

Poison as Discussed by Susruta, The Father of Surgery

Dilip Kumar Goswami*

Associate Professor, Agada Tantra and Vidhi Ayurveda (Toxicology and Forensic Medicine), Govt. Ayurvedic College, Guwahati, Assam, India

***Corresponding Author**

Dilip Kumar Goswami, Associate Professor, Agada Tantra and Vidhi Ayurveda (Toxicology and Forensic Medicine), Govt. Ayurvedic College, Guwahati, Assam, India.

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Abstract

Poisons are the substances that, after coming to contact with the body either internally or externally, cause deleterious effect. Poisoning is the situation when an individual comes to the contact with a poison and the development of signs and symptoms occurs. Management of poisoning is vividly discussed in the branch of Modern medicine "Toxicology".

The context of the substances that can be closely compared with "poison" and "poisoning" is the concept of "BISHA" and "BISHAPITA" of the Ayurvedic classics. Bisha is discussed by the great Indian Ayurvedic scholar, the father of Indian medicine, "Charaka" in the famous book "Charaka Samhita" Chikitsasthana 23rd chapter and also by the father of Indian Surgery "Susruta" in "Susruta Samhita" Kalpasthana 8 chapters. Both the scholars have given almost same concepts on poison (Bisha) and poisoning (Bishapidita). But, even with close similarity of concepts, the description of Susruta is seemed to be more elaborate and informative hence throwing light on his concepts is considered to be more beneficial and informative.

Keywords: Poison and Poisoning, Toxicology, Bisha And Bishapidita, Susruta, Elaborate And Informative

Poisons are the substances that are in existence in the creation since time immemorial. These substances have been causing even irreversible states of the individuals who got exposure to these potent and strong sign symptoms causing substances. After the modern medicine coming to its existence the branch "Toxicology" is developed to study, research and deal with the situation of poisoning which may even be proved to be fatal.

"AGADATANTRA" is the branch of Ayurveda that was introduced for the purpose of dealing with the situation of poisoning (Bishapidita). Defining the branch "Agadatantra", acharyya Susruta says that, this is the branch of Ayurveda that deals with the conditions appeared due to exposure to the harmful substances (Bisha), like the poisons of snake (sarpa), insects (kita), spider (luta), flies (makshika) etc. Here, though the name of the inanimate poisons is not mentioned then also it should be understood that, all such harmful substances are included in the sloka.

Charaka and Susruta, the pioneer and founder of Indian system of medicine discussed in detail about the substances that, by virtue of their natural properties, cause deleterious effect on the body under the heading "BISHA".

When compared the descriptions it seems that, Susruta has given a detail description of these substances in comparison to Charaka. Hence discussion on "BISHA" as per Susruta is considered to be more beneficial and informative.

Definition and Classification.

Poisoning is a common emergency situation faced by the medical practitioners almost always in their day to day practice. The patients are generally brought to hospital or doctor with serious signs and symptoms when a prompt and effective management is needed. The substance that has caused the situation may be a chemical like pesticide, phenyl, a vegetable, like oleander seed, croton seed or bite of a living object, like snake, scorpion etc.

The word "BISHA" derives from the root "BISHADA" that means "grief" or "unhappiness". Substances of this group are defined as them that produce unhappiness (disease /suffering) of the living that comes to its contact. Explaining details about the Bisha the definition is given as "these are the substances, that, after coming to the contact with the body produce vitiation of the anatomical and physiological constituents (Dosha, Dhatu etc.) and cause disturbance in Health (disease free state) and even can cause death. These substances are classified by the Ayurvedic scholars in different views and the signs symptoms and treatment modules are also described in detail. Though there is some difference in the views of different scholars then also the basic concepts and principles are almost same. Charaka discuss about this group of substances only in one chapter whereas Susruta in 8 chapters.

Bisha is basically classified into two major groups by Susruta as – (1)Sthavara (inanimate origin) and (2)Jangama (Animate

origin)[1]. Inanimate poisons are found in 10 sources (Adhithana – the specific parts where the active principles that acts as poison remains).

The 10 adhithana of Sthavara bisha are mentioned below with example [2].

