ABSTRACT

Ayurveda developed from "Trisutra" (Hedu, Linga, Ausadha) to Astanga i.e., the eight specialty of Ayurveda, which are almost related with clinical aspect of Ayurveda, out of these Astanga Ayurveda, Agadatantra or Damstra or Visagara Vairodikhikam deals with toxicology i.e., the treatment of various types of poisoning of plant and animal origin with the help of various antidotes which are abundantly described in Agadatantra related portion of Astanga Samgraha. This Agadatantra can be correlated with the Forensic Medicine, jurisprudence. In modern counterpart of Forensic and Medical jurisprudence is described but about Toxicology is described very less, whereas in Ayurveda, we are rich in Toxicology part where treatment of plant and animal poisoning along with various antidotes are described extensively, for an example, Snake bite and its treatment is described along with extensive use of antidotes. There for in this page all the scattered matters of toxicological aspect are highlighted and collected in a systematic manner.

AIMS AND OBJECTIVES

In this research paper my prime aim and objectives to collect all the concept about Agadatantra which is described in Astanga Samgraha. So that, we can have literally review consolidately in one place and develop this particular area more specifically and vividly and then compared to Toxicological part of modern science and when compared our Agada Tantra outstands as unique special branch in this field.

DISCUSSION

The word 'Visha' is derived from "Visannam". [4] According to Ayurveda, the word 'Visha' implies appearing like anger personified, black in colour, with fire like eyes, shining hairs standing on the head, terrifying teeth, frightful voice and countenance etc. which can destroy all the living creature. It is mainly of two types - 1. Sthavar (Immobile or plant origin), 2. Jangama (Mobile or Animal origin).

Acharya Charaka says 'Gara' type of poison produces cumulative toxicity. Toxicity produced due to the combination of incompatible articles is known as Vairodhika.[5]

Acharya Susruta says That which describes about the determination of signs and symptoms of poisoning due to the bite of snake, insects, spiders, rats, etc. and which also describes about the pacification of the Vikaras (morbidities) produced by Swabhavik, Kritrim, and Sanvyog Visha is called Agadatantra.[6]

Hemadri says 'Damstra' means poisoning.[7] The word 'Toxicology' derived from the ancient Greek word 'Toxikos'[8] which means 'Poisonous'. Toxicology[9] means the study of the effects and detection of poisons (toxins) and the treatment of poisoning. Agadatantra or Visha Vairodikhikam (Toxicology) is one of the important branch among eight branches of Ayurveda (Astanga Ayurveda). This branch of Ayurveda deals with treatment and protective measures of the diseases due to Visha or poison.

In Astanga Samgraha along with other branches Agadatantra or Damstra also mentioned but the matters of Agadatantra or Visha Vairodikhikam was in scattered form all throughout the text. Hence the reader has to face difficulty in finding out all the concept about Agadatantra in the entire text. This ramified form of Ayurveda shows some disadvantages in treatment related to the physicians as well as to the readers or scholars. But if we can arrange and collect all the data or concept in the form of Astanga Ayurveda in respect of each particular branch, it will be helpful to everyone to find out the matters according to their need. As an important and necessary branch among other eight branches of Ayurveda, Agadatantra or Damstra has been mentioned in different Sthanasar chapters of Astanga Samgraha written by Acharya Vagbhata.

In Sutrasthan, the benefits of Sovanjan (Antimony sulphide) which is a poison in nature has been described in Dinachrya Adhaya (3rd chapter). In Dravadraya Vijaniniya Adhaya (6th chapter), poisonous effect of insects and snakes on water, poisonous effect of honey, Antipoisonous effect of human urine[10], and in Anna Savarupa Adhaya (7th chapter) flesh of 'Godha' as Anti poisonous meat, Anti poisonous effect of Suras and Sumukha, Kapittha and poisonous effect of Kakmachi has been mentioned.[11] In Anna Raksha Vidhi Adhaya (8th chapter) of Sutrasthan, procedures to detect poisonous food, Anti poisonous measures, characteristics of poisoned food, treatment of poisoned person, poisonous Dhuma (fumes), Symptoms of poisoned food in Stomach, Intestines with treatment, Symptoms of poisoned tooth brush, poisoned collyrium, poisoned snuff and smoke, poisoned oil, poisoned flowers, poisoned soil, water and Air with their treatment, Symptoms of Visa Kanyas (poisoned woman) and Anti poisonous recipes with their application has been mentioned.[12]
Adhaya (6th chapter), Symptoms of Vishajany Mada and in Pandu, Kamila, Sopha, Visarpa Nidan Adhaya (13th chapter), Symptoms of Vishajanya Sopha has been described.[13] In Jirna Jvarachikitsa Adhaya (2nd chapter) of Chikitsa Sthana, treatment of Visha Janya and Madajanyan Jvra has been mentioned.[14]

In Ikshaku Kalpana Adhaya (1st chapter) and Saptala, Sankhini, Kalpana (2nd chapter) of Kalpanasthana treatment of Visha (poison) and GaraVisha has been mentioned.[15]

