

Journal of Pharmaceutical and Scientific Innovation

www.jpsionline.com (ISSN: 2277-4572)

Review Article

A REVIEW ON ANTIDOTES WITH SPECIAL REFERENCE TO BASAVARAJEEYAM

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DOI: 10.7897/2277-4572.07492

Received on: 20/06/18 Revised on: 15/07/18 Accepted on: 18/07/18

ABSTRACT

Ayurveda, the ancient Indian bioscience depicts all the aspects of a healthy living. Entire concepts of Ayurveda were branched out into 8. Agada tantra is one among the 8 branches of *Ayurveda* which deals with treatment of diseases caused by plant and animal poisons substances, toxic food, poisonous metals & minerals. Specific antidotes were prescribed in Ayurvedic texts for nullifying poisonous effects. Poison is a substance taken in or formed in the body that destroys life or impairs health. Chelation therapy is of the modern method used for removing of toxins from the body. Chelating agents which are used in chelation therapy have its own limitations and side effects. Basavarajeeyam is an important Ayurvedic textbook for physicians of Ayurveda. This text clearly mentioned about the different types of poisonous substances and its antidote in Visha Chikitisa (treatment of poison). This paper highlights different types of poisons and its antidotes mentioned in Visha Chikitsa of Basavarajeeyam textbook.

Keywords: Visha, Poison, Antidote, Basavarejeeyam, Agada tantra.

INTRODUCTION

Agada tantra branch of Ayurveda which deals with treatment of diseases caused by plant and animal poisons substances, toxic food, poisonous metals & minerals. Poison is a substance takes in or formed in the body that destroys life or impairs health. Poisoning may be caused by plant, animal substances or toxic food material, improperly cooked food substances, poisonous metals & minerals. Charaka opined that a deadly poison can become a very good medicine if it is administered properly even a medicine may become poison if administered improperly. Toxicity of substance depends on several factors including the dose, route of exposure, as well as the age, gender, and nutritional status of exposed. Chelation therapy is one of the modern procedures which are used for removal of poison from the body. Ayurveda has explained specific antidotes to nullify the action of poison.

Basavarajeeyam is a famous Ayurvedic treaty which is popularly used by many Ayurvedic physicians in Andhra and Telangana. In this book author has clearly mentioned about different poison and its antidotes in 23rd chapter of *"Visharoganidhanalakshana adhyaya"*.

The whole study is based on literary review illustrate specific antidotes of poisons substances according to literary review from classical textbook of Basavarajeeyam. Stimulate further research in this area, for new and improved antidotes.

Poison and Antidotes

The author Bhasavaraju while explaining about "*Visharoganidhanalakshana adhyaya*" 23rd chapter which explains about Visha Chikitsa he stated specific antidotes mentioned by various experts of this science are compiled and represented in this chapter.

Sl.no	Poison	Antidote
1.	Ankola (Alangium salvifolium), karaveera (Nerium indicum)	Hareetaki (Terminalia chebula)
2	Langali (Gloriosa superba)	Shunti (Zingiber officinale)
3	Bhallataka (Semecarpus anacardium)	Palasha pushpa (Butea monosperma)
4	Snuhi ksheera (Euphorbia neriifolia)	Avartaki (Cassia auriculata)
5	Vishamushti (Strychnos nuxvomica)	Jambu (Syzygium cumini), ketaki (Pandnus tectorus)
6	Karpoora	Bhringaraja (Eclipta alba)
7	Jambu phala (Syzygium cumini)	Cow's milk
8	Sarshapa (Brassica campestris)	Amalaki (Emblica officinalis)
9	Honey, ghee	Water
10	Tambula	Tintrini (Tamarind)
11	Bhallataka (Semecarpus anacardium)	Kapikacchu (Mucuna pruriens)
12	Dhattura (Datura metal)	Kamala (Nelumbo nucifera) choorna and Tandulodaka
13	Tintrini phala (Rhus parviflora)	Haridra (Curcuma longa)
14	Curd	Warm water