1. Root (moola). Example – Oleander (Aswamara) , Indian liquorice (Gunja) etc.
2. Leaf (patra). Example – Cannabis (bhanga) etc.
3. Fala (fruit and seed). Example – Marking nut (bhallataka), Croton seed (jaipal) etc.
4. Flower (pushpa). Example – Cannabis (bhanga) etc.
5. Bark (twak). Example – Antrapachaka (a controversial and unknown plant)
6. Latex (Kshira). Example – Milkhedge (snuhi) , Madar tree (akand)
7. The central portion of the stem (sara) – Kartariya (a controversial and unknown plant)
8. Dried exudate of the plant or fruit (niryasa) – Opium (ahiphe-na)
9. Minerals or matels (dhatu) – fenashma , haritala (both are Arsenic compounds)
10. Stem (kanda – rhizome) – Aconite (batsanabha)

The animate poisons are said to have 16 specific sites where the active principle with poisonous potency remains. They are as follows [3].

- Vision (dristi) – Envenomation can occur even through the vision of the creature . Some very strong and poisonous snakes are considered to be in existence. Their vision is said to be sufficient to cause poisoning of the individual who comes to their range of vision. Example – Basuki , Takshak etc.
- Expiration (nihswasa) – Only by expiration these creatures can cause poisoning to the individual . Spitting Cobra may be considered to be in this group. Basuki, Takshaka etc. are the divine snakes mentioned in the Ayurvedic classics in this group.
- Fangs (modified teeth) (dangstra) – Terrestrial snakes (bhauma sarpa). Example – Cobra, viper etc.
- Nail (nakha) – Injury with the nails cause poisoning . Example – cat (marjara), dog (swa -kukkura), monkey (banara) etc.
- Urine (mutra) – Contact with urine causes poisoning. Example – Chipitaka , Picchitaka (these are controversial creatures. No description about them is found in the classics). Urine of house lizards is also poisonous.
- Stool (purisha) – Contact with stool produces poisoning . The examples given in the classics are not known (like Chipitaka, Picchitaka etc.). Stool of house lizard causes poisoning.
- Semen (sukra) – Direct or indirect contact with semen causes poisoning. Example – rodent (mushika).
- Saliva (lala) – Touching the saliva produces signs -symptoms of poisoning. Example – spider (luta).
- Menstrual blood (artava). Example – spider (luta).
- Mouth (mukha) – Touch or bite with the mouth only (without injury with teeth) can cause poisoning . Example – spider (luta).
- Biting organ in the mouth (sangdangsa). Example – spider (luta).
- Flatus (bishardhita). Example – Chitrasira, Sarava etc. (the de-

scription of these animates are not available in the classics).

- Bones (tundasthi). Example – The bone of the animal that dies due to poisoning are poisonous. Any injury or touch with them can cause local/systemic poisoning.
- Bile (pitta). Example – bile of some fishes (classically mentioned Sakuli matsya) are poisonous.
- Body hairs (shuka) – Some animates contain hair on the body . When it is touched these hairs enter through the skin and cause severe irritation that can cause local as well as systemic irritation.
- Dead body (shava) – Touch to the dead body of snake, insect etc. causes poisoning.

Treatment of Poisoning.

Modern Toxicology mentions the principles of treatment of poisoning in brief , only advising as [1]. removal of unabsorbed poison from the system, [2]. use of antidotes, [3]. elimination of the absorbed poison, [4]. treatment of general symptoms and [5]. maintenance of the patient's general condition [4]. Susruta, being of the same opinion with Charaka mentions 24 treatment procedures (chaturvingsati upakrama) for different types of poisoning. A brief of these 24 procedures with modern equivalent terminology and indication are mentioned below [5].

