CONDITION

Imipramine overdose

Imipramine overdose is acute poisoning that can disrupt the heart, brain, blood pressure, and breathing.

WHAT IT IS
Toxic effects from taking too much imipramine

BODY SYSTEM
Heart and circulation, nervous system, breathing, and digestion

MAIN SYMPTOMS
Sleepiness, seizures, fast heartbeat, low blood pressure

WHAT CAUSES IT
Accidental or intentional excess imipramine exposure

HOW IT IS DIAGNOSED
ECG, examination, and medication history

MAIN TREATMENT
Emergency monitoring and supportive hospital care

CAN IT BE CURED?
Yes - treatment can allow full recovery

IS IT AN EMERGENCY?
Yes - any suspected imipramine overdose

LONG-TERM OUTLOOK
Many recover, but severe poisoning can be fatal

Overview

Imipramine overdose happens when someone takes more imipramine than their body can safely process. Imipramine is a tricyclic antidepressant, an older type of medicine used for depression and, in some cases, childhood bedwetting.

Too much imipramine can interfere with electrical signals in the heart and brain. This may cause an abnormal heartbeat, low blood pressure, seizures, severe sleepiness, or breathing problems. Its effects on nerves can also cause confusion, dry mouth, blurred vision, and difficulty urinating.

An overdose may be accidental, such as taking a second dose by mistake or a child swallowing tablets. It may also be intentional. Either situation needs immediate expert assessment because a person can initially appear well and then become seriously unwell.

There is no single pill count that can reliably predict what will happen. The safest response to any suspected overdose is to contact emergency services or a poison centre straight away.

Symptoms

Symptoms often begin within the first several hours, but timing is not completely predictable. Imipramine can slow the movement of the stomach and intestines, which may delay absorption. Symptoms can also worsen quickly.

Possible effects include:

Not everyone develops every symptom. The absence of symptoms immediately after taking the medicine does not show that the person is safe.

- Drowsiness, confusion, agitation, or unusual behaviour
- A fast, pounding, or irregular heartbeat
- Dizziness, fainting, or low blood pressure
- Seizures, loss of consciousness, or coma
- Slow, shallow, or difficult breathing
- Dry mouth, blurred vision, and enlarged pupils
- Flushed skin, raised temperature, or reduced sweating
- Difficulty passing urine or reduced bowel movement
- Nausea or vomiting

Causes and risk factors

The direct cause is taking too much imipramine. Common situations include a dosing mistake, confusion between medicines, a child gaining access to tablets, or intentional self-poisoning.

The seriousness of an overdose is influenced by the amount taken, how long ago it happened, and whether other substances were involved. Alcohol, sleeping medicines, opioids like oxycodone or morphine , other antidepressants like sertraline or fluoxetine , and medicines that affect heart rhythm may add to the danger.

Existing heart disease, seizure disorders, frailty, and very young or older age may make the effects harder to tolerate. However, severe poisoning can also occur in someone without previous health problems.

Imipramine's effects on the stomach can make tablet counts and timing less reliable than they may seem. Do not wait for symptoms or try to judge the risk from the package alone.

Diagnosis

Diagnosis is based on what may have been taken, the person's symptoms, a physical examination, and an electrocardiogram, or ECG. An ECG is a painless test that records the heart's electrical activity.

Clinicians look closely at the ECG for widening of the QRS complex. The QRS complex represents the electrical signal that makes the main pumping chambers of the heart contract. Widening can be a sign that imipramine is blocking sodium channels in the heart and increasing the risk of seizures or dangerous heart rhythms.

The ECG may be repeated because findings can change over time. Continuous heart monitoring is often used when poisoning is suspected.

Blood tests may check blood sugar, salts such as sodium and potassium, kidney function, and the body's acid level. Testing may also look for other substances that could require separate treatment, especially when it is unclear what was taken.

A blood imipramine level is not usually as useful as the person's condition and ECG for judging severity. A routine drug screen may also fail to identify the exact medicine or amount.

Treatment and management

Imipramine overdose is treated in an emergency department. Care focuses on supporting breathing and circulation, controlling seizures, and limiting the medicine's effects on the heart.

Initial treatment may include oxygen, an intravenous line, repeated ECGs, blood pressure checks, and continuous heart monitoring. If the person cannot protect their airway or breathe adequately, a breathing tube and ventilator may be needed.

Intravenous sodium bicarbonate is a key hospital treatment when there are important ECG changes, abnormal heart rhythms, or low blood pressure related to tricyclic antidepressant poisoning. It provides sodium and changes the acidity of the blood, helping reduce the medicine's harmful effect on heart cells.

Seizures are usually treated with medicines from the benzodiazepine like diazepam or lorazepam group. Intravenous fluids may support blood pressure. If fluids are not enough, medicines that tighten blood vessels and support circulation may be used.

Activated charcoal may sometimes be given to reduce absorption from the digestive system. It is only appropriate in selected circumstances, particularly when the airway is protected. It should not be taken at home unless a poison specialist specifically directs it.

There is no simple antidote that instantly reverses imipramine poisoning. Dialysis generally does not remove it effectively because imipramine binds strongly to body tissues and blood proteins.

