CONDITION

Lily of the valley poisoning

Lily of the valley poisoning happens when someone swallows this plant or water contaminated by it.

WHAT IT IS
Poisoning from lily of the valley plant toxins

BODY SYSTEM
Digestive system, heart and circulation, nervous system

MAIN SYMPTOMS
Nausea, vomiting, dizziness, abnormal heartbeat

WHAT CAUSES IT
Swallowing plant cardiac glycosides

HOW IT IS DIAGNOSED
Exposure history, heart tracing, and blood tests

MAIN TREATMENT
Poison control guidance, monitoring, and supportive hospital care

CAN IT BE CURED?
Yes - effects usually resolve after toxin clearance

IS IT AN EMERGENCY?
Sometimes - fainting or abnormal heartbeat needs emergency care

LONG-TERM OUTLOOK
Full recovery is likely after uncomplicated poisoning

Overview

Lily of the valley is a flowering plant with small, white, bell-shaped flowers. Its scientific name is Convallaria majalis . All parts of the plant are poisonous if swallowed, including the flowers, leaves, stems, roots, and red berries. Water in which cut plants have been kept may also contain toxins.

The plant contains chemicals called cardiac glycosides. These act on the heart in ways similar to the medicine digoxin. They can also affect the digestive and nervous systems. Important lily of the valley glycosides include convallatoxin, convallarin, and convallamarin.

The seriousness of poisoning is not always clear from the amount swallowed. The toxin content can differ between plants and plant parts. A small exposure may cause no symptoms or only stomach upset, while a larger exposure can disrupt the heart's rhythm.

Do not wait for symptoms before seeking advice after a suspected ingestion. In the United States, contact Poison Control promptly at 1-800-222-1222 or through its online service. Elsewhere, call your local poison information service. A poison specialist can assess the plant, amount, symptoms, age, and other health factors.

Symptoms

Symptoms often begin with digestive problems, but heart effects are the main concern. They may appear within hours, although the timing can differ.

Possible symptoms include:

Someone can have an abnormal heart rhythm without being able to feel it. This is why medical monitoring may be recommended even when symptoms seem mild.

Children may not be able to describe dizziness, vision changes, or palpitations. Watch for repeated vomiting, unusual tiredness, poor balance, fainting, or behavior that is not normal for them.

Touching the plant does not usually cause cardiac glycoside poisoning because the main risk is swallowing it. Plant sap may irritate some people's skin or eyes. Wash exposed skin and rinse irritated eyes with clean, lukewarm water.

- Nausea, vomiting, stomach pain, or diarrhea
- Dizziness, weakness, confusion, or unusual sleepiness
- Blurred vision or changes in how colors appear
- A slow, fast, pounding, or irregular heartbeat
- Low blood pressure, fainting, or collapse

Causes and risk factors

Poisoning happens when part of the plant, a product containing it, or contaminated water is swallowed. It is not spread from person to person.

Common exposure situations include:

The smell of garlic can help distinguish wild garlic from lily of the valley, but appearance or smell alone is not a safe basis for eating a wild plant. Different species can grow close together and may be collected by mistake.

The effects may be more serious in people with existing heart rhythm problems, kidney

disease, or abnormal blood levels of potassium or magnesium. Medicines that slow the heart or affect its rhythm may also influence the response. These factors do not make every exposure severe, but they matter when poison specialists assess risk.

Cooking, drying, or soaking the plant should not be assumed to make it safe.

- A child eating the plant's bright red berries
- Leaves being mistaken for edible wild plants, especially wild garlic
- Drinking water from a vase that held the flowers
- Taking an unregulated herbal preparation containing the plant
- A pet chewing the plant and leaving plant material where a child can reach it

Diagnosis

Lily of the valley poisoning is usually diagnosed from the exposure history, symptoms, and medical findings. If possible, take a clear photograph of the plant. A sample may help with identification, but it should be placed in a sealed container and kept away from children and pets.

In an emergency department, an electrocardiogram, or ECG, is used to check the heart's electrical activity. Continuous heart monitoring may be needed because the rhythm can change over time.

Blood tests may measure potassium, magnesium, kidney function, and other signs of illness. High potassium can occur in serious cardiac glycoside poisoning.

A blood digoxin test is not a reliable way to measure lily of the valley poisoning. Some plant glycosides may cross-react with the test and produce a result, while others may not. The number may not reflect the amount swallowed or the severity of the poisoning. Treatment decisions are therefore based mainly on symptoms, ECG findings, and blood chemistry results.

Other causes of vomiting, fainting, or an abnormal heartbeat may need to be considered, especially when the plant cannot be identified.

Treatment and management

Call a poison information service promptly after a suspected ingestion. Do not make the person vomit. Do not give salt water, herbal remedies, or other home treatments. These can cause additional harm or delay appropriate care.

Gently remove any plant pieces from the mouth. The mouth can be rinsed with water if the person is awake and able to spit. Do not give food or drink to someone who is drowsy, having a seizure, or struggling to swallow.

Management depends on the person's symptoms, the likely amount and plant part swallowed, the time since exposure, and relevant health conditions. A poison specialist may recommend observation at home for some low-risk exposures or assessment in an emergency department.

