

Toxic Plant Containing Phytochemical Constitution

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ABSTRACT

The aim of this review is to provide a report on poisonous medicinal plants using for various treatments. Medicinal plants have been used for centuries, and numerous cultures still rely on indigenous medicinal plants for their primary health care needs. Poisonous medicinal plants are used for various ailments such as Antidiabetic, Anticancer, Antibacterial, Antifungal, and Cytogenetic effect. The review reveals that wide numbers of phytochemical constituents have been isolated from the various medicinal plants which possess activities like diuretic, purgative, laxative, anti-allergic and various other important medicinal properties. This information is most important for pharmaceutical companies could formulate drug.

I. INTRODUCTION

In India use of the different parts of several medicinal plants to cure specific ailments has been in vogue from ancient times. The indigenous system of medicine, namely, Ayurvedic, Siddha, and Unani, have been in existence for several centuries.

Some drugs from Ayurveda approaching modern diseases, have already reached the market place. The World Health Organization (WHO) estimated that 80% of the population of developing countries relies on traditional medicines, mostly plant drugs, for their primary health care needs.

Also, modern pharmacopoeia still contains at least 25% drugs derived from plants and many others which are synthetic analogues built on prototype compounds isolated from plants. Siddha system is one of the oldest systems of medicine in India.

The Siddha system is capable of treating all types of disease (especially chronic diseases) other than emergency cases. In Siddha medicinal system use of poisonous plants helps to cure some disease.

It is important to have an awareness regarding the poisonous plants which when used in the proper, prescribed dose, acts as potent

therapeutic agents. Toxins are molecules that are harmful to living organisms.

It is a fact that virtually any substance can be harmful at high enough concentrations-as Paracelsus (1493-1541) said in the sixteenth century, “the dose makes the poison”. Poisons include both naturally produced compounds and chemicals manufactured by humans.

Natural poisons are produced by species of bacteria, fungi, protists, plants, and animals. There are several species which are poisonous or injurious to human body and can be found in the garden or planted by the forest department as a roadside tree with or without the knowledge about their effects on human body system.

Poisoning can be by contact causing skin irritation, ingestion causing internal poisoning, absorption (by the skin) and inhalation (in the respiratory system). Some plants which are considered as harmless are actually not so. Many plants are used in some way or the other in medicines especially in homeopathic pharmacology.

This review article has the basic details such as the Botanical, Family names, Common names, toxic parts of the plant, chemical constituents, signs and symptoms of toxicity and its use in Traditional Indian Systems of Medicine

□ Toxic Plants

- **Dhatura**
- **Calotropis**
- **Parthenium**
- **Ricinus/castor bean**
- **Rosary pea**
- **Plumeria**
- **Cerberaoloddum**
- **Diefenbschia**
- **Yellow oleander**

1.1 DHATURA :



Fig 1 dhatura

Botanical name : *Datura stramonium* Common name : devil's snare and jimsonweed.

Family : solanaceae family.

Biological Source : *Datura* herb consists of the dried leaves and flowering tops of *Datura metel* Linn and *Datura metel* var. *fastuosa* belonging to family Solanaceae.

Geographical Source : It is found in India, England and other tropical and sub-tropical countries.

Characteristics : *Datura metel* is also an Indian plant and resembles *D. fastuosa*; it differs in that the leaves are heart-shaped, almost entire and downy, and the flowers always white.

Chemical Constituents : *Datura* herb contains up to 0.5% of total alkaloids, among which hyoscyine (scopolamine) is the main alkaloid, while 1-hyoscyamine (scopoline) and atropine are present in very less quantities.

Uses : In Ayurveda black *datura* is considered more efficacious or more toxic. *D. metel* is used in the manufacture of hyoscyine or scopolamine.

It exhibits parasympatholytic with anticholinergic and CNS depressant effects. The drug is used in cerebral excitement, asthma and in cough.

The Rajpoot mothers are said to smear their breasts with the juice of the *D. metel* leaves, to poison their newly born female infants.

D. metel var. *fastuosa* is known in commerce as black *datura*. The leaves are ovate and more or less angular, the flowers being mostly purplish, sometimes white. Corolla is double or triple. Outer corolla has five teeth and inner Corolla has six to ten teeth.