In Uttarsthana, Symptoms of Visaja Unmada has been mentioned in Unmada Pratisedha Adhaya (9th chapter),[16] In the Visha Pratisedha Namadhaya (40th chapter), origin of Visha, kinds of Visha, Vishavega, Vishapratisedha Adhaya (41st chapter), types of Snake, features of poisonous bite and treatment has been mentioned.[17] In Sarpavisha Vijnaniya Adhaya (41st chapter), types of Snake, Symptoms of poisonous and non-poisonous Snakes, features of poisonous bite and treatment has been mentioned.[18]. In Sarpavishapratisedha Adhaya (42nd chapter), Different treatment procedures of different kinds of Snake bite has been mentioned.[19] In Kita Vishapratisedha Adbhaya (43rd chapter), Origin and different types of Kita (Insect), Symptoms of bite, Treatment of Kita Visha and Scorpion bite with treatment is mentioned.[20] In Luta Pratisedha Namadhaya (44th chapter), Origin of Lutas (Spiders), types, Symptoms of bite, incubation period, Fatal bite and Treatment procedures are mentioned.[21] In Pratyak Luta Pratisedha Namadhaya (45th chapter), Different types of Luta (Spiders), Symptoms of bite, Sadhya (Curalbe) and Asadhya (Incurable) treatments has been mentioned.[22] In Mushika- Alarkavisha Pratisedhaadahyya (46th chapter), Different type of Mushika (Rats) and Alarka (Rabid Dog) with Symptoms of bite and treatment procedures are mentioned.[23] In Vishaupadatra Pratisedha Namadhaya (47th chapter), Visha Upodrava (Secondary diseases of poisoning), Disease with their symptoms and Anti poisonous compositions are mentioned.[24] In Vishaupayogiya Namadhaya (48th chapter), Necessity of counter poison application, with doses, applied purpose of Sarpavisha (Snake poison), different recipes of counter poison has been mentioned in a wide range.[25]

In the entire Astanga Samgraha, we can get the concept of Agadatantara or Visha Vairodhikam or Damstra in 19 chapters of different Sthanas (Sutra, Nidan, Sharir, Chikitsa, Kalpa and Uttarsthana) including 652 No’s of Slokas.

<table>
<thead>
<tr>
<th>SthavaVisha (Plant Origin)</th>
<th>Lakshana (Symptoms)</th>
<th>Chikitsa (treatment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visa JustaAnna (Poisoned food) [27]</td>
<td>Toxicity, fainting, vomiting, diarrhoea, fever, hiccup, tingling of teeth, rigidity of lower jaw, throat pain etc. (A.S-Ut-40/8-9)</td>
<td>- Yavagu prepared with the decoction of Kosakati, Aghrika, Patha, Suryavalli, Amrita, Abhaya, Selu, Sirisha, Kini, Haridra, Punarnava, Trikatu, Bribati, Bala, Sariva, with honey and ghee.</td>
</tr>
<tr>
<td>Visa JustaDantakastha (Poisoned toothbrush) [28]</td>
<td>Emits smell of the poison, dryness and swelling of the palate, teeth, tongue and lips. (A.S-Ut-8/34)</td>
<td>Paste prepared with juice of Dadi Karamarda, Bhaiya, Amrataka, Kola, and Badara mixed with honey. (A.S-Ut-8/35-38)</td>
</tr>
<tr>
<td>VisaJusta Anjana (Poisoned collyrium) [29]</td>
<td>Accumulation of dirt in the eyes, redness, pain, distortion of vision, blindness. (A.S-Ut-8/37)</td>
<td>Medicated Chrita prepared with Pippali should be given for drink and this Chrita should applied over affected eyes. (A.S-Ut-8/38)</td>
</tr>
<tr>
<td>VisaJustaThila (Poisoned oil) [31]</td>
<td>Burning sensation in the skin, perspiration, ulcers, laceration etc. (A.S-Ut-8/41)</td>
<td>Cold water bath, paste of Chandana, Tagara, Usira, Kustha, Padma should be applied, juice of Kapittha with cow urine should be given. (A.S-Ut-8/42-43)</td>
</tr>
<tr>
<td>VisaJusta Bhumi (Poisoned soil) [32]</td>
<td>Appears as burnt in fire, grass and bush will be found faded and dropping down, insect and crawling animals lying dead, people or animals may have vomiting, fainting and fever. (A.S-Ut-8/69-70)</td>
<td>- Roots of Sobhanjan, Somavalli, Usira, juice of Matula, Hingu are to be made into a drink mixed with little amount of curd. -Urine, flesh and blood of goat, sheep and added with all fragrant drugs are to be boiled in water and that water should be sprinkled all over the poisoned land. (A.S-Ut-8/71-73)</td>
</tr>
<tr>
<td>Savirupanjan (Collyrum)</td>
<td>Protective against eye disease. (A.S-Sut-3/25)</td>
<td></td>
</tr>
<tr>
<td>Suras/Tulas (Ocimum tenuiflorum)</td>
<td>Anti poisonous. (A.S-Sut-7/160)</td>
<td></td>
</tr>
<tr>
<td>Kapittha</td>
<td>Anti Poisonous. (A.S-Sut-7/185)</td>
<td></td>
</tr>
<tr>
<td><strong>JANGAMA (ANIMAL ORIGIN)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Visa Justa Jala</strong> (Poisoned water)</td>
<td>The water of the reservoirs which have been poisoned, will have bad taste, hard to digest, dead fish floting, causes swelling, irritation in mouth, and burning sensation. (A.S-ut/74-76)</td>
<td></td>
</tr>
<tr>
<td><strong>Visa Justa Vayu</strong> (Poisoned air)</td>
<td>Poisoned air will be cold during summer hot during winter, causes giddiness fainting and other symptoms. (A.S-ut/8/81)</td>
<td></td>
</tr>
</tbody>
</table>