The length of monitoring depends on symptoms, ECG findings, the amount and timing involved, and whether other substances were taken. People with significant poisoning may need intensive care.

Do not make someone vomit. Do not give food, drink, salt, charcoal, or another medicine unless emergency or poison-centre staff tell you to do so.

Complications

The main complications affect the heart, brain, breathing, and circulation.

Imipramine can cause very fast or abnormal heart rhythms. It may also weaken the heart's pumping action and cause severe low blood pressure. In the most serious cases, circulation may stop.

Seizures can occur suddenly. A prolonged seizure may interfere with breathing or lead to injury. Severe drowsiness can also allow vomit or saliva to enter the lungs, causing aspiration and possible lung inflammation or infection.

A person who remains unconscious may need breathing support. Rarely, prolonged lack of oxygen after cardiac arrest or severe low blood pressure can cause lasting brain, heart, kidney, or muscle injury.

These complications are not inevitable. Prompt monitoring and supportive treatment allow many people to recover without lasting physical effects.

Prevention

Many accidental imipramine overdoses can be prevented.

Keep imipramine in its original, labelled container and store it out of sight and reach of children. A locked medicine box offers added protection, particularly when children or vulnerable adults are in the home.

Use a consistent system to record doses. If you are uncertain whether a dose was already

taken, check the label and seek advice from a pharmacist rather than taking another tablet.

Do not share imipramine or transfer it into an unlabelled container. Return unwanted or expired tablets through a pharmacy or local medicine take-back service where available.

If you are worried that you or someone else may use the medicine for self-harm, involve a trusted person and contact a healthcare professional promptly. Safer storage and reviewing how medicines are supplied can reduce immediate access while the person receives support.

Living with it and what to expect

Imipramine overdose is an acute event rather than an illness that usually continues for months or years. The highest-risk period is generally while the medicine is being absorbed and affecting the heart, brain, and circulation.

People whose symptoms and ECG findings settle can often leave hospital after an appropriate observation period. Tiredness, emotional distress, or mild physical discomfort may continue briefly, but ongoing poisoning is not expected once the medicine has cleared and the person is medically stable.

Recovery takes longer after severe low blood pressure, seizures, breathing failure, or cardiac arrest. Rehabilitation and specialist follow-up may be needed if a complication caused an injury. A lasting physical disability is possible after prolonged oxygen deprivation, but it is not the usual outcome of an overdose treated before such injury occurs.

After an accidental overdose, follow-up may focus on preventing another dosing error and checking whether imipramine remains suitable. Do not restart, stop, or change the medicine after an overdose until the treating team has explained what to do.

After an intentional overdose, care should include a compassionate mental health assessment and a safety plan. This is part of treating the overdose, not a punishment. Longer-term recovery depends more on addressing the reasons behind the event than on the imipramine remaining in the body.

When to get medical help

Any suspected imipramine overdose needs urgent medical advice now , even if there are no symptoms. Contact your local poison centre or emergency service. Do not wait to see whether the person becomes unwell, and do not let them drive themselves.

Call emergency services immediately if the person:

If it is safe, take the medicine container or a photograph of its label to the hospital. Share what may have been taken, when it happened, and whether alcohol or other medicines were involved. Do not delay leaving to search for this information.

If the overdose may have been intentional, stay with the person if you can do so safely and remove nearby medicines or weapons. Contact emergency services or a local crisis service. Immediate support is appropriate even if the person now says they feel better.

Routine follow-up is appropriate only after emergency clinicians have assessed and cleared the overdose. This may include reviewing the prescription, medicine storage, emotional wellbeing, and any ongoing symptoms.

- Has collapsed, fainted, or cannot be woken
- Is having a seizure
- Has trouble breathing
- Has a very fast or irregular heartbeat
- Is severely confused, agitated, or unusually sleepy

Common questions

How much imipramine causes an overdose?

There is no amount that can be used at home to declare an exposure safe. Risk is affected by the person's size, health, timing, other substances, and the amount actually absorbed. Any dose above what was prescribed should be discussed immediately with a poison centre or emergency service.

How quickly do symptoms start?

Symptoms often develop within several hours, but they can begin earlier or be delayed. Imipramine can slow the digestive system, so feeling well soon after taking it does not rule out later poisoning.

Can I sleep off an imipramine overdose?

No. Sleepiness may be a sign that the medicine is affecting the brain. A sleeping or unconscious person may also develop breathing problems, seizures, or an abnormal heartbeat without being able to call for help.

What happens at the hospital?

The hospital team will usually check breathing, blood pressure, alertness, and heart rhythm. Treatment may include continuous ECG monitoring, blood tests, intravenous fluids, sodium

bicarbonate, seizure medicine, and breathing support. Care is adjusted to the findings rather than to the tablet count alone.

Can an imipramine overdose cause permanent damage?

Many people recover fully with timely treatment. Permanent injury is more likely if severe low blood pressure, cardiac arrest, prolonged seizures, or lack of oxygen damages the brain or other organs.

What if the overdose was intentional?

An intentional overdose needs both emergency medical treatment and mental health support. Tell emergency staff what happened as openly as you can. Once the immediate poisoning is treated, they can help address safety, emotional distress, and the circumstances that led to the overdose.

Sources

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