



Review Article

CONCEPT OF PRATIVISHA: AN UNMAPPED AREA

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ABSTRACT
Agad Tantra is the one branch of *Astang Ayurveda*. It deals with all poison whether it is animate or inanimate. Various treatments are explained for all poisoning. General management and specific treatments are given, in which *Prativisha* is one. *Prativisha* is the poison to be used as a treatment against another poison. In modern, *Prativisha* is comparable with antidote. Even though for the use of *Prativisha*, some specific indication and contraindication are clarified. If these rules are not followed then patients life would get endangered. For the animate poisoning condition, some plant poisons are described and for the inanimate a specific way is described to use animate poison. In some parts of country, only folklore *Vaidyas* are using this line of treatment but not practiced by all. This area is not so much explored in research field due to life risk and ethical issues. Only a few studies have been found on the use of *Prativisha*. So, there is need to explore the area firstly through the lab experiment to know the mechanism how a poison molecule can be converted into less toxic molecule. After that, animal experimentation to know the safety and efficacy in all aspect of *Prativisha* so that it can be used in treatment line in human being.

INTRODUCTION

Agad tantra is the branch of Ayurveda which deals with the all animate, inanimate poison, their clinical feature and treatment. Twenty-four treatment modalities are described as *Samnaya Chikitsa* (general management) for treatment of any poisonous condition. These modalities have to be used according to the poison and patient condition, for e.g.- if patient is of snake bite, then *Arista Bandhana* (ligature) work as first aid and it prevent further absorption of poison but it should be done within hundred *Matra Kaala* (approx. 3 minutes), after this time period; ligature will be of no benefit. In that state, *Raktmokshana* would be benefited along with *Shaman Chikitsa*.^[1] In these twenty-four modalities, one is *Prativisha* and to be used as last treatment option. *Prativisha* is the word which means opposite *Visha*. These treatment modalities must be used in specific circumstances otherwise at the place to prevent the life, it would be

fatal for patient. In *Astang Sangrah*, one full chapter is devoted to the *Prativisha* use in poisoning and other disease, but regarding the use of *Prativisha*, many legal and ethical issues are there.

Prativisha Paryaya^[1]

Prativisha can be known as antidote, counter poison, *Pratyagoushadha*, *Nivaranopaya*, *Nivarana*, *Pratyak chikitsa*, *Shamanopaya*, *Shantiupaya*.

Definition

- In *Atharveda* reference found about the *Prativisha* concept; if the person, who has been bitten by snake, bite the *Sarpa* then due to the *Visha* effect, *Sarpa* will die. Some explanation about drugs named as *Tabuva* and *Tastum* are found that these drugs destroy the consequence of snake venom.^[2]
- In *Charak Samhita*, Acharya Chakrapani in commentary of *Prativisha* word, has given the definition as- use of another poison for after one poison.^[3]
- In *Ashtanga Sangraha* definition of *Prativisha*, as to make victory over poison.^[4]
- In modern text, *Prativisha* by the definition view can be co-related with Antidote.

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When Prativisha should be administered

There are explanations about *Samanya Chikitsa* and specific treatment for all animate and inanimate poison. When all these treatments got unsuccessful result and physician is sure that patient is about to die; then only the *Prativisha* should be administered. Before manifestation of seventh *Vega*, *Prativisha* should be administered, neither before it nor after it otherwise other complication will take hold. [5] *Acharya Vagbhatta* has stated that only after the completion of fifth *Vega* and before the seventh *Vega*, *Prativisha* can be used. [6]

While selecting the *Prativisha*, one simile is said to keep in mind that how a strong person always wins from the weak person, in the same way, if a person suffering from low potency poisoning, and by without analysis if the strong poison given as *Prativisha*, then it would become fatal for that person. So, qualities and potency should be analysed properly. [7]

What can be given as Prativisha

For the treatment of poisoning condition, *Agad* formulation are described of two types, one is *Savisha Agad* (with poison content) and *Nirvisha Agad* (without poison content). If physician is in doubt whether the patient is envenomed or not then only *Nirvisha Agad* (without poison content) should be used. *Savisha Agada* (with poison content) should be used in condition where physician is assured of envenomation had happened. Reason for this choice is that if the *Savisha agad* is used in *Nirvisha* (no envenomation) condition then it would become fatal for patient. [8]

Saaktuka, Mustak, Shringi, Vaalak, Sarshapa, Vatsnabh are only indicated for using as *Prativisha* because they are *Snigdha, Ghana, Guru Guna*. *Kaalkuta* is strictly contraindicated. [9] In this list, only *Vatsnabh* is identifiable in present era, others are not identifiable or become extinct. If any person had taken the inanimate poison, then he should be made to bite with snake. If person is bitten by animate poison, then patient should be given inanimate poison through oral root and in form of *Lepa* (paste) at bite site. [10]

