CONDITION

Syndrome of inappropriate antidiuretic hormone secretion

A condition in which excess antidiuretic hormone activity causes water retention and lowers the sodium level in the blood.

WHAT IT IS
Water retention causing an abnormally low blood sodium level

BODY SYSTEM
Hormones, kidneys, and nervous system

MAIN SYMPTOMS
Nausea, headache, confusion, muscle cramps

WHAT CAUSES IT
Medicines, lung or brain conditions, cancer, or unknown

HOW IT IS DIAGNOSED
Blood and urine tests after excluding other causes

MAIN TREATMENT
Fluid management and treatment of the underlying cause

CAN IT BE CURED?
Sometimes - underlying cause can resolve

IS IT AN EMERGENCY?
Sometimes - seizures or reduced consciousness

LONG-TERM OUTLOOK
Often manageable; outlook follows the underlying cause

Overview

Syndrome of inappropriate antidiuretic hormone secretion, usually shortened to SIADH, is a condition that causes a low sodium level in the blood. It is also called syndrome of inappropriate antidiuresis, or SIAD.

Antidiuretic hormone, or ADH, helps control the body's water balance. It is also called vasopressin. ADH normally tells the kidneys to save water when the body needs it. In SIADH, this signal remains active when it should not. The kidneys retain extra water, which dilutes sodium in the blood.

This low sodium level is called hyponatremia. The total amount of sodium in the body may not

be very low; instead, there is too much water in relation to sodium.

Sodium helps nerves and muscles work properly. A small or slowly developing decrease may cause few symptoms. A rapid or severe decrease can affect the brain and needs prompt treatment.

Symptoms

Symptoms are caused by low blood sodium rather than water retention itself. Many people do not have obvious swelling because the body gets rid of some sodium and water through the urine.

Mild or slowly developing hyponatremia may cause:

A larger or faster fall in sodium may cause confusion, marked drowsiness, repeated vomiting, severe weakness, seizures, or loss of consciousness.

Symptoms do not always match a single sodium result. How quickly the level changed, how low it became, age, and other health conditions all matter. Blood testing is needed because these symptoms can have many other causes.

- Nausea or reduced appetite
- Headache
- Tiredness or low energy
- Muscle cramps or weakness
- Difficulty concentrating
- Unsteadiness or falls

Causes and risk factors

SIADH is a syndrome, meaning it can result from several different conditions rather than one disease.

Possible causes include:

Risk may be higher in older adults and in people taking several medicines associated with hyponatremia. Drinking a large amount of water can worsen the sodium level when the kidneys are unable to remove water normally.

- Medicines: Some antidepressants like sertraline or fluoxetine , anti-seizure medicines, cancer treatments, pain medicines, and other drugs can increase ADH release or its effect.
- Lung conditions: Pneumonia and other lung illnesses may trigger inappropriate ADH activity.
- Brain and nervous system conditions: Stroke, bleeding, infection, injury, surgery, or some brain disorders can affect ADH control.
- Cancer: Certain cancers can produce ADH. Small-cell lung cancer is a well-known example, but SIADH does not by itself mean that someone has cancer.
- Temporary physical stress: Surgery, pain, nausea, and acute illness can increase ADH release.
- Unknown causes: Sometimes testing does not identify a clear cause.

Diagnosis

SIADH cannot be confirmed from a sodium result alone. A clinician first checks whether the blood sodium is low and whether the blood is unusually dilute. This is measured with a test called serum osmolality.

Urine tests then show how the kidneys are responding. In SIADH, the urine is usually more concentrated than expected despite the dilute blood. Urine sodium is also commonly measured.

The assessment may include:

SIADH is usually diagnosed only after other explanations have been considered. These include severe kidney problems, adrenal insufficiency, marked thyroid hormone deficiency, heart failure, liver disease, vomiting, diarrhea, and medicines such as diuretics like furosemide or hydrochlorothiazide that increase urination.

A physical examination helps assess whether the body appears dehydrated, overloaded with fluid, or close to a normal fluid balance. People with SIADH usually appear to have a near-normal fluid volume.

Further tests are guided by the situation. They may include chest imaging, brain imaging, or a detailed medicine review to find the cause. Not everyone needs every test.

- Blood sodium and other electrolytes
- Blood and urine osmolality

- Urine sodium
- Kidney function tests
- Blood glucose
- Thyroid tests
- Cortisol testing for adrenal hormone problems

Treatment and management

Treatment aims to raise sodium safely, control symptoms, and address the trigger. The plan is based on symptom severity, how quickly the sodium changed, and whether SIADH is temporary or persistent.

Severe symptoms such as seizures or substantially reduced consciousness are treated in hospital. Concentrated salt solution, called hypertonic saline, may be given through a vein. Sodium is checked frequently because correcting it too quickly can damage nerve cells.

