ahead among astangas of Ayurveda. In Raja nighantu, much importance has been given for nomenclature of plants for which seven factors have been described

नामानि क्वचिदिह रुढितः स्वभावात् देशयोक्त्या क्वचन च लाञ्छनोपमाभ्याम् ।

वीर्येण क्वचिदितराहयादिदेशात् द्रव्याणां ध्रुवमिति समधोदितानि ।

Ra.Ni/13

1. Rudhi: Here the names have no specific meaning but are used traditionally in certain areas.

2. Swabhava: In this the names are given to herbs on the basis of their natural properties like usna, sita, laghu, guru etc

3. Desha: Certain names are given according to the place of availability/local names.

4. Lanchana: Some herbs are named on the basis of the special morphological characters e.g., Chitratandula (Vidanga), RajiPhala (Patola), Koshataki etc

5. Upama: Certain names are coined as per the similarity of useful part to other familiar objects or animals etc. e.g., Kuliravishana (Karkata Sringi), Panchangula (Eranda), Varahikanda etc.

6. Virya: Some names of the herbs will indicate the potency of the herbs e.g., Ushna (Maricha), Ooshana (Sunthi) etc.

7. Itarahvaya: Names prevalent in other regions or based on other factors. e.g., Indrayava, Analanama

Narahari has classified drugs based on karma or guna sadharmya. He has classified drugs into 23 vargas among which 780 vegetable drugs are described in 10 vargas. The 23 vargas are as follows:

1. Anupadi
2. Dharanyadi

3. Guduchyadi: Mostly creepers are described
4. Shatahvadi: Small plants are described
5. Parpatadi: Small plants are described
6. Pippalyadi: Drugs which are spicy in nature are mentioned
7. Mulakadi: Mostly vegetables are described
8. Shalmalyadi: Plants which are thony, grasses are described.
9. Prabhadradi: Trees are described.
10. Karaviradi: Flowering plants are described.
11. Aamradi: Fruits are grouped in this chapter.
12. Chandanadi: All aromatics plants have been grouped in this chapter
13. Swarnadi: Metals and minerals have been discussed under this heading
14. Paniyadi: Water and other drava padarthas have been discussed

15. Ksheeradi: Milk and related products like dadhi, takra etc have been mentioned.
16. Shaalyadi: Different types of dhanya like suka, simbi etc are described.
17. Mamsa: Different types of mamsa their properties have been described
18. Manushyadi
19. Simhadi
20. Raugadi
21. Satvadi
22. Mishrakadi
23. Ekarthadi

He has given many synonyms to the herbs based on different factors like desa, karma, virya, prabhava etc. One among the criteria is synonyms based on diseases. Here is the list of few synonyms which are coined based on the action of a herb on particular disease.

Sl. No	Herb	Synonym
1.	Ajasrungi	Chaksusya
2.	Arka	Kustari
3.	Amlavetasa	Gulmaketu
4.	Amalaki	Vayastha
5.	Aragwada	Kandugna, jwarantaka, kustagadam
6.	Aparajita	Visahantri
7.	Bhallataka	Krimigna
8.	Bijapura	Jhantugna
9.	Bharngi	Kesajit
10.	Chakramarda	Dadrugna
11.	Ela (Brihat)	Garbha sambhava
12.	Ela (Laghu)	Garbhari
13.	Guduchi	Jwarari
14.	Hingu	Soola, jhantunasaka, gulmadhigna
15.	Haridra	Vishagni
16.	Ingudi	Soolari
17.	Indravaruni	Vishapaha
18.	Jimutaki	Visagni
19.	Jyotishmati	Medhya
20.	Kakamachi	Kustanasini
21.	Kasamarda	Kasari
22.	Katuki	Amagni
23.	Kakodumbahara	Kushtagni
24.	Krisnaguru	Kesya
25.	Kusta	Twagdosa
26.	Kutaja	Samgrahi
27.	Lajjalu	Gandamalika
28.	Manjista	Jwarahantri
29.	Nimbuka	Jantumari
30.	Nirvisa	Visahantri
31.	Pashanabheda	Asmagna, asmabhedaka
32.	Patola	Kustari, kusthagna, kasamardan
33.	Parpata	Trishnari
34.	Pippali	Smruthyahwa
35.	Puskaramoola	Swasari
36.	Paribhadra	Krimigna
37.	Rakta punarnava	Sophagni
38.	Saliparni	Sophagni

