A REVIEW ON ANTIDOTES WITH SPECIAL REFERENCE TO BASAVARAJEEYAM
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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 one 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 Chikitsa (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 “Visharoganiidanakshana 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 “Visharoganiidanakshana 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.

Table 1: List of poison and its specific antidotes

| Sl.no | Poison                                      | Antidote                       |
|-------|---------------------------------------------|--------------------------------|
| 1     | Ankola (Alangium salvifolium), karaveera (Nerium indicum) | Harvetaki (Terminalia chebula) |
| 2     | Langali (Gloriosa superba)                  | Shunti (Zingiber officinale)   |
| 3     | Bhallataka (Semecarpus anacardium)         | Palasha pushpa (Butea monosperma) |
| 4     | Snuhi ksheera (Euphorbia nerifolia)        | Avartaki (Cassia auriculata)   |
| 5     | Vishamushiti (Strychnos nuxvomica)         | Jambu (Syzygium cumini), ketaki (Pandanus tectorus) |
| 6     | Karpoo ra                                    | Bhringagarja (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 prurients)  |
| 12    | Dhattura (Datura metali)                    | Kamala (Nelumbo nucifera) choorna and Tandulodaka |
| 13    | Tintrini phala (Rhus parviflora)            | Haridra (Curcuma longa)        |
| 14    | Card                                        | Warm water                     |
Poisoning is the situation which is experienced by the people since ancient time from day to day life which is causing serious ailments 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 toxins. 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 intervention.

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 poison. 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 Swarasas. Antidotes of animal products are mainly taken in form of milk.

**DISCUSSION**

Some of antidotes and its properties

**Hareetaki (Terminalia chebula):** It has Pancharastra (except lavana), Laghu, Rukshha Guna, Usna Virya, Madhura VIPaka, Tridosahara, Rasayana, Hrdya. *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, nephroprotective.

**Haridra (curcuma longa):** Curcuma longa has Katu, Tikta Rasa; Rukshha, Laghu Guna; Usna Veerya; Katu VIPaka; Kusthaghna (relieving skin disease) and Vishaghna (anti-poisonous) 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, free-radical scavenging property.

**Hingu (Ferula northax):** Hingu has Tikta, Katu Rasa; Tiksha, Laghu Guna; Usna Veerya; Katu VIPaka; Pacana, Rucikara, Krimighna Karma. It is known to have anti-inflammatory, anti-viral, anti-mutagenic, antifungal actions. It is used in the treatment of asthma, gastro-intestinal disorders, and intestinal parasites etc.

**Shunti (Zingiber officinale):** It has Katu Rasa; Rukshha, Tiksha Guna, Usna Veerya; Madhura VIPaka; Deepaniya, Kusthahara and Shoolaghna Karma. It has immune-modulatory, anti-tumorogenic, anti-inflammatory, anti-hyperglycemic actions.

**Avertaki (Cassia auriculata):** It has Kasaya, Tikta Rasa; Sita Virya; Laghu, Rukshha Guna; Katu VIPaka; Kapha-Pitta Hara, Stamabhana Karma. It is known to have anti-diabetic, anti-mutagenic, anti-fertility property.

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

**Jambu (Syzygium cumini):** It has Kashaya, Madhura, Amla Rasa; Laghu Rukshha Guna; Sita Virya; Katu VIPaka; Vatavardhaka, Kapha-Pitta Hara, Grahi properties. It is known to have Antiemet, Anti-haemorrhagic, Anti-diabetes, and anti-hyperglycemic.

**ketaki (Pandanus tectorius):** It has Tikta, Madhura, Katu Rasa; Usna Virya; Laghu, Snigdha Guna; Katu VIPaka; Pitta-Kapha Hara, Caksusya properties. It is known to have lactogenic, cardiac depressant, anti-inflammatory, CNS stimulant, anti-cholinergic, anti-diuretic, hypoglycaemia.
Bhringaraja (Eclipta alba): It has Katu, Tikta Rasa; Ruksa, Laghu Guna; Ushna Virya; Katu Vipaka; Kaptha-Vata Haras; Kesya, Rasayana, Balya, Cakusyusa, Dantya properties. It is known to have anti-myotoxmic, analgesic, anti-bacterial, anti-hepatotoxic, anti-hyperglycaemic, antioxidant, immunomodulatory properties and it is considered as a good rejuvenator.

Amalaki (Emblica officinalis): It has Amla Pradhanana, Pancha Rasa (except Lavana); Sita Virya; Madhura Vipaka; Tridoshaha, Varayasthapasa, Rasayana, Cakusyusa, Vrysa. It is known to be efficacious against diversified ailments like inflammation, cancer, osteoporosis, neurological disorders, hypertension together with lifestyle diseases, parasitic and other infectious disorders.

Tintri (Tamarind): It has Amla Rasa; Guru, Ruksha Guna; Ushna Virya; Amla Vipaka. 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 activity.

Kapikacchu (Mucuna pruriens): It has Madhura, Tikta Rasa; Guru, Snigdha Guna; Ushna, Sita Virya; Madhura Vipaka; Vata-Pittahara, Balya, Brmhnana, Vajjikarna properties. It has multi-diversified functions like several free radical mediated diseases management, rheumatoid arthritis, diabetes, atherosclerosis, nervous disorders, analgesic, antipyretic activity and in the management of Parkinsonism.