Table 1: List of poison and its specific antidotes¹

15	Amrasthi	Narikela water (coconut water)
16	Sudha (lime)	Guduchi (Tinospora cordifolia)
17	Tila pishta	Taila
18	Pruthuka (beaten rice)	Saindhava lavana
19	Trikatu	Tandulodaka (rice washed water)
20	Hayanaka	Chandana (Santalum album)
21	Trivrit (Operculina turpethum)	Babbula twak (Acacia nilotica)
22	Mudga (green gram)	Jaggery
23	Butter milk	Gambhari (Gmelina arborea)
24	Araganikudu	Mustard oil
25	Gingelly oil	Hingu (Ferula northax)
26	Ketaki (Pandnus tectorus), Koshataki (Luffa acutangula)	Mustaka (Cyperus rotundus)
27	Vatsanabha (Aconitum ferox)	Meghanada
28	Chetarasi	Viriginara
29	Soorana kanda	Tambula (Pipper beetle) patra
30	Panasa (jack fruit)	Shunti (Zingiber officinale)
31	Kanaka beeja	Nimbhu swarasa (Citrus medica), Jeeraka (Cuminum cyminum)
32	Nimba pala	Kharjoora (Phoenix sylvestris)
33	Haridra	Sudha (lime)
34	Narikela	Tandula
35	Sesame seed	Ketaki(Pandanus tectorius) swarasa
36	Arkaksheera	Neeli (Indigofera tinctoria) swarasa
37	Karpasa beeja	Pashana (Bergenia ligulata)
38	Ahiphena	Ardraka (Zingiber officinale) swarasa
39	Balurakkasi	Varuna (Crataeva religiosa)
40	Ghee	Buttermilk
41	Buttermilk	Kataka (Strychnos potatorum)

DISCUSSION

Poisoning is the situation which is experienced by the people since ancient time from day to day life which is causing serious aliments in life. In Ayurveda, poisoning can be treated by using antidotes. Antidotes are medications that limit the progression of adverse health outcomes that result from exposure to exogenous agents: drugs, metals, and toxins². Chelating agents which are used in chelation therapy have their own limitations and side effects. The survey documented pre-treatment efforts at symptom relief, post-treatment symptom impact, and the context for using the herbal intervention³. Antidotes exert effects by a variety of mechanisms, including forming an inert complex with the poison, accelerating detoxification of the poison, reducing the rate of conversion of the poison to a more toxic compound, competing with the poison for essential receptor sites, blocking essential receptors through which the toxic effects are mediated, and bypassing the effect of the poison⁴. The use of antidotes depends on the clinical indication and the availability of the product. Antidotes include plant, animal and mineral products, which are easily available. Most of antidotes mentioned in this text are plant products and animal products. Antidotes of plant products are mainly taken in form of Swarasa. Antidotes of animal products are mainly taken in form of milk.

Some of antidotes and its properties

Hareetaki (*Terminalia chebula*): It has Pancharasa (except lavana), Laghu, Ruksha Guna, Ushna Virya, Madhura Vipaka, Tridosahara, Rasayana, Hrdya⁵. *Terminalia chebula* has antibacterial, anti-viral, anti-mutagenic, anti-cancer, anti-oxidant, cytoprotective, act against anaphylactic shock, atherosclerosis, intoxication of cardiac tissue with arsenic, wound healing, anti-spasmodic, anti-diabetic, cardio tonic, nephroprotective⁶.

Haridra (curcuma longa): Curcuma longa has Katu, Tikta Rasa; Ruksha, Laghu Guna; Ushna Veerya; Katu Vipaka; Kusthaghna (relieving skin disease) and Vishaghna (antipoisonous) karma. It contains phyto-constituents like curcumin, curcuminoids etc. Haridra has pharmacological actions like anti-inflammatory, anti-oxidant, anti-bacterial, hepatoprotective, expectorant, anti-cancerous, anti-mutagenic, freeradical scavenging property⁷.

Hingu (Ferula northax): Hingu has Tikta, Katu Rasa; Tiksna, Laghu Guna; Ushna Veerya; Katu Vipaka; Pacana, Rucikara, Krimighna Karma. It is known to have anti-inflammatory, antiviral, anti-mutagenic, antifungal actions. It is used in the treatment of asthma, gastro-intestinal disorders, and intestinal parasites etc⁷.

Shunti (*Zingiber officinale*): It has Katu Rasa; Ruksha, Tiksna Guna, Ushna Veerya; Madhura Vipaka; Deepaniya, Kusthahara and Shoolaghna Karma. It has immune-modulatory, anti-tumorigenic, anti-inflammatory, anti-hyperglycemic actions⁷.

Avartaki *(Cassia auriculata):* It has Kasaya, Tikta Rasa; Sita Virya; Laghu, Ruksha Guna; Katu Vipaka; Kapha-Pitta Hara, Stambhana Karma⁸. It is known to have anti-diabetic, anti-mutagenic, anti-fertility property⁹.