39.	Sallaki	Hrudya
40.	Sirisha	Visahanti
41.	Somaraji	Kushtahantri
42.	Syajeera	Dantasodhini
43.	Sigru	Upadamsa
44.	Surana	Arshogna
45.	Twak	Mukha sodhana
46.	Varahikanda	Kustanasana
47.	Vana tulasi	Sophari
48.	Vibhitaka	Kasagna
49.	Vidanga	Krimigna, Jhantuhantri, Jhanthugni
50.	Yavani	Soolahantri

DISCUSSION

The concept of coining of synonyms for a particular drug was explained first in Raja nighantu and this naming has sound scientific background. He is the first one who has given 7 basic guidelines for nomenclature. These synonyms which are named based on disease could have been coined with their clinical knowledge. But with the advances in the scientific world now we can revalidate our age old science. Here are the data which is being carried out round the world.

1. Bhallataka (*Semecarpus anacardium*):

Antimicrobial property: Aqueous and organic solvent extracts of the plant *S. anacardium* were screened for antimicrobial (disc diffusion method) properties. The petroleum ether (PEE) and aqueous extract fractions (AQE) showed inhibitory activity against *Staphylococcus aureus* (10 mm) and *Shigella flexneri* (16 mm) at 100 mg/ml, respectively. While chloroform extract showed inhibition against *Bacillus licheniformis*, *Vibrio cholerae* and *Pseudomonas aeruginosa*. The ethanol extract showed inhibition to *Pseudomonas aeruginosa* and *S. aureus*¹.

2. Hingu (*Ferula asafoetida*):

Antispasmodic: The effects of *Ferula asafoetida* gum extract on the contractile responses of the isolated guinea-pig ileum induced by acetylcholine, histamine and KCl, and on the mean arterial blood pressure of rat were investigated. In the presence of extract (3 mg/ml), the average amplitude of spontaneous contractions of the isolated guinea-pig ileum was decreased to 54 +/- 7% of control. Exposure of the precontracted ileum by acetylcholine (10 microM) to *Ferula asafoetida* gum extract caused relaxation in a concentration-dependent manner.²

Anthelmintic activity: Aqueous extracts from the *Ferula asafoetida* resin was investigated for its anthelmintic activity against *Pheretima posthuma*. Three concentrations (25, 50 and 100 mg/mL) of extract were studied in activity, which involved the determination of time of paralysis and time of death of the worm. Results: The extract has exhibited significant anti-helmintic activity at the highest concentration of 100 mg/mL. based on which it was concluded that the plant revealed significant anthelmintic activity³.

Antitumor: In a study both aqueous and alcoholic extracts of spices (asafoetida, ginger, cinnamon and cardamom) showed significant activity as cytotoxicity agents for tumor cells. A significant decrease in MCF and HEP-G2 cell population by crude extract was observed. Among the spices assayed for

their chemopreventive potential, Asafoetida extract has shown the maximum inhibitory effect while cinnamon extracts showed minimum yet significant inhibitory action. Therefore, these spices might be used for natural healing of the tumor⁴.

3. Jyotismati (*Celastrus paniculatus*):

Learning and memory: The effect of *Celastrus paniculatus* Willd. (Celastraceae) seed aqueous extract on learning and memory was studied using elevated plus maze and passive avoidance test (sodium nitrite induced amnesia rodent model). The aqueous seed extract was administered orally in two different doses to rats (350 and 1050 mg/kg) and to mice (500 and 1500 mg/kg). The results were compared to piracetam (100 mg/kg, p.o.) used as a standard drug. Chemical hypoxia was induced by subcutaneous administration of sodium nitrite (35 mg/kg), immediately after acquisition training. In elevated plus maze and sodium nitrite-induced amnesia model, *Celastrus paniculatus* extract has showed statistically significant improvement in memory process when compared to control. The estimation of acetylcholinesterase enzyme in rat brain supports the plus maze and passive avoidance test by reducing acetylcholinesterase activity which helps in memory performance. The study reveals that the aqueous extract of *Celastrus paniculatus* seed has dose-dependent cholinergic activity, thereby improving memory performance. The mechanism by which *Celastrus paniculatus* enhances cognition may be due to increased acetylcholine level in rat brain⁵.

