CONDITION

Unstable angina

Unstable angina is sudden or worsening chest discomfort caused by reduced heart blood flow without detectable heart muscle damage.

WHAT IT IS
Sudden or worsening reduced blood flow to heart muscle

BODY SYSTEM
Heart and circulation

MAIN SYMPTOMS
Chest pressure, breathlessness, sweating, nausea

WHAT CAUSES IT
Usually disrupted plaque in a coronary artery

HOW IT IS DIAGNOSED
Symptoms, ECG, and serial troponin blood tests

MAIN TREATMENT
Urgent anti-clotting treatment and restoring coronary blood flow

CAN IT BE CURED?
Sometimes - symptoms resolve, but artery disease remains

IS IT AN EMERGENCY?
Yes - new or worsening chest discomfort needs emergency assessment

LONG-TERM OUTLOOK
Often good with prompt treatment and ongoing prevention

Overview

Unstable angina is a form of acute coronary syndrome. This means the heart muscle has suddenly stopped receiving enough oxygen-rich blood, usually because blood flow through a coronary artery has become restricted.

Coronary arteries are the blood vessels that supply the heart muscle. In unstable angina, a fatty deposit called a plaque may crack or become damaged. A blood clot can then form on its surface and partly block the artery. The blockage may change over time, so symptoms can come and go.

Unlike stable angina, unstable angina may begin at rest, occur with very little activity, or become more frequent, severe, or long-lasting. It cannot safely be managed as an ordinary change in a long-term angina pattern.

Unstable angina does not cause the detectable heart muscle injury seen in a heart attack. However, the symptoms can be identical, and it is impossible to tell the difference without medical tests. Unstable angina can also progress to a heart attack. It therefore needs emergency assessment.

The use of sensitive blood tests has changed how this condition is diagnosed. Many episodes once called unstable angina are now diagnosed as a non-ST-elevation myocardial infarction, or NSTEMI, because the tests detect small amounts of heart muscle damage.

Symptoms

The main symptom is discomfort in the chest. People may describe pressure, squeezing, tightness, heaviness, burning, or an ache rather than sharp pain. It may spread to one or both arms, the shoulders, neck, jaw, back, or upper abdomen.

Symptoms may be considered unstable when they:

Other symptoms may include shortness of breath, sweating, nausea, light-headedness, unusual weakness, or a feeling that something is seriously wrong.

Not everyone has clear chest pain. Older adults and people with diabetes may have less obvious symptoms, such as breathlessness, weakness, nausea, or confusion. These symptoms have many possible causes, but a sudden or unexplained change still needs urgent assessment.

Symptoms may settle before help arrives. This does not make the episode safe to ignore because the artery can narrow again.

- begin for the first time and are significant
- occur at rest or during very light activity
- become more frequent, intense, or long-lasting
- no longer improve as reliably with rest or prescribed angina medicine

Causes and risk factors

Unstable angina is usually related to coronary artery disease. In this disease, cholesterol and other material collect inside coronary artery walls and form plaques.

If a plaque cracks or erodes, the body may respond as if there were an injury. Platelets, which are small blood cells involved in clotting, gather at the area. The resulting clot may partly block

blood flow or break apart and move farther along the artery. The artery may also tighten around the affected area.

Less often, reduced heart blood flow has another cause. Examples include a sudden spasm of a coronary artery or a problem affecting the small blood vessels within the heart. Severe illness can also upset the balance between the heart's oxygen supply and its needs, although this is not always classified as unstable angina.

Factors that increase the chance of coronary artery disease include:

Having one or more risk factors does not mean you will develop unstable angina. Some people have an episode without knowing that they have coronary artery disease.

- smoking or exposure to tobacco smoke
- high blood pressure or high cholesterol
- diabetes
- chronic kidney disease
- older age
- a close family history of early heart disease
- low physical activity or excess body weight

Diagnosis

Because a heart attack and unstable angina can feel the same, assessment usually begins in an emergency department. The clinical team will ask about the symptoms, when they started, what brought them on, and whether they are different from earlier episodes. They will also review heart risk factors and current medicines.

An electrocardiogram, or ECG, records the heart's electrical activity. It can show changes caused by reduced blood flow or a heart attack. A normal ECG does not rule out unstable angina, so it may be repeated.

Blood tests measure cardiac troponin, a protein released when heart muscle cells are injured. These tests are usually repeated over several hours. A rise or fall in troponin may point to a heart attack rather than unstable angina. With unstable angina, there is no troponin pattern showing acute heart muscle injury.

There is no single test that proves unstable angina. The diagnosis is based on symptoms consistent with reduced heart blood flow, ECG findings, repeated troponin results, and the absence of a better explanation.

Other tests may include an echocardiogram, which uses sound waves to examine heart movement and pumping. Coronary angiography uses contrast dye and X-rays to look for narrowed arteries. Some people have a coronary CT scan instead. The choice and timing depend on the symptoms, test results, overall risk, kidney function, and other health conditions.

Treatment and management

Treatment starts while the cause and severity are being assessed. The immediate aims are to relieve strain on the heart, prevent a clot from growing, and restore blood flow when necessary.

Medicines may include antiplatelet drugs, which make platelets less likely to form a clot, and an anticoagulant like warfarin or apixaban , which slows the clotting process. Nitrates may be used to ease chest discomfort by widening blood vessels. Other medicines can reduce the heart's workload, lower cholesterol, or control blood pressure.

Oxygen is generally used when the blood oxygen level is low or there is another reason it is needed. It is not automatically required for everyone with chest discomfort.

