A Review on Toxic Drug – Gunja

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ABSTRACT

The Visha Dravya Gunja is mentioned in Samhita and other Ayurvedic texts. In Samhita it is mentioned under Sthavara Visha and in the texts of Rasashastra it classified is under Upavishas. The history of poisons and poisoning dates back several thousand years. Abrus precatorius is a severely invasive plant in warm temperate to tropical regions, so much so that it has become effectively pantropical in distribution. It has been estimated that some form of poison directly or indirectly is responsible for more than 1 million illnesses worldwide annually. Most cases of poisoning actually go unreported, especially in Third world countries. The incidence of poisoning in India is highest in the world. The causes of poisoning in India are highest in the world. The commonest agents in India appear to be plant toxins, pesticides, chemical and household poisons. The Shodhana of Gunja is also mentioned in Ayurvedic texts. In this manuscript the detail explanation regarding Gunja in Ayurvedic and contemporary texts has been compiled and critically analyzed.

Key words: Gunja, Abrus, Plant toxin, Shodhana.

INTRODUCTION

The history of poisons and poisoning dates back several thousand years. They were using poisons for hunting. Early poisons were exclusively plant, animal toxins and minerals. The ancient Indian text Rigveda also describes several plant poisons. An early treatise on plant poisons is De Historia Plantarum, by Theophrastus. The Greeks used some plant toxins as poisons of execution. Socrates were executed by the administration of hemlock. One of the earliest classifications of poisons was done by Greek physician Dioscorides (AD 40-80) who classified the poisons into 3 groups i.e., animal, vegetable and mineral.[16] The Gunja have been in use in Hindu medicine from very early times, as it is mentioned by Sushruta and other early Aacharya’s.[11]

Abras or Liquorice is a glabrous wiry climber. It is common to tropical and subtropical countries. Abrus is from Greek word meaning graceful, in allusion to the flowers, precatorius - relating to prayer of petitions. Abrus precatorius - rosary beads.[1][13] The leaves are upto 10cm long. The seeds are ovoid, globular, 7mm in length, 5mm in diameter, hard, smooth and shining of two distinct colours. The outer hard shell-like and enclosing a light yellowish brown embryo. The flowering season is july-september. It is common in hedges and bushes.[1][8][12]

Aacharya Charaka mentioned this drug in Vajikarana Adhyyaya and Aacharya Sushruta classified Gunja under Moola Visha. In Bhavaprakasha Nighantu it is mentioned under Guducyadi Varga, Yogaratnakara and other Rasashashta text mentioned it under Upavisha.[4][2][7] The two varities of Gunja are mentioned i.e., Shweta Gunja and Rakta Gunja. Out of this Shweta Gunja (white variety) is considered as highly toxic.[2]
Several synonyms are mentioned in Ayurvedic and other contemporary texts. The *Rakta Gunja* synonyms are *Gunja*, *Chudamoni*, *Tamra*, *Kakachincha*, *Kakanthika* and *Rati*. Whereas the synonyms of *Shweta Gunja* are *Shweta*, *Kakapiluka*, *Kakadani*, *Durmuksa*, *Chakrika*, *Chakrashalya*, *Uchcata*, *Anagaravalli* and *Billabushana*. The common names of *Gunja* are rosary pea, Indian beed, Buddhist rosary bead. There is a difference of opinion among our *Aacharya’s* regarding the identification of drug *Gunja* based on synonyms. Some controversial synonyms are *Uchchata*, *Kakadani*, *Chudamani* and *Swetakambhoji*.

According to Ayurvedic texts *Gunja* weighs 1 ratti (approx 125mg) and according to modern toxicological texts *Gunja* weighs 105mg. Acc to modern texts it is an organic irritant poison. The seed contains active principle “abrin” resembling ricin in its physiological action. The abrin is similar to Viperine snake venom. The abrin is very toxic, soluble in sodium chloride and decomposes upon heating to 85°C. The roots of abrus contain 1.5% substances resembling glycyrrhizin and leaves also yields glycyrrhizin. Hence *Gunja* root is used as substitute for glycyrrhiza.

The properties of *Gunja* are,
- *Rasa* - Tikta, Kashaya.
- *Guna* - Laghu, Sheetala and Rooksha.
- *Veerya* - Kinchith Ushna
- *Vipaka* - Katu.