4. Kutaja (*Holarrhena antidysenterica*):

Antidysenteric: The alkaloids from the ethanolic extract of *H. antidysenterica* seeds were evaluated for their antibacterial activity against clinical isolates of enteropathogenic *Escherichia coli* (EPEC) in vitro, and their antidiarrhoeal activity on castor oil-induced diarrhoea in rats, in vivo. In castor oil-induced diarrhoea, alkaloids reduced the diarrhoea with decrease in the number of wet faeces in pretreated rats at a dose of 200-800 mg/kg. The loss of plasmid DNA and suppression of high molecular weight proteins were observed on alkaloids treatment. Taking into account the multiple antibiotic resistance of EPEC, the results suggest usefulness of alkaloids of *H. antidysenterica* seeds as antibacterial and antidiarrhoeal agents⁶.

5. Vidanga (*Embelia ribes*):

Antimicrobial: The ethanolic extract of the seeds of *Embelia ribes* was evaluated for its anthelmintic efficacy in vitro. Graded doses of the extract (10,50,100,200 µg/mL) showed

significant anthelmintic activity, with their sensitivity when compared with the standard. Ivermectin and levamisole were used as reference drugs⁷.

Antibacterial activity: The antibacterial activity of aqueous and ethanolic extracts of this plant was determined by disc diffusion and broth dilution techniques against gram-positive bacterial strains (*Bacillus subtilis*, *Staphylococcus aureus*) and gram-negative bacterial strains (*Escherichia coli*, *Pseudomonas aeruginosa*). Results revealed that the aqueous and ethanol extracts of *Embelia ribes* exhibited significant antibacterial activity against gram-positive and gram-negative strains with minimum inhibitory concentration (MIC) ranging from 1.5 to 100 mg/ml. The most susceptible organism to the ethanolic extract was *B. subtilis* and *P. aeruginosa*. The presence of phytochemicals such as alkaloids, tannins, triterpenoids, steroids and glycosides in the extracts of this plant supports their traditional uses as medicinal plants for the treatment of various ailments⁸.

6. *Vibhitaki (Terminalia bellarica):*

Respiratory disorders: In an open clinical trial of 93 patients suffering from various respiratory conditions *Bibhitaki* was found to have anti-asthmatic, anti-spasmodic, expectorant and anti-tussive activities (Trivedi et al 1979).

Bronchoconstriction was induced with carbachol (CCh 1M/kg), which was reversed within 7–10 min. The test drug was given to the animals 5–8 min prior to administration of CCh. The responses were expressed as the per cent reduction of the CCh-induced bronchospasm⁹.

7. *Yavani (Carum copticum):*

Antispasmodic: In a *in vitro* study showed the antispasmodic and broncho-dilating actions where the calcium channel blockade has been found to mediate the spasmolytic effects of plant materials and it is being considered that this mechanism contributed to their observed result and supported the traditional use of *Carum copticum* in hyperactive disease states of the gut such as colic and diarrhea as well as in hypertension¹⁰.

8. *Paribhadra (Erythrina indica):*

Anthelmintic property: Ethanol, chloroform and ethyl acetate extracts of leaves of *Erythrina indica* (EI) were studied for its anthelmintic property against *Pheritima Posthuma*. The activity was assessed by the determination of time of paralysis and time of death of earth worms. Piperazine citrate (10mg/kg) was included as standard. All the three extracts exhibited good anthelmintic activity¹¹.

9. Pippali (Piper Longum): *Pippali* extract was used for the evaluation of cognitive enhancing activity using elevated plus maze and passive avoidance task methods using Donepezil as standard by using the parameters of step down and transfer latency. Induction was carried out by Diazepam for 7 days. Alcoholic extract showed significant effect when compared to control, there was significant increase in the step down latency and decrease in the transfer latency which was as effective as that of standard drug¹².