Palasha pushpa *(Butea monosperma):* It has Katu, Tikta Kashaya Rasa; Svadu Paka; Vatala; Kaphapittasrajit (decreases imbalanced kapha, Pitta and Rakta); Mutrakrichrajit (urine retention), Grahi (absorption quality), Sheetala (coolant), Trut Daha Shamaka (relieve excessive thirst and burning sensation), Vataraktahara (useful in gout)¹⁰.

Jambu (*Syzygium cumini*): It has Kashaya, Madhura, Amla Rasa; Laghu Ruksha Guna; Sita Virya; Katu Vipaka; Vatavardhaka, Kapha-Pitta Hara, Grahi properties¹¹. It is known to have Antiemetic, Anti-haemorrhagic, Anti-diabetes, and anti-hyperglycemic¹².

ketaki *(Pandnus tectorus):* It has Tikta, Madhura, Katu Rasa; Ushna Virya; Laghu, Snigdha Guna; Katu Vipaka; Pitta-Kapha Hara, Caksusya properties¹³. It is known to have lactogenic, cardiac depressant, anti-inflammatory, CNS stimulant, anti-cholinergic, anti-diuretic, hypoglycaemia¹⁴.

Bhringaraja *(Eclipta alba):* It *has* Katu, Tikta Rasa; Ruksa, Laghu Guna; Ushna Virya; Katu Vipaka; Kapha-Vata Hara, Kesya, Rasayana, Balya, Caksusya, Dantya properties¹⁵. It is known to have anti-mytotoxic, analgesic, anti-bacterial, anti-hepatotoxic, anti-hyperglycaemic, antioxidant, immunomodulatory properties and it is considered as a good rejuvenator¹⁶.

Amalaki (Emblica officinalis): It has Amla Pradhana, Pancha Rasa (except Lavana); Sita Virya; Madhura Vipaka; Tridosha Hara, Vayahsthapana, Rasayana, Caksusya, Vrysa¹⁷. It is known to be efficacious against diversified ailments like inflammation, cancer, osteoporosis, neurological disorders, hypertension together with lifestyle diseases, parasitic and other infectious disorders¹⁸.

Tintrini (Tamarind): It has Amla Rasa; Guru, Ruksha Guna; Ushna Virya; Amla Vipaka¹⁹. It is known to have anti-diabetic activity, antimicrobial activity, anti-venom activity, antioxidant activity, antimalarial activity, hepato-protective activity, anti-asthmatic activity, laxative activity, and anti-hyperlipidemic activity²⁰.

Kapikacchu *(Mucuna pruriens):* It has Madhura, Tikta Rasa; Guru, Snigdha Guna; Ushna, Sita Virya; Madhura Vipaka; Vata-Pittahara, Balya, Brmhana, Vajikarna properties²¹. It has multidiversified functions like several free radical mediated diseases management, rheumatoid arthritis, diabetes, atherosclerosis, nervous disorders, analgesic, antipyretic activity and in the management of Parkinsonism²².

Kamala (*Nelumbo nucifera*): It has Kasaya, Madhura, Tikta Rasa; Sita Virya; Laghu, Snigdha, Pichhila Guna; Madhura Vipaka; Kapha-Pitta Hara, Mutravirajaniya, Varnya, Garbhasthapaka²³. It has anti-ischemia, antioxidant, anticancer, antiviral, anti-obesity, lipolytic, antipyretic, hepato-protective, hypoglycaemic, anti-diarrhoeal, anti-fungal, antibacterial, antiinflammatory and diuretic activities²⁴.

Guduchi *(Tinospora cordifolia):* It has Tikta, Kashaya Rasa; Guru, Snigdha Guna; Ushna Virya; Madhura Vipaka; Tridosha Shamaka, Medhya, Rasayana, Dipaniya, Grahi, Medohara, Kandhughna, Jwara Hara, Daha-Prasamana²⁵. It has antidiabetic, anti-periodic, anti-spasmodic, anti-inflammatory, antiarthritic, anti-oxidant, anti-allergic, anti-stress, anti-leprotic, anti-malarial, hepato-protective, immunomodulatory and antineoplastic activities²⁶.

Chandana *(Santalum album):* It has Tikta, Madhura Rasa; Laghu. Ruksha Guna; Sita Virya; Katu Vipaka; Kapha-Pitta Hara, Varnya, Dahaprasamana properties²⁷. It act as insect growth inhibitor, anti-fungal, anti-oxidant, anti-skin cancer, anti-bacterial, anti-viral, anti-ulcerogenic, anti-inflammatory, anti-pyretic²⁸.