Datura stramonium (DS) is a widespread annual plant, containing atropine, hyoscyamine, and scopolamine, which can produce poisoning with a severe anticholinergic syndrome.

Teenagers ingest the roots, seeds or the entire plant to obtain its hallucinogenic and euphoric effects.

datura, (genus *Datura*), also called thorn apple, genus of about nine species of poisonous flowering plants in the nightshade family (Solanaceae).

Several *Datura* species are collected for use as drugs, and others are cultivated for their showy flowers. Many are considered weeds in warm parts of the world and commonly grow along roadsides and other disturbed habitats.

Datura species are often confused with members of the related genus *Brugmansia*, which features a number of ornamental trees and shrubs known as angel's trumpets.

Why is *Datura* poisonous?

The entire plant especially the foliage and seeds, is toxic due to its content of tropane alkaloids. The contained atropine, L-hyoscyamine and L-scopolamine cause anticholinergic syndrome, which results from the inhibition of central and peripheral muscarinic neurotransmission.

What are the medicinal uses of *Datura*?

The seeds of *Datura* are analgesic, anthelmintic and anti-inflammatory and as such, they are used in the treatment of stomach and intestinal pain that results from worm infestation, toothache, and fever from inflammation. The juice of its fruit is applied to the scalp, to treat dandruff and falling hair.

What type of poison is *Datura*?

Datura stramonium (DS) is a widespread annual plant, containing atropine, hyoscyamine, and scopolamine, which can produce poisoning with a severe anticholinergic syndrome. Teenagers ingest the roots, seeds or the entire plant to obtain its hallucinogenic and euphoric effects.

Which part of *Datura* is most poisonous?

All species of *Datura* are extremely poisonous and potentially psychoactive, especially their seeds and flowers, which can cause respiratory depression, arrhythmias, fever, delirium, hallucinations, anticholinergic syndrome, psychosis, and even death if taken internally.

Which is the main chemical constituent of *Datura* Leaf?

Result: Twelve compounds were isolated and identified from *Datura stramonium*, they were Ntrans-feruloyl tryptamine (1), hyoscyamilactol

(2), scopoletin (3), umckalin (4), daturaolone (5), daturadiol (6), N-trans-ferulicacyl- tyramine (7), cleomiscosin A (8), fraxetin (9), scopolamine (10), 1-Acetyl-7-hydrox-beta-

What is the death rate of Datura?

Similarly, after 24 h exposure to the extracts of Datura stremonium, the mortality rates were 40% at 2000 mg/L and 75% at 3500 mg/L.

1.2 - CALOTROPIS



Fig 2 :calotropis

Clade :Asterids

Order :Gentianales

Family :Apocynaceae

Subfamily :Asclepiadoideae

Common names include Santa :

Maria, Santa Maria feverfew, whitetop weed, and famine weed Calotropis can cause severe cardiotoxicity, calotropis poisoning should be considered when patients with snake bite present with sudden cardiovascular collapse especially when there is history of treatment with native medications.

What happens if we eat Calotropis?

When taken by mouth: Calotropis is **LIKELY UNSAFE**, especially in high doses. It contains chemicals that can interfere with heart function. It can cause serious side effects including vomiting, diarrhea, slow heartbeat, convulsions, and death.

Which part of Calotropis is most poisonous?

leaves and stem when incised yield thick milky juice. It is used as an arrow poison, cattle poison (see also Sutari), rarely for suicide and homicide and mostly an accidental poison. The milky latex sap of Calotropis gigantea is a known cause of toxic keratoconjunctivitis and reversible vision loss.

What is the treatment for Calotropis poisoning?

Treatment :

When taken by mouth, the juice produces an acrid, bitter taste, and burning pain in the throat and stomach, salivation, stomatitis, vomiting, diarrhoea, dilated pupils, tetanic convulsions, collapse and death. Treatment : Stomach wash, demulcents and symptomatic treatment.

Is Calotropis poisonous to humans?

What are the systemic toxic signs and symptoms of Calotropis plant? The plant is bitter in taste. It produces burning pain in the throat, salivation, nausea, vomiting, etc. followed by diarrhea, pain abdomen, mydriasis, tetanic convulsions, delirium, collapse, and death.