The *Moola*, *Beeja* and *Patra* are used by Vaidya’s. Acc to modern all parts of *Gunja* are considered as poison. For *Bahya* and *Aabhyantar Prayoga* the purified *Gunja* should be used. If unpurified *Gunja* is used then it leads to *Vamana*, *Tivra Virechana*. If taken in large quantity it produces *Visuchika Lakshanas*, *Mada* and *Moorcha*. According to modern toxicological texts it produces vomiting, bloody diarrhoea, miosis, cardiac arrhythmias, convulsions and bloody diarrhoea.

Our *Acharya’s* mentioned the purification of *Gunja* seeds. The *Gunja* seeds are pound it into small pieces and tie in cloth to make *Pottali*. Keep the *Pottali* in *Dolayantra* which consists of *Godugdha* and boil it for 6hrs. Another method is prepare *Pottali* by keeping *Gunja* seeds and keep the *Pottali* in *Dolayantra* which contains *Kanjir* and *Swedana* for 3 hours and dry it in sunlight. Another method is keep the *Pottali* which contains *Shweta Gunja Beeja* in *Dolayantra* conatins *Godugdha* for 3 hrs. Remove the outer shell of seeds and wash in hotwater. By boiling the seeds in water the toxicity is reduced. The antidote is *Tanduliya Rasa* (*Amaranthus spinosa*) and sugar followed by milk. Acc. to modern gastric decontamination (lavage, charcoal), alkalinisation of urine and diazepam for convulsions.

*Gunja Beeja* used as *Balya*, *Vatahara Viryavardhaka*, *Kapha-Pitta Nashaka* and *Kamodeepaka*. It is beneficial in *Swarabheda*, *Galashota*, *Kantavedhana*, *Vrana*, *Trushna*, *Galashosa*, *Uruthumba* and *Indralupta*. Acc. to *Rasa Tarangini* the therapeutic dose is ¼ to 3/4 Ratti and acc. to *Bhavaprakash Nighantu Moola - 2 to 4 Masha* and *Beeja – ½ to 11/2 Ratti*. Acc to modern toxicology the fatal dose is 1 to 2 crushed seeds and 120mg of abrin.

Our *Acharyas* mentioned certain *Yogas* of *Gunja*. They are *Gunjadhya Taila*, *Gunjajeewana Rasa* (2 *Ratti*), *Gunjabhadra Rasa* (2 *Ratti*), *Goranacandi Gulika*, *Nilibhringadi Tailam* and *Svetagunjadi Taila*.

The *Aamayika Prayoga* of *Gunja* are
- *Gunja + Jala* - prepare paste and apply in case of *Sandhishota*.
- *Gunjakalka Lepa* - Do *Sirapracanna* in *Grudrasi* and apply *Gunjakalka Lepa* to reduce pain.

The anti-fertility properties of the seeds of abrus precatorius has been studied by Zia-ul-Haque et.al (1983). The other uses of *Gunja* are the jewellers in India use the seeds as a weighing measure for gold or precious stones. The needle which is prepared out of *Gunja* and other drugs is used to kill cattle. Hence it is famous as cattle poison.
CONCLUSION

There are 2 varities of Gunjas are mentioned in Ayurvedic classical texts. Out of which the Shweta Gunja is more toxic. Both types of Gunja are used in medicine externally and internally. The Aacharya’s mentioned different types of Shodhana for Gunja. If the Shodhana is not done properly it is going to exert toxic effects and its antidote is also mentioned. Based on the synonyms there is confusion regarding the identification of drug Gunja. Some author opines that the synonym Uchchata mentioned by Acharya Charaka in the context of Vajikarana is Gunja. The Dalhana in his commentary has clarified that the drug Uchchata is a small plant. He also mentioned that the persons who consumes Uchchata along with Godugdha will be able to copulate with hundred ladies. But in case of Gunja it a creeper and it is a mild aphrodisiac. Hence Uchchata mentioned in the context of Vajikarana by Aacharya Charaka is not Gunja. According to Anandashram edior the synonym Kakadani is considered as Gunja but not in case of Dhanvantari Nighantu. The Dhanvantari Nighantukara considered Chudamani i.e., bangles of Adivasis and such hilly tribes as Gunja. He also consider Shweta Kambhoji as white variety of Gunja i.e., Shweta Gunja. The roots of abrus contain substances resembling glycyrrhizin and leaves also yields glycyrrhizin. Hence Gunja root is used as substitute for glycyrrhiza. Although Gunja is a toxic drug, if purified properly acc to classical texts and in proper therapeutic doses it will cure several ailments.

REFERENCES


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