In Stahavra Visha

One flesh fragment is taken and it is made to bitten by angry snake then it should be converted in powder form after drying up. The patient who had taken poison, this powder should be given as antidote. [11]

In Jangama visha

When poison is given as *Prativisha*, it should be administered with milk, honey, and ghee. Also, can be given with *Tagar (Valeriana wallichii)* and *Sinduvara (Vitex negundo L.)*; *Acharya Vagbhatta* also named it as *Mritsanjeevana*. In *Aakkhu Visha* (rat poisoning),

poison should be given with *Shirish pushpa (Albizia lebbek)* and *Tagar (Valeriana wallichii)*. [12]

Dose of Prativisha [13,14]

1. In snake bite - the inanimate poisons should use in the doses as-
Minimum dose - 4 *Yava* (1 *Ratti*= 125mg)
Moderate dose - 6 *Yava* (187.5mg)
Maximum dose - 8 *Yava* (250mg)
2. In insect bite - 2 *Yava Matra* (62.5mg)
3. Scorpion sting - 1 *Tila Matra*
4. Spider envenomation-should not be consumed orally; it should be applied to skin after incision.

After using Prativisha

After giving *Prativisha*, *Ghrita* should be given to drink to patient, or *Arjuna* bark powder given with honey and *Ghrita*. One more formulation is explained in for *Ghrita kalpa - Ghrita sadhita* with mixture of some drugs like *Bharangi, Dadhi, Dhoom* etc should be given for drinking. [15]

Contraindication

- When physician is not assured that the case is of envenomation or poisoning.
- When poison is not present in *Rakta*
- Before fifth *Vega* and after seventh *Vega*
- In *Loota Visha*

DISCUSSION

Poison or venom is composed of many types of enzymes, proteins and chemical which cause cellular injury. Various mechanisms take place in body through these contents. Enzymes cause cellular injury through the action of phospholipase and protease. These enzymes cause the phospholipase causes cellular injury and results in haemolysis, neuronal damage, and necrosis. Proteins affect the ion channel of cell result in neurotransmitter which result in neuromuscular effect which include dizziness, fainting, numbness, blurred vision, muscle cramps, ataxia, paralysis, muscular pain, hypersalivation, nausea, vomiting.

In cell, the calcium level is regulated by calcium channel and these calcium channel regulate the neurotransmitter. When Ca channel depolarise, the ligand stimulation increases intracellular Calcium release and neurotransmitter. On the opposite side, animal toxin causes the channel to hyperpolarises. When calcium channels get closed and decrease the neurotransmitter secretion. Like calcium channel, ion channel also gets affected by toxin. Sodium and potassium channel is mainly affected by toxin. Marine animals and some snake's venom cause disruption in ion channel. Haemodynamic changes are caused by proinflammatory cytokine and results in organ injury and causes in increase in vascular permeability and manifest pain, swelling and redness. Immunological responses usually result in skin rashes and oedema. [16]

In Ayurvedic context, ten *Gunas* are explained of *Visha* (poison) through which a poison hampers the normal physiology and vital system and results death. (Table no. 1)

Table 1: *Visha Gunas*^[17,18] and their mechanism of action and possible modern co-relation^[19]

<i>Guna</i>	Action	Modern co-relation
<i>Laghu</i>	<i>Darupkarma</i>	Low molecular weight
<i>Ruksha</i>	<i>Vataprakopa</i>	Desorption of liquid secretion
<i>Aashu</i>	<i>Shigra</i>	Due to easy absorption, rapid action on cell
<i>Vishada</i>	<i>Asaktagatidosham</i>	Can cross blood brain barrier
<i>Vyavayi</i>	<i>Vyapnoti kevlam deham</i>	Hyaluronidase enzyme increase the absorption of in tissue ^[20]
<i>Tikshana</i>	<i>Marmaghana</i>	Neurotoxin act on ion channel and acetylcholine receptor and result in respiratory paralysis
<i>Vikasi</i>	<i>Pranahara</i>	exasperation of tissues
<i>Sukshama</i>	<i>Raktprakopa</i> , enters in <i>Sharir-avayava</i>	Convert in low molecular weight metabolites after biotransformation, through which it can penetrate in minute channels
<i>Usna</i>	<i>Pittaprakopa</i>	Phospholipase & proinflammatory cytokine act on cell and result in cell injury
<i>Anirdeshya rasa</i>	<i>Kaphprakopa</i> , <i>Annarasanuvartanam</i>	Increase the cholinergic activity
<i>Apaki</i>	Difficult to digest	Skip the metabolism action and direct absorption

Probable action of *Prativisha*

In treatment of poisoning, poison is told to be best anti-toxic drug.^[21] It could be due to *Visha Guna*, *Visha Gati* and *Doshatava*.