Hospital care may include heart monitoring, repeat ECGs, blood tests, intravenous fluids, and treatment of abnormal potassium or magnesium levels. Medicines may be used to manage a dangerously slow heart rate or certain abnormal rhythms.

Activated charcoal may sometimes be considered soon after ingestion. It is not suitable for every person and should only be given under professional guidance because it can enter the lungs if swallowing is impaired.

For life-threatening cardiac glycoside poisoning, specialists may consider digoxin-specific antibody fragments, often called digoxin immune Fab. This treatment binds cardiac glycosides. Its use for plant poisoning is based partly on experience with digoxin toxicity, and the response can be less predictable because lily of the valley contains several different glycosides.

Complications

The most important complications involve the heart. Cardiac glycosides can cause the heart to beat too slowly, too quickly, or in an irregular pattern. A severe rhythm disturbance may reduce blood flow to the brain and other organs.

Other possible complications include:

Severe cardiac glycoside poisoning can be fatal, but prompt assessment allows heart rhythm and blood chemistry changes to be identified and treated.

- Dehydration after repeated vomiting or diarrhea
- High potassium or other electrolyte disturbances
- Low blood pressure and fainting
- Seizures or reduced consciousness in severe poisoning
- Kidney injury related to dehydration or poor circulation

Prevention

Lily of the valley poisoning can usually be prevented by avoiding ingestion and storing the plant safely.

Teach children never to eat garden berries, flowers, or leaves without checking with a trusted adult. Supervise young children around the plant, especially when red berries are present. Consider removing it from play areas if a child regularly puts objects in their mouth.

Keep cut flowers and vase water out of reach. Discard vase water where children and pets cannot drink it, and wash the container afterward.

Do not eat a wild plant unless its identity has been confirmed by someone with appropriate botanical expertise. Keep collected edible plants separate, and check every leaf before preparing them.

Avoid homemade or unregulated lily of the valley remedies. "Natural" does not mean safe, and the amount of cardiac glycoside in a preparation may be unknown.

Living with it and what to expect

Lily of the valley poisoning is usually a single, short-term event rather than a long-term condition. Symptoms often improve as the body clears the glycosides and any heart rhythm or electrolyte problems are corrected. The time needed for observation or hospital care depends on the symptoms and test results.

A person with mild effects may recover without lasting problems. More serious poisoning may require intensive monitoring until the heart rhythm and blood tests remain stable. No one course can be promised because plant strength, the amount swallowed, and individual health factors differ.

After an uncomplicated recovery, ongoing symptoms are not expected and long-term treatment is usually unnecessary. Routine follow-up may be advised after a significant exposure, particularly if there was an abnormal ECG, kidney injury, severe vomiting, or a change to regular medicines.

New fainting, palpitations, chest discomfort, or persistent weakness after discharge should not be saved for a routine appointment. Seek prompt medical advice because these symptoms may require another ECG or blood tests.

Poisoning does not create immunity. A future exposure can cause poisoning again.

When to get medical help

Contact Poison Control or your local poison information service immediately if anyone may have swallowed lily of the valley, its berries, an herbal product containing it, or water from a container holding the plant. Do this even if there are no symptoms.

Call emergency services now if the person has:

Do not drive someone who is faint, confused, or having heart symptoms. Keep the plant, packaging, or a photograph available for identification, but do not delay emergency care to collect it.

Routine follow-up is appropriate after recovery if the treating service recommends repeat heart, kidney, or electrolyte checks. It is not a substitute for urgent assessment of new or worsening symptoms.

- Fainted, collapsed, or become difficult to wake
- A seizure
- Trouble breathing
- Chest pain or a pounding or irregular heartbeat
- Severe weakness, confusion, or repeated vomiting
- Signs of shock, such as pale, cool skin with marked drowsiness

Common questions

How poisonous is lily of the valley?

Every part contains cardiac glycosides and should be considered poisonous if swallowed. The exact risk cannot be judged from the number of berries or leaves alone because toxin levels differ. Contact a poison information service for any suspected ingestion.

What happens if a child eats one berry?

A single berry does not guarantee serious poisoning, but it should not be ignored. Remove any remaining pieces from the mouth and contact Poison Control promptly. Do not make the child vomit. A specialist will decide whether home observation or medical assessment is appropriate.

Is water from a lily of the valley vase poisonous?

Cardiac glycosides can move from cut plants into the water. Drinking vase water may therefore cause poisoning. Contact a poison information service if it has been swallowed, even if the person feels well.

Can I get poisoned by touching or smelling the flowers?

Smelling the flowers does not cause cardiac glycoside poisoning. Touching the plant is also unlikely to cause systemic poisoning, although sap may irritate the skin or eyes. Wash your hands after handling it and avoid touching your mouth.

Can lily of the valley be mistaken for wild garlic?

Yes. Their leaves can look similar, and the plants may grow in the same area. Lily of the valley does not have the typical garlic smell, but smell alone is not a reliable safety check. Do not eat a foraged plant unless each leaf has been confidently identified.

How long does lily of the valley poisoning last?

There is no single time for recovery. Digestive symptoms may settle as the toxin clears, while heart rhythm changes may require longer monitoring. People who recover without major heart, kidney, or circulation complications are not generally expected to have permanent effects.

Sources

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