What is the medicinal use of Calotropis?

Calotropis procera is a well known plant and has been traditionally used for diarrhoea, stomatic, sinus fistula, and skin disease and the leaf part is used to treat jaundice.

Why Calotropis is called Madar?

Calotropis procera, which is a white flowered plant. It is a tall shrub with yellowish-white bark, and oblong thick leaves and purplish or white flowers (Fig. 11.4). When stem, branches, and leaves are cut, crushed, or incised, they yield milky white latex, which is an acrid juice called madar juice.

What happens if Calotropis milk drops in eyes?

In conclusion, the latex of Calotropis procera causes immediate severe corneal damage with painless sudden dimness of vision. It may also cause reduction in endothelial cell count over a period of time.

Why Calotropis is not eaten by grazing animals?

Calotropis commonly called milkweed produces very toxic chemicals called cardiac glycosides that affect the heart. Hence, cattle avoid browsing on this plant

1.3 - PARTHENIUM



Fig 3 : parthenium

family : Asteraceae

Subfamily :Asteroideae.

Common names : Santa-Maria, Santa Maria feverfew, whitetop weed, and famine weed.

Biological source : especially in warmer climates is a native of north-east Mexico and is endemic in America

Contact with the plant causes dermatitis and respiratory malfunction in humans, and dermatitis in cattle and domestic animals. The main substance responsible is parthenin, which is dangerously toxic.

It also is responsible for bitter milk disease in livestock when their fodder is polluted with Parthenium leaves.

Is parthenium poisonous to humans?

Parthenium hysterophorus is a noxious weed in America, Asia, Africa and Australia. This weed is considered to be a cause of allergic respiratory problems, contact dermatitis, mutagenicity in human and livestock.

What are the diseases caused by parthenium?

Two most important diseases associated with parthenium were a rust disease, caused by *Puccinia abrupta* var. *partheniicola*, and a phyllody disease, caused by a phytoplasma of fababean phyllody (PBP) phytoplasma group.

What medicine is used for parthenium?

Topical steroids, antihistamines, and avoidance of Parthenium are the mainstay of treatment for localized dermatitis. Systemic corticosteroids and azathioprine are frequently needed for severe or persistent dermatitis.

What are the symptoms of parthenium allergy?

The allergens present in plant dust, debris and pollens may cause hay fever, allergic rhinitis, asthma or dermatitis. In most cases, Parthenium dermatitis initially involves the eyelids, suggesting that the airborne allergens lodge in the skin folds and cause dermatitis.

What kills parthenium?

Biological control

Currently a number of insect species and 2 rust pathogens have been introduced to control parthenium: *Epiblemastrenuana* (stem galling moth) *Listronotussetosipennis* (stem weevil)

The combined effects of biological control agents reduce parthenium's density and vigour and increase grass production.

What is another name for parthenium?

Parthenium hysterophorus is a species of flowering plant in the family Asteraceae. It is native to the American tropics. Common names include Santa-Maria, Santa Maria feverfew, whitetop weed, and famine weed. In India, it is locally known as carrot grass, congress grass or GajarGhas.

What is the other name of parthenium?

Parthenium hysterophorus L. – Santa Maria feverfew, whitetop weed - widespread in North + South America; as an invasive species in India, Australia, and Africa.

How do you remove parthenium?

The most effective treatments for parthenium weed control were glyphosate and metribuzin, having higher mortality at 4 weeks after treatment (WAT) at both rosette and bolted stages than 2, 4-D, triasulfuron + terbutryn, bromoxynil + MCPA and atrazine + smetolachlor, atrazine, s-metolachlor.

How do you control a parthenium allergy?

Patch testing with acetone or aqueous plant extract is the simplest way of confirming parthenium contact allergy. Management includes avoiding contact with allergen, managing dermatitis with topical corticosteroids/tacrolimus, and other immunosuppressives like azathioprine.

How did parthenium come to India?

Parthenium or carrot grass came into India as seed containment with wheat. Over the years since its invasion, it became ubiquitous. Pollen of Parthenium causes severe allergies and bronchial infection in humans.