For SIADH without severe symptoms, treatment may include limiting fluid intake. This reduces the amount of water entering the body while the kidneys are retaining water. The appropriate limit is individual and should account for food, drinks, medicines, climate, and other medical conditions. It is not simply a general instruction to stop drinking.

Treating the cause may allow SIADH to resolve. Examples include treating a lung infection or changing a medicine linked to low sodium. Prescription medicines should not be stopped without medical advice, because sudden withdrawal may cause other problems.

When fluid restriction does not work or is difficult to maintain, specialist-directed options may include:

These treatments are not suitable for everyone and require monitoring. Salt tablets alone may not correct SIADH and can increase thirst. Drinking sports drinks is also not a reliable treatment because they still contain a large amount of water.

- Oral urea, which helps the kidneys remove more water
- Increased dietary solute, sometimes including salt and protein
- A loop diuretic in selected circumstances
- A vasopressin-receptor antagonist, which blocks ADH activity

Complications

The main complication is worsening hyponatremia. Severe or rapidly developing hyponatremia can cause swelling of brain cells, leading to seizures, reduced consciousness, or breathing problems.

Chronic mild hyponatremia can still matter. It may contribute to problems with attention, balance, falls, and fractures, particularly in older adults.

Treatment also carries a risk if sodium rises too quickly. This can cause osmotic demyelination syndrome, a rare but serious injury to nerve cells. Careful blood monitoring is therefore an important part of treatment.

Prevention

SIADH cannot always be prevented. It may result from an illness, surgery, cancer, or a medicine that is needed for another condition.

When a cause is known, managing that cause and reviewing related medicines may reduce recurrence. Follow the fluid plan provided by your healthcare team rather than deliberately drinking extra water or severely restricting fluids on your own.

If you have had SIADH before, tell clinicians about it when starting a new medicine or preparing for surgery.

Living with it and what to expect

SIADH caused by short-term pain, nausea, surgery, infection, or a medicine may improve once that trigger has passed. Sodium may return to normal over days or weeks, although follow-up testing may still be needed.

Persistent SIADH can last for months or years. Management may involve a daily fluid target, regular blood tests, and treatment of the underlying condition. The plan may change during hot weather, illness, travel, or changes in medication.

Many people can continue their usual activities once sodium is stable. Fluid restrictions can be challenging because thirst may continue. Spreading drinks through the day, using smaller cups, and tracking all fluids may help if these approaches are included in your care plan.

Routine follow-up is used to check sodium, review symptoms and medicines, and decide whether restrictions or treatment are still needed. The long-term outlook often depends more on the cause of SIADH than on the low sodium itself.

When to get medical help

Seek emergency medical help for:

These symptoms may indicate severe hyponatremia or another urgent condition.

Seek prompt medical advice for new confusion, repeated vomiting, a severe or worsening headache, marked drowsiness, major weakness, or rapidly worsening balance. This is especially important if you have known SIADH or recently started a medicine associated with low sodium.

Arrange routine follow-up if thirst, cramps, tiredness, nausea, concentration problems, or unsteadiness continue. Also seek advice if a fluid restriction is difficult to follow, if you become unwell with vomiting or diarrhea, or if your medicines change. Do not adjust a prescribed fluid plan based only on symptoms.

- A seizure
- Loss of consciousness or difficulty waking
- Sudden severe confusion
- Serious breathing difficulty

Common questions

Is SIADH the same as dehydration?

No. Dehydration means the body has lost too much water, often along with salt. In SIADH, the kidneys retain too much water, which dilutes blood sodium. A person with SIADH usually does not appear obviously dehydrated or swollen.

Can drinking too much water cause SIADH?

Drinking a large amount of water does not usually cause the hormone problem itself. However, it can make hyponatremia worse when ADH prevents the kidneys from removing water. Excessive water intake from other causes is a separate condition that can also lower sodium.

Does SIADH mean I have cancer?

No. Cancer is one possible cause, but medicines, infections, lung conditions, brain conditions, surgery, pain, and nausea can also cause SIADH. Sometimes no cause is found. Testing is based on your history, examination, and other findings.

Will eating more salt fix SIADH?

Not necessarily. The main problem is excess water in relation to sodium. Extra salt may have a

role in some treatment plans, but it can increase thirst and is not appropriate for everyone. It should not replace medical assessment or sodium monitoring.

How long does SIADH last?

Temporary SIADH may improve when an illness resolves or a triggering medicine is changed. Other cases persist because the underlying cause remains active or cannot be identified. Follow-up blood tests show whether the sodium level is recovering or ongoing management is needed.

Can SIADH come back?

Yes. It may return if the original trigger recurs, a related medicine is restarted, or another illness stimulates ADH release. A previous episode should be included in your medical history so future sodium changes can be assessed promptly.

Sources

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