- Chanting of prescribed verses (Mantra) - As admitted by Susruta this is the strongest and most effective treatment for snake-bite. The mode of action is very difficult to explain.
- Tourniquet (Arista) – Application of ligature with soft substances, like gauge , internal soft part of the bark of tree etc. It is said that, this reduces the speed of spread of the poison.
- Incision/excision (utkartana) – These are the procedures in which the part affected is excised (applicable if the bite occurs in a part that can be excised like finger, toe etc.) and application of incision for blood letting (applicable in the parts that can not be excised, like, chest, back, head etc.)
- Squeezing (nispidana) – With this procedure the bitten part, after giving incision, is squeezed to expel out the poison mixed blood.
- Sucking (chushana) – This is the process with which more quantity of blood can be expelled out from the body by following prescribed procedure and instrument when the signs and symptoms are severe.
- Cauterization (agni) – Cauterization of the part by using indirect / direct heat (hot ghee, hot cautery) etc. are specially indicated in dog bite, cat bite, nail injury etc. with an aim to haemostasis, sterilization etc.
- Washing (parisheka) – The part affected (external contact with vegetable poison , bite, nail injury etc.) are thoroughly washed with water or medicine to clean and reduce the speed of spread of the poison.
- Bathing (avagahana) – In this procedure the part affected or the body as a whole is bathed with water or medicine to reduce the affect of poison and also to revive the patient from serious state like coma.
- Bloodletting (raktamokshana) – This is another method of expelling out of the poisoned blood by using some prescribed methods.
- Induced vomiting (vamana) – By using some medicines or methods the Gastro intestinal irritation is induced and the un-

wanted harmful substances are expelled out through the oral route. Specially indicated and beneficial in orally taken poisons.

- Induced purgation (birechana) – The poison inside the body is expelled out through the anal route by using some medicines. This process is helpful in the condition when poison is taken orally and the time interval becomes more than 3 hours.
- Incision on the scalp (upadhana) – Incisions of crow leg shape (kakapada) is given on the scalp . When bleeding starts fresh meet is applied over the incision. The process is continued for a prescribed duration. This process is advised to opt when the patient is at terminal state and all other treatments showed no result.
- Protection of the heart (hridayabarana) – The heart is to be protected by using cardiac protective/supportive medicines / food etc. Ghee, milk, butter etc. are advised to use for the purpose. It is said that, Protection of the heart protects the life of the patient.
- Collyrium (Anjana) – Medicines (strong and irritant) are advised to use around the eyes when the patient suffers from defect of vision, excessive discharge from the eyes etc.
- Nasal application of medicine (nasya) – When the patient shows the signs of depression of the nervous functions then strong /irritating medicines should be applied through the nostrils that can help in revival of the patient from a serious state of unconsciousness.
- Application of smoke (dhooma) – Application of some medicated smoke are advised with the aim to recover the patient from serious state. Smoke is also advised for satisfactory healing and cleaning of some local injuries, like dog bite, cat bite etc.
- Application of lickable medicines (leha) – Some special preparations that are taken only by licking are advised to use that can help the patient to get nutrition and relief from the effect of poison.
- Systemic application of medicines (aushadha) – Some medicines are advised specially to use in poisoning that are considered to have anti poisonous activity.
- Symptomatic treatment (prasamana) – The associated symptoms are advised to treat by using appropriate medicines mentioned in respective references by the experts.

- Spraying of medicine (pratisarana) – Medicine, in powder form, is advised to spray on the part affected which reduces the local signs and symptoms.
- Antidote (pratibisha) – These are the preparations that directly act on the poison and neutralize the affects. A number of preparations are mentioned by Charaka and Susruta in this context.
- Restoration of sense (sajnasangsthapana) – When the patient remains senseless (sajnahina) measure should be opted to bring him to a normal state . A number of procedures and medicines are advised for the purpose.
- Local application of medicine in paste form (lepa) – When there is local contact with poison then, to reduce them , local application of medicine in paste form is beneficial . Soothing agents are special need in this state.
- Revival from death (mritasanjivana) – A patient of terminal state (deep coma) is advised to treat with some medicines and procedures that can revive the patient by arousing from the state of deep coma.

The study on the concept of Susruta about poison (Bisha) clearly reflects the study, observation and research of the scholar on the specialised field . The definition , classification, treatment etc. of poisoning elaborated by the scholar can be considered to be of great value . Scientific study and research on the concepts can explore many important facts for the benefit in the medical field.

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