10. *Aragwada (Cassia fistula):*

Antipyretic activity: In a study the methanol extract of buds of *C. fistula* for its antipyretic action on normal body temperature and yeast-induced pyrexia (fever) in rats was

examined. The extract showed significant activity in both the models at doses of 200 and 400 mg/kg. At a dose level of 200 mg/kg, the extract caused significant lowering of normal body temperature up to 3 h. At 400 mg/kg dose, it caused significant lowering of body temperature up to 6 h after administration. In the model of yeast-provoked elevation of body temperature, the extract showed dose dependent lowering of body temperature up to 4 h at both the dosage levels. The results obtained are comparable to those for paracetamol, a standard antipyretic agent¹³.

Kusta and kandu mentioned in Ayurvedic literature can be ascribed to different forms of bacterial and fungal infections which manifest in different forms of cutaneous infections. Different studies have proved its antibacterial and antifungal activity of *Aragwada*.

R. N. Yadav et al. (2003) isolated compound which showed antimicrobial activity against *Staphylococcus aureus*, *Bacillus subtilis*, *Klebsiella pneumoniae*, *Escherichia coli*, *Aspergillus niger* and *Fusarium oxysporum*.

M. A. Ali et al. (2004) reported that the antibacterial and antifungal activity of *C. fistula* and *M. ferrea* extracts was tested on 14 bacteria and 6 fungi. *C. fistula* extracts showed stronger antibacterial activity than *M. ferrea*¹³.

11. *Guduchi (Tinospora cordifolia):*

Antipyretic activity: A study on *Guduchi ghrita* showed that the *Guduchi ghrita* formulation is having significant antipyretic activity¹⁴.

In another study the water-soluble fraction of 95% ethanolic extract, hexane- and chloroform-soluble portions of *T. cordifolia* plant has shown significant antipyretic activity¹⁵.

12. *Kasamarda (Cassia occidentalis):*

Mast cell stabilizing activity: In the present study anti-allergic activity of *C. occidentalis* whole plant ethanolic extract (CO) was investigated. Effects of CO on rat mast cell degranulation inhibition and human red blood cell (HRBC) membrane stabilization were studied *in vitro* following standard methods. Results of the present study indicated that CO inhibited mast cell degranulation, stabilized HRBC membrane thereby alleviating immediate hypersensitivity besides showing anti oxidant activity¹⁶.

13. *Manjistha (Rubia cordifolia):*

Anti-pyretic activity: Compound separated from the petroleum ether extract of *Rubia cordifolia* Linn. roots showed anti-pyretic activity in Brewer's yeast saline induced hyperpyrexia in rats¹⁷.

14. *Pippali (Piper longum):*

Cognitive enhancing effect: In a study by Wattanathom et al., 2008 administered piperine to Wistar male rats, at various doses ranging from 5, 10 and 20 mg/kg/day, body wt, (p.o.) for 4 weeks and the neuropharmacological activity (elevated plus maze, spontaneous locomotor behavior, forced swimming test, cognitive function) was determined after single, 1, 2, 3, and 4 weeks of treatment. The results showed that piperine during entire dosage range possessed anti-depression like activity and cognitive enhancing effect during entire treatment duration¹⁸.

15. *Puskaramoola (Inula recemosa):*

Anti asthmatic activity: In a study Petroleum ether (60-80°), ethanol (95%), water extract of air dried roots of *Inula*

racemosa obtained by successive extraction. Petroleum ether extract (PEEIR) at a dose of 4 mg/ml (55.41±3.04) and 10 mg/ml (48.87±1.36) exert significant antagonistic effect (p<0.05) on histamine induced (1.6µg/ml) contraction as compared to its ethanol and water extract. Crude extracts tested for direct antihistaminic activity in vitro using isolated goat tracheal chain preparation, dose relative (0.1-1.6µg/ml) contractile response of histamine using goat tracheal chain preparation demonstrates the sensitivity of histamine H1 receptors present and potentiates its utility for screening the direct antihistaminic action of different extracts under investigation for their claim in asthma treatment¹⁹.