Do cows eat parthenium?

Though cattle do not eat Parthenium, its effects were observed on them when they walk by or graze through patches of this weed. Such cattle had inflamed udder and subsequently suffered from fever and rashes.

How did carrot grass come to India?

Solution : Parthenium or carrot grass has become ubiquitous in occurrence and causes pollen allergy. Parthenium came into India as a contaminant with imported wheat.

How is Parthenium spread?

Parthenium seeds can spread via water, vehicles, machinery, stock, feral and native animals

and in feed and seed. Drought conditions aid the spread of seed with increased movements of stock fodder and transports.

Parthenium is capable of growing in most soil types but becomes most dominant in alkaline, clay loam soils.

What do you mean by Parthenium?

Parthenium is an invasive weed which has multiple negative impacts – on human and animal health as well as crop yields and biodiversity.

Parthenium grows during the spring and summer months, between April and November.

It grows rapidly to a height of around 1.5 metres and spreads its seeds far and wide.

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How do you get rid of Parthenium naturally?

Biological methods have also been used to curb parthenium-spread. Research has shown that wasteland shrubs, ca ssiaserecia and cassia tora, inhibit germination of the weed's seeds. Plant extracts or leachates of marigold have also been found to inhibit germination of parthenium seeds.

What is the benefit of Parthenium leaf?

Parthenium hysterophorus confers many health benefits, viz remedy for skin inflammation, rheumatic pain, diarrhoea, urinary tract infections, dysentery, malaria and neuralgia.

Its prospect as nano-medicine is being carried out with some preliminary success so far.

1.4 - Ricinus/castor bean



Fig 4 :ricinus

Family : Ricinus communis L. (Euphorbiaceae)

Common name : castor oil plant

Biological source : Is a soft wooden small tree developed throughout tropics and warm temperature regions

In fact don't even have them in or around a house with small children. If they ingest the leaves or swallow the seeds, they may get poisoned. The highly toxic seeds beaded into necklaces, cause skin irritation at the contact point.

If the seed is swallowed without chewing, and there is no damage to the seed coat, it will most likely pass harmlessly through the digestive tract. However, if it is chewed or broken and then swallowed, the ricin toxin will be absorbed by the intestines.

It is said that just one seed can kill a child. Children are more sensitive than adults to fluid loss due to vomiting and diarrhea, and can quickly become severely dehydrated and die.

Ricin is a poison found naturally in castor beans. If castor beans are chewed and swallowed, the released ricin can cause injury. Ricin can be made from the waste material left over from processing castor beans. It can be in the form of a powder, a mist, or a pellet, or it can be dissolved in water or weak acid.

How poisonous is the castor bean?

Castor beans contain ricin, one of the most toxic substances known. They may cause an acute and potentially fatal gastroenteritis. Delayed visceral damage is another serious complication; however, the latter is quite rare. The toxicity is dose related and depends on the amount of castor beans ingested.

How much castor beans are poisonous?

Although the highly toxic nature of castor bean (*Ricinus communis*) is well recognized, reports of human toxicity in the English medical literature are scarce. The potentially lethal doses reported for children and adults are three beans and four to eight beans respectively.

Is *Ricinus communis* poisonous to humans?

However, *Ricinus communis* is classified as the most poisonous plant on earth for humans. The toxicity of raw castor beans is due to the presence of ricin, a naturally occurring lectin (a carbohydrate-binding protein).

What happens if you eat one castor bean?

Nausea, vomiting, diarrhea, and abdominal pain are expected after ingestion of crushed/chewed castor beans. The cells that line the digestive tract can begin to shed, resulting in gastrointestinal bleeding. Fluid and electrolyte loss can lead to shock and death. Is it safe to touch castor bean plants?

In the garden, danger from castor bean is not specifically from occasionally handling the plant, but from ingesting plant parts, namely the leaves and, especially, the seeds, which contain the greatest concentration of ricin.

What happens if you eat ricin beans?

Ricin is very toxic. It works by getting inside the cells of a person's body and preventing the cells from making the proteins they need. Without the proteins, cells die. Eventually this is harmful to the whole body, and may cause death.

How does castor oil smell?

