

A REVIEW ON TOXICOLOGY IN KAUTILIYA ARTHASASTRA

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ABSTRACT

Agada tantra is an Ayurvedic branch that deals with the diagnosis and treatment of various plant and animal-derived poisons. Toxicology is the science that deals with the properties, action, toxicity, fatal dose, detection, estimation, treatment, and autopsy finding (in case of death) of poisonous substances in modern medicine. Arthashastra, written by Kautilya, also known as Chanakya, is a well-written Samhita that covers all four Purusharthas. The toxicological section of Arthashastra discusses preventions, signs of poisoned food, articles, and poison giver. The indications and symptoms of hazardous food described in this article are very similar to those described in Ayurvedic scriptures. It's worth noting that even the characteristics of poisoned items like linens and sheets are specified. The purpose of this review is to explore and comprehend the toxicological aspects of Kautiliya Arthashastra.

KEYWORDS: Kautilya, Arthashastra, Toxicology, Ayurveda.

INTRODUCTION

Arthashastra authored by Kautilya, otherwise known as Chanakya is a well written Samhita, concerning all the four Purusharthas. Actually, it is a code of conduct for every individual, which puts forth a number of rules and regulation for wellbeing in all walks of life. A definition of this sastra is found in the concluding section of the text. That is; "artha is the sustenance or the livelihood (vritti) of men; hence it becomes an all pervading one. The word Arthashastra means the science of Purushartha. It comprises measures for improving quality of life in all walks.^[1] Artha also means sustenance or livelihood of man, which may be more relevant in a physician's view. The text, also known as "Dandaneeti" or Law of Punishment, is written by Vishnu Gupta Chanakya, who is also addressed as Kautilya^[2] It is generally considered as the period of the book is 4th century B.C. The compendium has 15 Books, one hundred and fifty Chapters, one hundred and eighty Sections and 6000 verses^[3] The language used is Sanskrit, and it has got commentaries in many languages of India.

Toxicology is the science dealing with properties, actions, toxicity, fatal dose, detection, estimation, treatment and autopsy findings (in case of death) in relation to the poisonous substances. Forensic toxicology deals with the medical and legal aspects of the harmful

effects of chemicals on human beings. It involves not only the identification and quantifying of a drug, poison or substance in tissues, but also the ability to interpret the results of one's findings^[4] Sections 284, 299, 300, 304 A, 324, 328 IPC deal with offences relating to administration of poisons.

MATERIALS AND METHODS

BOOK 1, CHAPTER 20, 21 deals with precaution and protective measures against Fire, Poison, and Serpents.

In olden days, the King was susceptible for attacks by enemies by various methods including poison, fire etc. It was practiced in mass and against individuals. So, the King should be aware of this fact and should take the necessary precautions against them. That is why the description lies in the prime importance in the text.

1. Preventive measures against poison

Growing and letting Peacocks, Spotted deer, Mongoose etc. in the vicinity of the royal residence.^[5] It is believed that their presence may reduce the chance of poisoning.

2. Prevention of food borne poisoning

Cooking should be done in a guarded place. Food should be offered to fire and birds first.^[6]

3. Signs of poisoned food

- When put in fire
 - When give to birds
 - When poison is mixed with Boiled rice, Broth, Liquid substances
 - When poison mixed in wet, dry, and hard substances
4. Signs when articles like Bed sheets, covers and metallic articles and gems are poisoned.
 5. Signs of poison giver

Signs of Poisoned Food Mixed With Fire^[7]

WITH FIRE	Blue color of the flames and smoke, and a crackling sound of the fire.
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Signs As Seen in Birds^[8]

1.	PARROT	Shrieks
2.	HERON	Becomes frantic
3.	PHEASANT	Faints
4.	CUCKOO	Dies
5.	CHAKORA	Discolored

Signs of Poisoned Food Articles^[9]

1	BOILED RICE	Having the color of a peacock's neck, having a sudden change of color when stale, being full of unabsorbed water, and not being moist.
2	BROATH	It quickly dries up as well, remaining in a state of boiling, having a soiled appearance, the presence of foam, becoming curdled and the destruction of smell, touch, and flavor.
3	LIQUID	The appearance of a shade of color, fainter or deeper than usual, and the formation of upward lines at the edges of the mass of foam.
4	JUICE	Blue line in the middle.
5	MILK	A Reddish line
6	WINE AND WATER	Black line
7	CURD	Dark line
8	HONEY	White line

Signs Of Poison Mixed With Wet, Dry, And Hard Substances^[10]

WET	In boiling, it quickly fades, becomes overcooked, and takes on a dark blue color.
DRY	Quick falling to pieces and loss of color.
HARD	Hard substances soften and soft substances harden.

Signs When Articles Like Bed Sheets, Covers And Metallic Articles And Gems Are Poisoned^[11]

BED SHEETS AND COVERS	Possession of dirty circles and the shedding of threads, wool, or hair.
METALS AND GEMS	Being smeared with mud like dirt and the destruction of the smoothness, color, weight, power, class and touch.

Signs Of Poison Giver^[12]

POISON GIVER	Having a dry, dark face; hesitation in speech; excessive perspiration and yawning; trembling, stumbling; looking about during speech; agitation in work; and not remaining steady in his own place.
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Toxicology in Ayurveda

Susruta Samhita, which is the oldest of known *Samhitas*, written by *Maharshi Susruta* has an entire portion, which is called *Kalpasthanana*, devoted to the toxicological considerations in *Ayurvedic* parlance. It has eight chapters, of which the first chapter, *Annapana Raksha Kalpa*, describes protection from poisoned foods and drinks, also the features of poisoned materials like ornaments, cloths etc. are described in this chapter. Same chapter contains description about the need of the King

to be protected. It also describes the qualities of a Royal physician who will be capable of protecting King from his enemies. The Royal kitchen and the physician who should be appointed as Kitchen superintendent is also described. The identification methods of poisoned food and other articles, poison giver, and modes of poisoning are described. *Samanya chikitsa* of each also described in the last portion of the chapter. Mentioning of poison maid-*visha kanya* also is seen in the same chapter.

Description of various inanimate poisons and bites and stings are seen in all the book.^[13]

Charaka Samhita also contains description about these topics, but not in this much elaborate manner. Examination of attendants, examination of poisoned food and regimens, characteristics of poisoned food and other articles, and the need of King to be protected is described in 23rd chapter of *Charaka Samhita Chikitsa Sthana, Visha chikitsita*.^[14]

Ashtanga hridaya mainly deals with the treatment of *visha* only.^[15] *Ashtanga samgraha* also contains almost same details as in *Susruta Samhita*.^[16] Among these texts, most important place is given to *Susruta Samhita*.

DISCUSSION AND CONCLUSION

In their own way, the toxicological descriptions presented in *Kautiliya Arthasastra* are significant. The indications and symptoms of hazardous food described in this article are very similar to those described in *Ayurvedic* scriptures. Symptoms when exposed to fire, for example, are similar to those described in traditional *Ayurvedic* writings such as *Charaka* and *Sushruta Samhithas*. It's worth noting that even the characteristics of poisoned items like linens and sheets are specified. Examining procedures used back then may have been effective at the time. The requirement that a physician be appointed demonstrates the importance of medical personnel in the courtroom. Poisoning for the purpose of putting one's life in peril is still a phenomenon in today's world. Poisoning in the military and biological warfare are two examples of this.

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