16. Punarnava (*Boerhaavia diffusa*):

Diuretic activity: The roots and leaves of *Boerhaavia diffusa* were used in ayurveda as a diuretic. Aqueous extract of *Boerhaavia diffusa* was administered to experimental rats orally at the doses of 300mg/kg, frusemide 10mg / kg was used as a standard. Normal saline 25ml / kg was used as a control in study. The diuretic effect of the extract was evaluated by measuring urine volume, sodium, potassium and chloride content by electrolyte analyzer. Urine volume was significantly (P < 0.0001) increased by aqueous extract in comparison to control group, excretion of Na, K & Cl was also significantly (P < 0.0001) increased. The diuretic effect of the extract was comparable to that of the reference standard. Aqueous extract of *Boerhaavia diffusa* produces a notable diuretic effect which appears to be comparable to that produced by reference diuretic frusemide. The study provides a quantitative basis for explaining the folkloric use of *Boerhaavia diffusa*²⁰.

17. Sallaki (*Boswellia serrata*):

Anti-atherosclerotic activity: It has also been reported that aqueous and hydroalcoholic extracts of BS gum resin exhibits anti-thrombotic, anti-oxidant, anti-platelet and anti-coagulant activities which are beneficial in the prevention of thrombus formation and coronary atherosclerosis. An *in-vivo* and *in vitro* study on hypocholesterolemic activity revealed that water-soluble fraction of the oleo-gum-resin of BS extract inhibits the lipopolysaccharide-induced nitric oxide (NO) production and an increase in serum HDL level in rat macrophages²¹.

18. Patola (*Trichosanthes dioica*): Bhujbal (1999) showed that polyherbal formulation including *T. dioica* is useful in skin disorder. Fifty cases of various skin diseases were treated with decoction of a mixture of *Trichosanthes* & other herbal crude drugs in a dose of 20ml to 40 ml empty stomach with hot water & honey for 4 to 6 weeks. The drug was found to be useful and no side effect was observed²².

In a study fifty cases of various skin diseases were treated with *Patoladi kvatha* (decoction of a mixture of *Trichosanthes dioica*, *Citrullus colocynthis*, *Gentiana kurroo*, *Terminalia chebula*, *Terminalia belerica*, *Emblica officinalis*, *Picrorhiza kurroa* and *Zingiber officinale*) in a dose of 20 to 40 rnl empty stomach with hot water and honey for 4 to 6 weeks. The drug was found to be useful in all the patients and no side effects were observed.

In another investigation a compound preparation, *Panchatikadi kashaya yoga* (containing *T.dioica* as one of the constituents), was administered internally and *Nalapamaradi*

taila applied externally in 80 patients of skin diseases. Patients showed good response. *Patolatripthaladi yoga*, a compound herbal preparation containing *Patola* as one the ingredients, was also found useful in skin diseases²³.

19. Shaliparni (*Desmodium gangeticum*):

Anti-inflammatory activity: Aqueous decoction (5, 10 and 20 mg/kg) of roots and aerial parts of *D. gangeticum* showed anti-inflammatory activity in-vivo in dose-dependent manner. The inhibition of swelling caused by carrageenan was equivalent to 14.58–51.02 % protection and in cotton pellet granuloma the protection was observed up to 14.43–38.67 %.

Juice of whole plant of *D. gangeticum* posses anti-rheumatic and anti-osteo arthritic activity via anti-inflammatory activity. The activity might be associated with several phytoconstituents like polyphenolics, pterocarpinoid (gangetin).

Gangetin, a pterocarpen, isolated from n-hexane extract of root of *D. gangeticum* showed significant anti-inflammatory activity in both exudative and proliferative phases of inflammation in rat model at dose of 50 and 100 mg/kg body weight²⁴.

CONCLUSION

This is a small attempt made to interpret the disease based synonyms of the herbs based on present scientific research data which provides scientific principles behind the nomenclature of herbs by our Acharyas. Though a lot of synonyms can't be explained as of now but they provide new hints which will help for further research in new directions.

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Source of support: Nil, Conflict of interest: None Declared