There is an authentic earthy and nutty aroma due to the fact that the castor beans are roasted. You can compare it to light roasted peanuts aroma. It's not offensive and fades quickly.

Castor bean poisoning - Children

It is advisable to keep children away from the castor bean plant or necklaces made with its seeds. In fact don't even have them in or around a house with small children.

If they ingest the leaves or swallow the seeds, they may get poisoned. The highly toxic seeds beaded into necklaces, cause skin irritation at the contact point.

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Castor bean plants in a garden should not be allowed to flower and seed. A good practice is to "nip it in the bud".

1.5 - ROSARY PEA



Fig 5 : Rosary pea

Abrus precatorius, commonly known as jequirity bean or rosary pea, is a herbaceous flowering plant in the bean family Fabaceae. It is a slender, perennial climber with long, pinnate-leafted leaves that twines around trees, shrubs, and hedges.

How poisonous is rosary pea?

Rosary pea is highly toxic and can be fatal if ingested. In its native range, the roots are used to induce abortion and relieve abdominal discomfort. One of the most deadly plant toxins, abrin, is produced by rosary pea.

Are rosary pea poisonous to humans?

The usual fatal dose of 'rosary pea' ranges from 90 to 120 mg (1–3 seeds) though a single chewed jequirity seed may be fatal in either adult or child. The abrin content of *Abrus precatorius* seeds is about 0.15% w/w. The estimated fatal dose of abrin after oral consumption in human is 0.1–1.0 µg/kg.

What happens if you touch rosary pea?

The seeds contain a natural poison called abrin, which is similar to ricin. The plant itself doesn't cause a reaction in humans when you touch it, even though there is abrin in all parts of the plant.

The highest concentration is inside the seed, which has a tough outer shell protecting you from the poison within.

What are the symptoms of rosary pea?

Serious symptoms from rosary peas are rare and are mostly from intentional ingestion. Swallowing enough of the poison abrin causes vomiting and diarrhea that may become bloody. Loss of fluids can lead to severe dehydration,

followed by low blood pressure, hallucinations, and seizures.

What is the use of rosary peas?

In countries like, South Africa, the leaves and roots of this plant are used to cure diseases like asthma, cough, tuberculosis, bronchitis, and chest pain. Mature seeds: taste bitter, pungent, neutral in

Why are they called rosary peas?

The vine thriving at the edge of our pinewoods is *Abrus precatorius*, commonly known as rosary pea because the seeds are used to make rosary beads.

Are Rosary Peas Poisonous?

The bottom line

Abrus precatorius beans (also known as rosary peas or jequirity beans) are distinctive-looking red seeds with a black spot that are commonly used in jewelry and toys, especially from foreign sources.

The entire plant is toxic, but the beans are highly toxic to humans. If eaten, *A. precatorius* seeds can cause symptoms such as nausea, vomiting, abdominal pain, and diarrhea. rosary pea jequirity beans poured out of glass jar

The Full Story

Abrus precatorius beans (also known as rosary peas or jequirity beans) are shiny, scarlet-red seeds with a black spot.

Other less common varieties can come as a white seed with a black eye or a black seed with a white eye.

These plants are native to Africa, Asia, Australia, and the Pacific region but have been introduced to other locations including Florida and Hawaii.

This plant is considered an invasive species in the US. The seeds from *A. precatorius* are commonly used in ornamental bracelets, jewelry, and children's toys made outside of the US.

The entire *A. precatorius* plant contains a protein (also known as a toxalbumin) called abrin, which is considered highly toxic to humans. Abrin causes toxicity through cell death. Despite its toxicity, parts of the *A. precatorius* plant have been used as home remedies to treat certain illnesses.

Most cases of human exposure to abrin come from eating *A. precatorius* beans. There is limited information on the minimum number of *A. precatorius* beans that must be ingested to cause

toxicity, so any number is considered potentially dangerous.

Symptoms typically begin within a few hours after ingestion but can be delayed for up to 5 days. Typical symptoms include nausea, vomiting, abdominal pain, and diarrhea that can worsen and become bloody.

Patients might also experience fast heart rate, headache, hallucinations, lethargy, seizures, fever, and organ failure. There is no antidote for abrin poisoning and hospitalization is often needed to manage the symptoms.