If testing suggests an important coronary blockage, coronary angiography may be recommended. During angioplasty, a thin tube is guided into the narrowed artery and a small balloon is expanded. A mesh tube called a stent is often left in place to hold the artery open.

Some patterns of coronary disease are better treated with coronary artery bypass grafting. This is an operation that uses blood vessels from elsewhere in the body to create new routes around blocked arteries.

Before discharge, the care plan may include long-term antiplatelet and cholesterol-lowering treatment, management of blood pressure or diabetes, and cardiac rehabilitation. Cardiac rehabilitation combines supervised activity, education, risk-factor support, and help returning to everyday life.

Medicines should not be stopped or changed without medical advice. This is especially important after a stent because stopping antiplatelet treatment too soon can allow a dangerous clot to form inside it.

Medicines commonly used for this include clopidogrel . Which one suits you, if any, is a decision for you and your doctor.

Complications

The most important complication is a heart attack. This happens when restricted blood flow lasts long enough to injure or kill part of the heart muscle.

Reduced blood flow can also disturb the heart's electrical system and cause an abnormal rhythm. Some rhythms affect the heart's ability to pump and can lead to cardiac arrest. Heart failure may develop if the heart becomes unable to pump blood effectively, particularly if a heart attack occurs.

Treatment also has possible risks. Anti-clotting medicines can cause bleeding. Angiography and angioplasty can occasionally damage a blood vessel, affect kidney function, or cause an allergic reaction to contrast dye. The clinical team weighs these risks against the danger of ongoing reduced blood flow.

Prompt treatment lowers the chance of serious complications but cannot remove it completely.

Prevention

Unstable angina cannot always be prevented. Age, family history, and inherited tendencies cannot be changed, and an artery plaque may become unstable without warning.

You can reduce the chance of coronary artery disease developing or worsening by not smoking, managing blood pressure, treating high cholesterol and diabetes, and following a heart-supportive eating pattern. Regular physical activity and maintaining a weight that is appropriate for you can also help.

After unstable angina, prevention usually includes prescribed medicines and follow-up as well as lifestyle changes. Cardiac rehabilitation can help you return to activity safely and make realistic long-term changes.

Do not begin strenuous exercise while you have new, worsening, or unexplained chest symptoms. Seek emergency assessment instead.

Living with it and what to expect

Unstable angina is an acute event, not a condition to monitor at home while waiting for a routine appointment. The first hours and days focus on ruling out a heart attack, preventing further clotting, and deciding whether an artery procedure is needed.

Many people recover from the immediate episode and return to work, exercise, family life, and other usual activities. Recovery time differs according to whether a procedure was needed, the

extent of coronary disease, other health conditions, and the physical demands of daily life.

Treating the episode does not necessarily remove the underlying coronary artery disease. Medicines, follow-up, and risk-factor management may therefore continue for years. Some people remain free of angina, while others have stable symptoms during exertion or need further treatment for narrowing in another artery.

Cardiac rehabilitation can support physical recovery and confidence. It can also help with anxiety, which is common after sudden chest symptoms. New emotional distress, low mood, or fear that prevents normal activity is worth discussing during follow-up.

Routine appointments may review symptoms, blood pressure, cholesterol, diabetes control, medicine side effects, physical activity, and progress after a stent or bypass operation. Report a gradual return of exertional chest discomfort rather than waiting for the next planned review.

When to get medical help

Call your local emergency number now if you have new, severe, or unexplained chest pressure, tightness, squeezing, or heaviness. Do the same if chest discomfort occurs at rest, is getting worse, or comes with breathlessness, sweating, nausea, faintness, or pain spreading to the arm, jaw, back, or shoulder.

Do not drive yourself to hospital. Emergency medical teams can begin assessment and treatment on the way. If an emergency call handler advises you to take aspirin, follow that instruction, but mention any aspirin allergy, recent major bleeding, or advice that you must avoid it.

If you already have prescribed medicine for angina, follow the emergency instructions in your personal care plan. Symptoms that do not settle as expected still require emergency help.

Contact your usual healthcare service promptly, but not as a substitute for emergency care, if previously stable exertional symptoms are gradually becoming more frequent or easier to trigger. Routine follow-up is appropriate for medicine questions, mild side effects, rehabilitation planning, and risk-factor reviews when you are otherwise well.

Common questions

Is unstable angina the same as a heart attack?

No. Both involve reduced blood flow to the heart, but a heart attack causes detectable heart muscle injury. Unstable angina does not. The symptoms can be the same, so only an

emergency assessment with ECGs and repeated blood tests can distinguish them.

Can unstable angina go away on its own?

The discomfort may stop when blood flow improves temporarily. The unstable plaque or clot may still be present, and symptoms can return or progress to a heart attack. Symptoms settling is not a reason to cancel emergency assessment.

Can an ECG be normal with unstable angina?

Yes. ECG changes may be temporary, and some people have a normal tracing between episodes. Clinicians use the symptoms, repeated ECGs, troponin blood tests, and sometimes imaging together.

Will I need a stent?

Not everyone does. A stent may be recommended when angiography shows a suitable blockage that is causing significant risk. Some people are treated with medicines, while others need bypass surgery because of the number or location of narrowed arteries.

Can stress cause unstable angina?

Emotional or physical stress can increase the heart's need for oxygen and may bring on symptoms when coronary blood flow is already limited. Stress alone is not usually the underlying cause; coronary artery disease and clot formation are more common causes.

Can unstable angina come back after treatment?

Yes. Treatment can restore blood flow and lower the risk, but coronary artery disease may remain in other areas. Taking prescribed medicines, attending follow-up, joining cardiac rehabilitation, and addressing risk factors can reduce the chance of another event.

Sources

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