Babbula twak *(Acacia nilotica):* It has Kasaya Rasa; Guru, Ruksha Guna; Sita Virya; Katu Vipaka; Kapha Hara, Lekhana, Grahi properties²⁹. It has anti-microbial, anti-bacterial, anti-malarial, anti-helminthic activity³⁰.

Gambhari *(Gmelina arborea):* It has Tikta, Kasaya, Madhura Rasa; Guru Guna; Usna Virya; Katu Vipaka; Vata-Pitta Hara, Bhedana, Sothahara, Dipana-Pachana, Medhya property³¹. It has anthelmintic, antimicrobial, anti-diabetic, diuretic, hepato-protective and antiepileptic agent³².

Mustaka (*Cyperus rotundus*): It has Tikta, Katu, Kashaya Rasa; Laghu, Ruksha Guna; Sita Virya; Katu Vipaka; Kapha-Pitta Hara, Dipana-Pacana, Grahi, Lekhana properties³³. It has analgesic, astringent, antispasmodic, antibacterial, carminative, emollient, febrifuge, immune-stimulant, laxative, stimulant, tonic, vermifuge, anti-candida, anti-inflammatory, anti-diabetic, anti-diarrheal, cyto-protective, anti-mutagenic, anti-bacterial and antioxidant³⁴.

Tambula (*Pipper beetle*): It has Tikta , Kashaya Rasa; Laghu Tikshna Guna; Ushna Virya; Katu Vipaka; Alleviates Kapha, improves taste, wards off bad smell of the mouth, provide good complexion and appearance, removes the waste/dirt of the lower jaw and teeth, cleanses the tongue mitigates excess of salivation and cures diseases of the throat³⁵. It has anti-fertility, antimicrobial, gasto protective, immunomodulatory, hepatoprotective, cholinomimetic, anti-oxidant, anti-diabetic, radio protective activity³⁶.

Nimbhu swarasa *(Citrus medica):* It has Amla, Katu Rasa; Laghu, Tikshna Guna, Ushna Virya, Amla Vipaka; Vata-Kapha Hara, Dipana-Pacana, Caksusya³⁷. It has analgesic, hypoglycaemic, anticholinesterase, anticancer, anti-diabetic, hypocholesterolemic, hypolipidemic, insulin Secretagogue, anthelmintic, antimicrobial antiulcer and estrogenic properties³⁸.

Jeeraka *(Cuminum cyminum):* It has Katu Rasa; Laghu, Ruksha Guna; Usna Virya; Katu Vipaka; Kapha-Vata Hara, Dipana-Pacana, Grahi, Visya, Garbhasaya Sodhaka, Balya properties³⁹. It has anti-microbial, insecticidal, anti-diabetic, anti-cancer, anti-oxidant, anti-inflammatory, analgesic, hypotensive activity⁴⁰.

Kharjoora (*Phoenix sylvestris*): It has Madhura Rasa; Snigdha, Guru Guna; Sita Virya; Madhura Vipaka; Vata-Pitta Hara, Hrdya, Balya, Vrsya, Brmhana⁴¹. It has anti-bacterial, anti-inflammatory, anti-diabetic, anti-asthmatic, nephro-protective, hepato-protective and aphrodisiac activity⁴².

Neeli (*Indigofera tinctoria*): It has Tikta Rasa; Laghu, Ruksha Guna; Usna Virya; Katu Vipaka; Kapha-Vata Hara, Visaghna, Kesya, Krimighna properties⁴³. It has anti-hyperglycaemic, anti-bacterial, anti-oxidant and cytotoxic, anti-inflammatory, hepato-protective, anti-diabetic, anti-epileptic, anti-nociceptive, anti-helminthic, anti-proliferative, anti-dyslipidaemia properties⁴⁴.

Pashana (Bergenia ligulata): It has Kashaya, Tikta Rasa; Laghu, Snigdha Guna; Sita Virya; Katu Vipaka; Tridoshahara, Mutravirecaniya properties⁴⁵. It has anti-lithic, diuretic, antibradykinin, antiviral, antipyretic, antibacterial, antiinflammatory, hepato-protective, insecticidal, α -glucosidase activity⁴⁶.