Rosary pea or jequirity bean (*Abrus precatorius*) is a slender climbing, woody vine native to the warm climates of Asia, Africa, and Australia. But, this plant is also in the United States (including southern Missouri along the Arkansas border) and is spread by humans and birds.

The rosary pea plant has an eye-catching seed or bean used to make ornamental jewelry and musical instruments such as a maraca. These seeds are shiny and bright red with a black spot at the end.

1.6 - PLUMERIA



Fig 6 : Plumeria

Common name : Frangipani

Botanical name : *Plumeria* species, most commonly *Plumeria rubra*

Other common names : Temple tree, pagoda tree

Family : Apocynaceae

All parts of the plumeria are considered toxic and the sap can cause a rash in sensitive people. But the alkaloids in plumerias make the plant extremely bitter and there are no definitive cases of plumeria poisoning.

Is Plumeria poisonous to animals?

Yes, frangipani, also known as plumeria is poisonous to dogs. If your dog has been snacking on its stems, roots, leaves, or flowers, he may show

signs of frangipani poisoning like vomiting, excessive drooling, stomach pains, and diarrhea. If these symptoms persist, consult your vet immediately.

General description : A deciduous, ornamental tree to 6m with highly perfumed flowers, popular as a garden specimen or as street trees.

Flowers : The highly perfumed flowers have five petals, white or pink with a yellow centre, about 5cm in diameter and are grouped in clusters at the ends of the branches. **Leaves :** The stiff, leathery leaves are up to 30cm long and 10cm wide, ovate to oblong with a pointed apex and a prominent marginal vein; leaves clustered towards the ends of the branches.

Fruit/Berries : The fruit is a two-parted brown pod, 15-30cm long and 1-1.5cm in diameter, splitting horizontally to release numerous seeds.

Other : Plant has copious milky sap.

Symptoms : The milky sap can be a skin irritant in sensitive individuals causing rash and blistering. Ingestion of the sap or bark can cause vomiting and diarrhoea.

The Frangipani is, in fact, poisonous, but only if you eat an entire flower will you begin to feel sick. Frangipani possesses a milky sap which is mildly poisonous. Another organism that is rarely recognized as poisonous is the daffodil, yet it is deadly if ingested.

One more example is the fungus *Gyromitra esculenta*. You will not survive if you ingest this false morel.

Plumeria rubra is a medicinal plant species that has been used effectively to treat Diabetes mellitus.

Plumeria rubra is believed to serve many beneficial purposes such as treat asthma, ease constipation, and soothe irritation.

It is even believed by some tribes in India to be a natural abortifacient. While this is a controversial topic, the fact that tribes have effectively used this method time and time again is captivating in the world of biology.

1.7 - Cerberaodollam



Fig 7 :cerberaodollam

Family : Apocynaceae (Oleander family)

Source : Names of Plants in India

Synonyms : *Cerberadilatata*, *Odollamiamalabarica*, *Tanghiniaodollam*

suicide tree is a tree native to India and other parts of S. Asia. It grows preferentially in coastal salt swamps and in marshy areas.

It grows wild along the coast in many parts of Western Ghats and has been grown as a hedge between home compounds. It yields a potent poison, often used for suicide or murder.

Flowers are white, showy, star-shaped, 5-7 cm, with a small yellow center. Leaves are 12-30 cm long, oval, dark green and glossy, held in dense spirals at the tips of the twigs.

The fruit, when still green, looks like a small mango, with a green fibrous shell enclosing an ovoid kernel measuring approximately 2 cm × 1.5 cm and consisting of two cross-matching white fleshy halves.

On exposure to air, the white kernel turns violet, then dark grey, and ultimately brown, or black. The plant as a whole yields a milky, white latex.

Cerberaodollam bears a close resemblance to the Oleander bush, another highly toxic plant from the same family.

Where is *Cerberaodollam* found?

Cerberaodollam is a plant species of the Apocynaceae family. It is often dubbed the 'suicide tree' due to its strong cardiotoxic effects, which make it a suitable means to attempt suicide.