Kamala (Nelumbo nucifera): It has Kasaya, Madhura, Tikta Rasa; Sita Virya; Laghu, Snigdha, Picchhila Guna; Madhura Vipaka; Kaptha-Pitta Haras, Mutravirajanya, Varnya, Garbhasthapa. It has anti-ischemia, antioxidant, antitumour, antiviral, anti-obesity, lipolytic, antipyretic, hepato-protective, hypoglycaemic, anti-diarrhoeal, anti-fungal, antibacterial, anti-inflammatory and diuretic properties.

Guduchi (Tinospora cordifolia): It has Tikta, Kashaya Rasa; Guru, Snigdha Guna; Ushna Virya; Madhura Vipaka; Tridoshaha Shamaka; Medhya, Rasayana, Dipaniyana, Grahi, Medohara, Kandhughna; Jwara Haras, Daha-Prasamas. It has anti-diabetic, anti-periodic, anti-spasmodyic, anti-inflammatory, anti-arthritic, anti-oxygenic, anti-allergic, anti-stress, anti-leptotic, anti-malarial, hepato-protective, immunomodulatory and anti-neoplastic activities.

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

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

Gambhari (Gmelina arborea): It has Tikta, Kasaya, Madhura Rasa; Guru Guna; Usna Virya; Katu Vipaka; Vata-Pitta Haras, Bhedana, Sothahara, Dipana-Pachana, Medhya property. It has antihelminthic, anti-microbial, anti-diabetic, diuretic, hepato-protective and antiepileptic agent.

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

Tambula (Piper betle): 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 throat. It has anti-fertility, anti-microbial, gasto protective, immunomodulatory, hepatoprotective, cholominmetic, anti-oxidant, anti-diabetic, radio protective activity.

Nimbu swaras (Citrus medic): It has Amla, Katu Rasa; Laghu, Tikshna Guna, Ushna Virya, Amla Vipaka; Vata-Kapha Haras, Dipana-Pacana, Cakusyusa. It has analgesic, hypoglycaemic, anticholineresterase, antitumour, anti-diabetic, hypcholesterolic, hypolipidemic, insulin Secretagogue, anthelmintic, antimicrobial antiulcer and estrogenic properties.

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

Kharjoora (Phoenix sylvestris): It has Madhura Rasa; Snigdha, Guru Guna; Sita Virya; Madhura Vipaka; Vata-Pitta Haras, Hrdya, Balya, Vrsya, Brmhnana. It has anti-bacterial, anti-inflammatory, anti-diabetic, anti-asthmatic, nephro-protective, hepatoprotective and aphrodisiac activity.

Neeli (Indigofera tinctoria): It has Tikta Rasa; Laghu, Ruksha Guna; Usna Virya; Katu Vipaka; Kapha-Vata Haras, Visagaha, Kesya, Krimginha properties. It has anti-hyperglycaemic, anti-bacterial, anti-oxygenic and cytoxic, anti-inflammatory, hepatoprotective, anti-diabetic, anti-epileptic, anti-nociceptive, anti-helminthic, anti-proliferative, anti-dyslipidaemia properties.

Pashana (Bergenia ligulata): It has Kashaya, Tikta Rasa; Laghu, Snigdha Guna; Sita Virya; Katu Vipaka; Tridoshaha, Mutravirecniya properties. It has anti-liptic, diuretic, anti-bradykinin, antiviral, antipyretic, antibacterial, anti-inflammatory, hepato-protective, insecticidal, α-glucosidase activity.

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

Varuna (Crataeva religiosa): It has Tikta Kashaya Rasa; Laghu, Ruksha Guna; Usna Virya; Katu Vipaka; Kapha-Vata Haras, Dipana, Krimginha properties. It has diuretic, anti-inflammatory, laxative, antioxidant, anti-oxaluric, hepato-protective, lithonotriptic, anti-rheumatic, antiperiodic, anti-mycotic, contraceptive, antipyretic, anti-lithic, anti-helminthic, rubifacient and vesicant properties.
Kataka (Strychnos potatorum): It has Madhura, Kashaya, Tikta Rasa; Laghu, Vishada Guna; Sita Virya; Madhura Vipaka; Kapha-Vata Hara, Cakusuya, Chardikara, Visagha. It has anti-diabetic, anti-inflammatory, anti-ulcerogenic, hepatoprotective, anti-oxidant, anti-arthritic, antinociceptive, anti-pyretic, anti-diarrheal, diuretic activity.

Takra (Buttermilk): Tridoshaghnaha, Vata-Kapha Pradhan conditions, Grahani (Sprue), Arsha (Piles), Udara (Asitij), Stithaulya (Obesity), Pameha (Diabetes), Shotha (Swelling), Complication of Ghrta (Ghee), Tail (Oil) & Garavsha (Low Potency Poison).

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, tenderness, haemorrhage, dysuria.

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

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

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 flui.

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 parade.

Saindhava lavana: It has Lavana Rasa; Laghu, Snigdha, Tikshna Guna; Sheetawirya; Tridoshashamaka, Agnideepana, Pachana, Ruchya, Netriya, Hridya, Vrisyha properties.

Author while explaining of Visha Chiktis 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 Virudha (improperly) or uncooked or excess intake etc., may lead 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 poison 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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