Ardraka (Zingiber officinale): It has Katu Rasa; Guru, Ruksha, Tikshna Guna; Usna Virya; Madhura Vipaka; Vata-Kapha Hara, Dipana, Bhedana properties⁴⁷. It has cardio protective, hypoglycemic, hypolipidemic, anti-inflammatory, antiemetic, anti-microbial, antioxidant, anti-proliferative, neuroprotective, hepato-protective activities⁴⁸.

Varuna (*Crataeva religiosa*): It has Tikta Kashaya Rasa; Laghu, Ruksha Guna; Usna Virya; Katu Vipaka; Kapha-Vata Hara, Dipana, Krmighna properties⁴⁹. It has diuretic, antiinflammatory, laxative, antioxidant, anti-oxaluric, hepatoprotective, lithonotriptic, anti-rheumatic, antiperiodic, antimycotic, contraceptive, antipyretic, anti-lithitic, anti-helminthic, rubifacient and vesicant properties⁵⁰. **Kataka** (*Strychnos potatorum*): It has Madhura, Kashaya, Tikta Rasa; Laghu, Vishada Guna; Sita Virya; Madhura Vipaka; Kapha-Vata Hara, Caksusya, Chardikara, Visaghna⁵¹. It has anti-diabetic, anti-inflammatory, anti-ulcerogenic, hepatoprotective, anti-oxidant, anti-arthritic, antinociceptive, antipyretic, anti-diarrheal, diuretic activity⁵².

Takra (Buttermilk): Tridoshaghna, Vata-Kapha Pradhan conditions, Grahani (Sprue), Arsha (Piles), Udara (Asities), Sthaulya (Obesity), Prameha (Diabetes), Shotha (Swelling), Complication of Ghrita (Ghee), Tail (Oil) & Garavisha (Low Potency Poison)⁵³.

Ksheera (Milk): Milk is used in purification of poison substances, promotes Ojas, pacify Vata and pitta dosha, acts *as* Rasayana, Bhrama (dizziness, psychosis), intoxication, excess thirst, chest injury, tiredness, haemorrhage, dysuria⁵⁴.

Ushna jala (Hot water): Calms Vata and Kapha, elevates pitta. Relieves Aama, indigestion, respiratory tract infections, *asthma*, avoids fat absorption, and cleanses urinary bladder⁵⁵.

Tandulodhaka (Rice washed water): Coolant, useful in burning sensation, diarrhoea, bleeding disorders, heavy periods, skin moisturizer and as a remedy for fly's bite⁵⁶.

Narekela water (Coconut water): Coconut water is a coolant, which makes soothing and anti-inflammatory for skin and gut, pacify hyper-acidity, it is capable getting all the toxins out of the body and purify the digestive system. Tender coconut balances acid levels and cools the digestive system. It acts as natural stress buster, quenches even the strongest thirst, improves skin texture, helps replenish minerals and salts as well as flui⁵⁷.

Sudha (Lime): Prevent or correct calcium deficiency, osteoporosis, antacid, phosphate binders, acute treatment of tetany, urtricaria, nonspecific intestinal colic, hyperkalemia and cardiac arrest. As a supplement in fractures, rickets etc. helps in binding of parade⁵⁸.

Saindhava lavana: It has Lavana Rasa; Laghu, Snigdha, Tikshna Guna; Sheeta Virya; Tridoshashamaka, Agnideepana, Pachana, Ruchya, Netriya, Hridya, Vrishya properties⁵⁹.

Author while explaining of Visha Chikitsa he has mentioned about different modes of poisons along with antidote, by above categorizing of poison it is clear that not only Visha Dravyas acts poison, even when Dravyas which are taken Viruddha (improperly) or uncooked or excess intake etc., may leads to poison. Either food or drugs when properly taken it acts as a medicine, when taken in improper manner it leads to poisonous effects. According to the Yukti (knowledge) and patient signs and symptoms treatment has to be chosen.

CONCLUSION

Each and every system of medicine has its own line of the treatment for removing toxin caused by toxic substances. Ayurveda has explained several antidotes which are easily available. Highest mortality rate in the world due to poisoning is seen mainly in lower socioeconomic groups and with a very little publicity for emergency treatment. This article has explained about some specific antidotes which are easily available. This is the time for scope to stimulate further research

on the antidote, for new, improved antidotes and its action in different modes of poisoning conditions.

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How to cite this article:

Acha Vidhya Dharini and Chaitra H. A review on antidotes with special reference to basavarajeeyam. J Pharm Sci Innov. 2018;7(4):115-120. http://dx.doi.org/10.7897/2277-4572.07492

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

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