The plant grows in wet areas in South India, Madagascar, and Southeast Asia; and its common names include Pong-Pong and Othlanga. What is the active ingredient in *Cerberaodollam*?

odollam contain cerberin, a digoxin-type cardenolide and cardiac glycoside toxin that blocks the calcium ion channels in heart muscle, causing disruption of the heart beat, most often fatally.

The clinical features, management, and the associations of dosage in poisoning with the cardiotoxic plant *Cerbera odollam* (suicide tree), responsible for more than half of plant poisoning deaths in the South Indian State of Kerala alone, have not been evaluated.

There are only few studies on its clinical features and none on the usage of cardiac pacing in its management, given its rarity in the Western world. We depend on data for similar toxins to form our management protocols.

Indigenous to India and Southeast Asia, *Cerbera odollam*, also known as pong-pong, or "suicide tree," yields highly cardiotoxic seeds. These seeds are a common cause of suicide or homicide in their countries of origin.

The seed's primary toxic ingredient is cerberin, which causes disruption of cardiac electrical activity and hyperkalemia by inhibiting the Na-K-ATPase exchanger in myocardial cells.

Until recently, the plant was hardly known or easily available in the United States. However, now, seeds of the tree, which have ornamental appeal, are available for sale online by multiple tropical plant retailers.

1.8 - DIEFFENBSCHIA



Fig 8 :diffenbschia

The Araceae family of plants is the major cause of symptomatic plant ingestions in some developed countries (*Dieffenbachia* and *Philodendron*) and in Zimbabwe (*Elephant's Ear*), especially in children.

A case of *Dieffenbachia* plant (Dumb cane) ingestion followed by severe tongue swelling is presented.

Dieffenbachia poisoning is talked about all the time when the plant is reviewed on line, but how toxic is the plant to your cats, dogs and children, really?

Dieffenbachia one of the most common indoor plants, is easy to care and great as an office plant. However the plant can be poisonous so there are some situations where it might not be a good fit.

Sadly, there are many popular houseplants that are toxic to both humans and pets so care must be taken when growing them.

Dieffenbachia is an attractive house plant. It is native to the tropics. It is grown worldwide as an ornamental house plant. It is very attractive, with large white flecked leaves growing on a straight stem.

Dieffenbachia is a small genus of tropical plants belonging to the Araceae, a family which also includes such common ornamental plants as the jack-in-a-pulpit, *Philodendron*, *Pothos*, *Anthurium*, calla lily, and *Monstera*.

Many of these plants are shade-loving and have thick, waxy, resistant leaves and are therefore popular as house plants. *Dieffenbachia* plants are tall, reaching a height of 4 to 8 feet.

The fleshy stems are as much as an inch thick, with conspicuous joints. They may be green or somewhat striped with white. The alternate leaves are stalked, and have dark green, ovate blades, up to 12 to 18 inches long, sometimes splashed with white markings.

The common name of the genus, dumb cane, arises from the fact that ingestion of portions of the stem causes extreme irritation of the mouth and throat, with paralysis of the vocal cords. The inflammation and irritation may be prolonged.

Skin exposure can lead to rash, swelling, redness, and dermatitis (skin inflammation). Touching the sap and then touching your eye can lead to eye irritation, corneal abrasions, and, rarely, permanent eye damage.

For ingestions, rinse with water and spit to remove any remaining plant materials from the mouth.

Does *dieffenbachia* purify the air?

Dieffenbachia – *Dieffenbachia*, or Dumb Cane, is a stunning houseplant that requires light and well-drained soil. This plant's foliage helps remove toxins from the air, including xylene, to offer you and your family members clean breathing air in your home.

What are the disadvantages of *dieffenbachia* plant?

Symptoms : The leaves, if chewed, will cause copious salivation and an intense burning sensation, followed by a swelling of the lips, mouth, tongue and throat.

This causes difficulty in breathing and swallowing, as well as making the tongue immobile rendering the person speechless.

1.9 - YELLOW OLEANDER



Fig 9 : yellow oleander

Poisoning due to deliberate self-harm with the seeds of yellow oleander (*Thevetia peruviana*) results in significant morbidity and mortality each year in South Asia. Yellow oleander seeds contain highly toxic cardiac glycosides including thevetins A and B and neriifolin.