### Darvika Damsa (Hooded Snakes) [35]
- Site of bite is seen elevated like the tortoise back, dry, with small marks of teeth, associated with abnormal symptoms like, blue colour of the face, nails, urine, eye, Dryness and irrelevant speech, loss of movements, loss of consciousness, dry belching often and such other symptoms of vata aggravation. (A.S-ut/41/39)
- Root of Sinduvaraka, macerated in its own juice, added with honey a consumed with the recipe for poison of hooded snakes.
- Pakala (Kustha) and honey and made use of nasal drops.
- Ghee added with honey and Manjisth and Grahadhuma (kitchen soot), should be drunk.
- Agada (Antipoisonous) with Tanduliyaka Kasmarya, Kanini, girikarnika, Matulanga, site and selu used for drinking, nasal medicament and collyrium is beneficial. (A.S-ut/42/21-26)

### Mandali Damsa (Snake with patches) [36]
- The site is dry, hot, yellowish-red discoulouration; Muscle becomes thick with Visarpa (Herpes) like ulcer accompanied with burning sensation, fever, bleeding from channels and symptoms of pitta aggravation. (A.S-ut/41/40)
- Equal parts of sugandha, Svetakshya, Gajakarnika, half part of each of leaves of Surasa, Kapitha, Bilva, Dadima made into a paste mixed with honey is beneficial.
- Himavan Agada
- Astanga Agada (A.S-ut/42/26-28)

### Rajimanta (Snakes with stripes) [37]
- The site is unctuous firm, slimy, swollen, blood thick, cold, feeling of heaviness, anorexia, vomiting, loss of consciousness, Dyspnoea and other symptoms of kapha aggravation.
- Katuka, Ativisa, Kustha, Grahadhuma, Harenuka Vyosaand Tagara made into a Paste and consumed mixed with honey.
- Incase of bite by a Kaudachitra snake the bitten part should be buried in the ground for two Yama (6 hours), then pulled up, the site of bite incised and covered with the mild adhering to the root of a corn plant the patient made to drink ghee boiled with powder of Varu, after this get digested and he had Purgation, he should per take barley along with processed soup. (A.S-ut/42/30-31)

### Alarka Visa (Rabid dog) [38]
- Sleepy unconscious black coloured blood comes out from the site of bite develops pain in the heart and head, fever, rigidity, thirst and fainting.
- The person gets frightened by the sight, touch and sound of water even though not bitten by rabid dog etc. such a patient of the disease jalasantrasa (hydrophobia) should be rejected. (A.S-ut/46/8-12)
- On site of bite juice of flowers of Apamarga should be squeezed.
- Roots of Nala beneficial for drinking and external application.
- Fruits of Dhurduraka, root of kakoudumbarika consumed with sidhu.
- Use of virechan drug with arka milk
- Use of panchagas of jalavetas.

### Vrischika Damsa (Scorpion bite) [39]
- Swelling of the tongue, rigidity, of the body parts, pain, vomit's blood, which is black in colour, loss of sensory perceptions, perspire, faint's dryness of mouth, Anxietey. Muscles at the site of bite drop off. (A.S-ut 43/27)
- Bathing with Cakra or vidiragraham taila
- Fomentation with rajani, sandhava, vyosa flowers and fruits of shirish
- Seeds of palash pasted with arka milk applied to relieve pain
- Tooth of camel added with saivala destroys the scorpion poison.

### Luta Visa (Spider bite) [40]
- Appearance of a round rash, white black mild red yellow or blue in colour, soft, raised up, its centre is either black or blue. It has burning sensation, severe, pain, fever, quick ripening, exudation, sloughing, muscles falling out etc. (A.S-ut. 44/12)
- Agnikarma with jambavosta.
- Bloodletting should be done.
- Paste of bodhi, slesmantak and akasaka should be applied.
- Nasal drop with ghee.
- Collyrium prepared with leaves of surasa, vyosa, roots of bilva & haridra macerated with goat's urine.
CONCLUSION

In today's busy life, time is an important factor. So, the people has limited time to go through the entire treatise of any Samhita. Aim of this present study is to collect all concept regarding Agadatantra mentioned in Astanga Samgraha and make it short and easy, which will be helpful for the readers and researchers of future generation to find and understand the matter's in a easy and less time consuming way. This research work may be helpful to the physicians in the treatment of some common poisoning. With this work, we can go for further research in this field and develop the Ayurveda in Scientific way. Then only Ayurveda will get popularity and will be accepted by the modern world.

REFERENCES