INTRODUCTION

The scientific name of gunja, Abrus precatorius, is derived from two Greek words, Abrus—meaning graceful, as it has beautiful flowers, and Precor which means to pray (as it is used to make garlands meant for prayers). In ancient India, its seeds were used by goldsmiths as they are fairly constant in weight i.e. about one-tenth of a gram. Hence the name ratti. It is said to be the symbol of love in China. When powdered and mixed with datura it becomes highly toxic and makes it one of the most beautiful poisonous plants in the world. Ancient stories have mentioned the use of 'sutaris' by Kings to kill their enemies. Also it is believed to have magical properties. Some used it as a means of vashikaran, in exorcism cases etc. It is an irritant, organic, vegetable poison. As per Ayurveda, it is considered as sthavarávishaandmoola visha. It is one among the upavishas. Known as phytotoxin is described as a toxic protein and causes agglutination of RBCs and hemolysis. It is antigenic in nature and is therefore, capable of producing antibodies when injected into the body. Other active principles include abrine (amino acid), abralin (glucoside), abricacid, glycyrrhizin (lypolytic enzyme) and N-methyltyprophan.

Toxico kinetics: Due to its cytotoxic and neurotoxic action presents with various clinical presentation even with conjunctival exposure, due to its high dispersibility and absorptive rate. In addition, it also causes hemaglutination and fat depletion, due to fat splitting. Subcutaneous injection proves fatal with in very short duration.

Fatal Dose: 60 to 120mg of abrin or 1 to 2 crushed seeds.

Fatal period: 3 to 5 days.

Toxicity rating: 5 to 6 (supertoxic).

Main risks and Target organs: The main risks include severe gastroenteritis leading...
to dehydration and shock. Ingested seeds can affect GIT, liver, spleen, kidneys & lymphatic system. Infusion of seed extracts can cause eye damage after contact.  

**Toxic symptoms:** Early features of toxicity include burning of the mouth and oesophagus, severe gastroenteritis with vomiting, haematemesis, diarrhoea, malena, abdominal pain, drowsiness, disorientation, weakness, stupor, convulsions, cyanosis and shock. Later, oliguria can occur. Contact with the eyes can cause conjunctivitis and even blindness.

**Diagnosis:** Diagnosis is made by the presence of typical manifestations following ingestion like gastro enteritis with risk of dehydration, haematemesis and malena. Drowsiness and convulsions may occur. Toxicological analysis of body fluids for the poison is not helpful. Plant material, seeds or remnants of seeds, vomitus & gastric aspirate should be collected in clean bottles for identification.

**Prognosis:** Mortality is rare, if prompt, adequate and proper treatment is provided.

**First Aid:** As a first aid, remove all seed particles from the mouth, induce vomiting and save it for identification. Make sure that the patient’s airway is clear & there is adequate ventilation. If eyes are contaminated, wash the eyes thoroughly with running water for 10mins.

**Treatment:** General measures include Gastric Lavage with plain water or potassium permanganate or the use of activated charcoal.

In case of oral poisoning, acid hydrochloric peptic mixture and 10 percent sodium bicarbonate can be given as IV. In case of locally injected poisoning, the suis (needles) are to be dissected out.

**Antidote:** Anti abrin injection is said to be the antidote for the poisoning.

**Household Remedy:** Juice of *Amaranthus spinosus* with sugar candy can be given. The juice of *Chavali* (*Rajmasha*) is given with sugar.

**Medico Legal Importance:** Commonly used as cattle poison. For this purpose, the seeds are crushed with opium, dhatura, onion and water, ground to a paste and rolled to form needles around 15mm, dried in the sunlight till it becomes hard. 2-3 of these needles are kept in a hollow bamboo and blown to the buttocks of the animal. The animal becomes drowsy, unable to move, goes into coma, followed by convulsions and death. These needles are also used criminally and for homicide as well. Also use as arrow poison. Due to its alluring nature, accidental poisoning is common in children.

The seeds were used as birth control pills in the past. When taken internally, it disturbs the uterine function and prevents conception. Seeds are used as an abortifacient as well.

**Postmortem findings:** Findings show inflammatory changes and congestion of the gastrointestinal tract.

**Shodhana:** Roots kept in the decoction of nut grass tubers (*Cyperus rotundus*) for an hour in intense sunlight for drying. Seeds should be crushed & tied in a piece of cloth in the form of potali. It should be cooked in *Dolayantra* by adding cow’s milk for 6 hours. Then washed with warm water & dried.

The same procedure, if carried out in *kanji* for 3 hours also detoxify the gunja seeds.

**Properties of purified seeds:** The gunja seeds are bitter, pungent and astringent in taste, pungent in the post digestive effect and have hot potency. It possesses light, dry
and sharp attributes. It alleviates kapha and vata doshas.  

CONCLUSION

One among the upavishas, gunja is a toxic plant. Due to its attractive seeds, it is always a source of accidental poisoning among children. Hence it is necessary to know its toxic effects and treatment aspects to avoid or treat poisoning cases due to gunja seeds.

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