Is yellow oleander poisonous?

The Yellow Oleander is an ornamental tree of the Apocyanaceae family that is common throughout the tropics. It contains cardiac glycosides that are toxic to cardiac myocytes and autonomic nervous system.

Ingestion of its seeds results in poisoning similar to digoxin toxicity.

What happens when you eat yellow oleander?

All parts of the plant are toxic if eaten, particularly the fruit and seeds. This species has been responsible for the deaths of several children. Symptoms may include a burning sensation in the mouth, vomiting, diarrhoea, dizziness and a slow or irregular heartbeat.

How fast is oleander poison?

Major symptoms of oleander poisoning are cardiac and gastrointestinal in nature and appears 2-4 hours after ingestion.

What is the first aid for oleander poisoning?

Medically manage symptoms. Provide breathing support, if necessary. Administer suitable

medication to counter the effects of the toxin. Administer activated charcoal to avoid absorbance of the substance in the body.

Poisoning due to deliberate self-harm with the seeds of yellow oleander (*Thevetia peruviana*) results in significant morbidity and mortality each year in South Asia.

Yellow oleander seeds contain highly toxic cardiac glycosides including thevetins A and B and neriifolin. A wide variety of bradyarrhythmias and tachyarrhythmias occur following ingestion.

Important epidemiological and clinical differences exist between poisoning due to yellow oleander and digoxin; yellow oleander poisoning is commonly seen in younger patients without preexisting illness or comorbidity.

Assessment and initial management. Initial assessment and management is similar to other poisonings. No definite criteria are available for risk stratification. Continuous ECG monitoring for at least 24 h is necessary to detect arrhythmias; longer monitoring is appropriate in patients with severe poisoning. Supportive care.

Correction of dehydration with normal saline is necessary, and antiemetics are used to control severe vomiting. Electrolytes. Hypokalemia worsens toxicity due to digitalis glycosides, and hyperkalemia is life-threatening.

Both must be corrected. Hyperkalemia is due to extracellular shift of potassium rather than an increase in total body potassium and is best treated with insulin-dextrose infusion. Intravenous calcium increases the risk of cardiac arrhythmias and is not recommended in treating hyperkalemia.

Oral or rectal administration of sodium polystyrene sulfonate resin may result in hypokalemia when used together with digoxin-specific antibody fragments. Unlike digoxin toxicity, serum magnesium concentrations are less likely to be affected in yellow oleander poisoning.

The effect of magnesium concentrations on toxicity and outcome is not known. Hypomagnesaemia should be corrected as it can worsen cardiac glycoside toxicity. Gastric decontamination.

The place of emesis induction and gastric lavage has not been investigated, although they are used in practice.

Gastric decontamination by the use of single dose and multiple doses of activated charcoal has been evaluated in two randomized controlled trials, with contradictory results. Methodological differences (severity of poisoning

in recruited patients, duration of treatment, compliance) between the two trials, together with differences in mortality rates in control groups, have led to much controversy.

No firm recommendation for or against the use of multiple doses of activated charcoal can be made at present, and further studies are needed. Single-dose activated charcoal is probably beneficial. Activated charcoal is clearly safe. Arrhythmia management.

Bradyarrhythmias are commonly managed with atropine, isoprenaline, and temporary cardiac pacing in severe cases, although without trial evidence of survival benefit, or adequate evaluation of possible risks.

Accelerating the heart rate with atropine or beta-adrenergic agents theoretically increases the risk of tachyarrhythmias, and it has been claimed that atropine increases tachyarrhythmic deaths.

Further studies are required. Tachyarrhythmias have a poor prognosis and are more difficult to treat. Lidocaine is the preferred antiarrhythmic; the role of intravenous magnesium is uncertain.

Digoxin-specific antibody fragments. Digoxin-specific antibody fragments are effective in reverting life-threatening cardiac arrhythmias; prospective observational studies show a beneficial effect on mortality.

High cost and lack of availability limit the widespread use of digoxin-specific antibody fragments in developing countries.

II. CONCLUSION :

In this study concluded that toxic medicinal plant have some medicinal values . certain precautions about those plants are enough to use these toxic plants as medications purpose.

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