Visha Guna- Poisoning condition is an emergency where every second, vitals are depriving, so for that situation the medicine having quick action would be needed. Poison having *Aashu* and *Vyavayi guna* are the responsible for having quick action in body without wasting time in absorption and metabolism. Due to *Sukshama* and *Laghu Guna*, *Prativisha* goes to in very minute channels and neutralise the action of *Visha* (poison).

Visha Gati is told to be opposite of animate and inanimate poison. Animate poison is having the *Urdhava gati* (upside moving) and inanimate poison having *Adhogati* (downward moving). Hence it is very difficult to describe about the *Gati* concept in modern literature.

Dosha of visha- *Sthavar Visha* (inanimate poison) hold the characteristic like of *Kapha* and *Jangam Visha* (animate poison) possess the qualities of *Pitta*. *Kapha* and *Pitta* qualities are opposite to each other so the produce opposite physiological action; hence they neutralise each other's action in body.

Analysis of rules to use *Prativisha*

In Ayurveda, *Prativisha* is said to be used for the treatment of poisoning condition but at the same time, specific rules and regulation are said to be strictly follow. Hence poison is told to be best anti-toxic treatment but it does not mean that in every poisoning condition physician must use the poison in treatment. First, other *Agad* formulation and

procedure should be followed. In last where all other treatment gets failed and no hope left for patient's life then only poison should be used. The reason is, if patient get died due to poison then there will be no guilt.

Poison should not be given alone but are said to be given with the other anti-poisonous drug or *Anupana*, so that patient should be safe from the unwanted effect. In inanimate poisoning physician is not subjected for direct bitten by snake or scorpion, instead of that, the fresh flesh part is made to bitten by snake because the fresh blood absorbs the poison molecule or may be there some chemical reaction so that the toxin molecule converts in less toxic molecule.

In animate poisoning, only four plant names are given to use as *Prativisha* because they are having the properties of *Snigdha* (unctuous) and *Guru* (heavy), so that their *Ruksha* (dryness) and *Laghu* (light) would not produce any undesired effect. *Sthavar* (inanimate) poison is told to give with other anti-poisonous drugs like ghee, milk, *Tagara Sinduvar* etc so that the harmful effect of the *Prativisha* can be neutralise.

Few example how *Prativisha* counteract the effect of *Visha*^[21]

In *Sarpa Visha* specially *Darvikara Sarpa* are *Vatta* and *Rajimatha* are *Kapha Prakopaka* and for this *Mahavisha* should be used as *Prativisha*. In present era, in *Mahavisha* only *Vatsnabha* is identifiable. So *Vatsnabh* should be given as *Prativisha*. *Darvikara* and *Rajimatha* snake venom act on nerves and cause pain and *Vatsnabh* is said to be *Vednasthapaka*. Causes respiratory paralysis and *Vatsnabh* is respirator activator and for cardiac also.

In *Alarka Visha Dhatura* is explained in treatment. In *Alarka Visha, Sangyavahi Srotas* is involved and it is said to *Kapha-Vaataj* whereas *Dhatura* is *Kapha Vaata Shamak* and its action is mainly on central nervous system. *Alarka Visha* symptoms are *Lalasarava* (mouth) and *Dhatura* act on it by acting as anticholinergic action and reduce the all secretion of body.

Against cobra venom (*Naja naja*), *Vatsanabha* (*Aconitum Ferox*) was taken as *Prativisha* in wistar rats. Two doses (medium and High- 16.83mg/kg & 22.5mg/kg body weight) were chosen against the venom of cobra (*Naja naja*) LD50 0.49 mg/kg. Survival time was found increased in medium dose group and show protection on heart and liver cell.^[22]

In one study, three groups of albino Wistar rats, six in each group were taken. Daily *Kuchala* was given in dose of 45mg/kg for ten days. In one group, only distilled water was given. In second group, trial drug i.e., *Jambu* was given and in third group, standard drug Valporic acid was given for thirty days. In result, *Jambu* seeds show 64.7% efficacy against convulsion and also show regenerative changes in histopathological study of spinal cord.^[23]

CONCLUSION

Agadtantra being an imported branch in *Ashtang Ayurveda* but in the field of practice, except few folklore practitioners, could not find much more. All clinical practice is limited to *Dooshivisha* and *Garavisha* treatment. Poisoning treatment is a negligent part due to less applicability specially the *Prativisha* due to ethical issue consideration. An era need is there to brought back the limelight on *Agad Tantra* through the research work otherwise the whole treatment described by *Acharya* would become theoretical only.

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