CONDITION

Factor V deficiency

Factor V deficiency is a rare bleeding condition in which blood does not clot normally because factor V activity is too low.

WHAT IT IS
Rare clotting factor deficiency causing prolonged bleeding

BODY SYSTEM
Blood and circulation

MAIN SYMPTOMS
Nosebleeds, easy bruising, heavy periods, prolonged bleeding

WHAT CAUSES IT
Usually inherited; rarely acquired through antibodies

HOW IT IS DIAGNOSED
Clotting tests, mixing study, and factor V activity assay

MAIN TREATMENT
Plasma replacement and measures to control bleeding

CAN IT BE CURED?
No - inherited factor levels remain low

IS IT AN EMERGENCY?
Sometimes - uncontrolled bleeding or possible brain bleeding

LONG-TERM OUTLOOK
Often manageable with specialist planning and prompt treatment

Overview

Factor V deficiency is a rare condition that affects blood clotting. Factor V is a protein that helps form a stable clot after an injury. When its activity is low, bleeding may last longer than expected.

The condition is usually inherited through a genetic change. Rarely, it develops later in life when the immune system makes an antibody that blocks factor V.

Symptoms range from mild to severe. Some people have few everyday problems but bleed heavily after surgery, dental work, injury, or childbirth. Others have frequent bleeding from the nose, mouth, digestive tract, or reproductive system. Factor V levels do not always predict how much someone will bleed.

Factor V deficiency is different from factor V Leiden. Factor V deficiency causes bleeding, while factor V Leiden increases the risk of unwanted blood clots.

There is no routinely available factor V concentrate. When replacement is needed, treatment usually uses donated plasma, the liquid part of blood that contains clotting factors.

Symptoms

Symptoms can begin at any age. People with very low factor V activity may bleed in infancy, including from the remaining umbilical cord after birth. A milder deficiency may not become apparent until a procedure or injury.

Possible symptoms include:

Anaemia can develop after repeated or heavy bleeding. Bleeding inside the skull, digestive tract, or other organs is uncommon but serious. Some people have abnormal clotting tests without frequent symptoms.

- Frequent or difficult-to-stop nosebleeds
- Easy or unusually large bruises
- Bleeding from the gums or mouth
- Heavy or prolonged menstrual periods
- Bleeding that restarts after appearing to stop
- Prolonged bleeding after dental work, surgery, injury, or childbirth
- Blood in urine or bowel movements
- Bleeding into muscles or joints, although this is less typical than in haemophilia
- Tiredness, weakness, or shortness of breath from blood-loss anaemia

Causes and risk factors

Inherited factor V deficiency is caused by changes in the F5 gene, which provides instructions for making factor V.

It is usually inherited in an autosomal recessive pattern. A person generally needs an altered gene copy from both biological parents to have a significant deficiency. Parents who each carry one altered copy usually have no symptoms or only mildly reduced factor V activity.

Factor V is made mainly in the liver, but factor V deficiency is not the same as liver disease and

is not caused by vitamin K deficiency.

Rarely, the condition is acquired. The immune system makes an inhibitor-an antibody that interferes with factor V. This has been associated with certain medical conditions, medicines, infections, surgery, and some surgical materials, although no trigger is found in some cases.

Combined factor V and factor VIII deficiency is a separate inherited condition with different genetic causes.

Having relatives with factor V deficiency or unexplained excessive bleeding increases the chance of an inherited condition, but someone may be the first person in a family to receive a diagnosis.

Diagnosis

Diagnosis involves your bleeding and family history, a physical examination, and blood tests. Tell the clinical team about bleeding after injuries, operations, dental treatment, periods, pregnancy, or childbirth.

Initial tests usually include:

Both PT and aPTT are usually prolonged because factor V works in pathways measured by both tests. Thrombin time is generally normal. Because these results are not specific to factor V deficiency, further testing is needed.

A factor V activity assay measures how well factor V works in a blood sample. Clinicians also check for liver disease, severe illnesses that affect clotting, and other clotting factor deficiencies.

A mixing study can help distinguish an inherited deficiency from an acquired inhibitor. The laboratory mixes your plasma with normal plasma. If clotting times correct, a missing factor is more likely. If they do not, an inhibitor may be present. Some inhibitors require specialised testing.

Genetic testing can sometimes confirm inherited factor V deficiency and may support family testing or pregnancy planning, but it is not required in every case.

- Prothrombin time , or PT
- Activated partial thromboplastin time , or aPTT
- Thrombin time
- A blood count and tests for other causes of bleeding

Treatment and management

Treatment depends on factor V activity, your bleeding history, active bleeding, and whether you are having a procedure. People without active bleeding may not need regular replacement therapy.

Fresh frozen plasma or another medically prepared plasma product is the main source of replacement factor V. It may be given for significant bleeding or before procedures with a meaningful bleeding risk. The amount and timing require specialist planning and monitoring.

Platelets contain a small supply of factor V. A platelet transfusion may be considered for severe bleeding that does not respond adequately to plasma, particularly when an inhibitor is involved.

Antifibrinolytic medicines, which slow the breakdown of clots, may help control bleeding from the mouth, nose, or uterus. Heavy periods may also be managed with hormonal or other treatments. Iron may be needed if blood loss has caused iron deficiency.

Acquired factor V deficiency may require treatment to control bleeding and reduce or remove the antibody, sometimes using immune-suppressing medicines. Specialists manage this differently from inherited deficiency.

Before surgery, dental extraction, endoscopy, or childbirth, a haematology team can prepare a written plan covering blood tests, access to plasma, treatment timing, and observation afterward.

Do not start or stop medicine solely because of this condition without medical advice. Aspirin and some anti-inflammatory pain medicines affect platelets and may increase bleeding. Check whether prescription and non-prescription products are suitable for you.

Complications

The main complication is significant blood loss. Repeated nosebleeds, digestive bleeding, or heavy periods can cause iron deficiency and anaemia.

Bleeding after an operation, injury, dental procedure, miscarriage, or childbirth may continue longer than expected or restart after settling. Advance planning reduces but does not remove this risk.

Rare serious complications include bleeding inside the skull, neck, chest, abdomen, or other organs. Large muscle bleeds can press on nerves or blood vessels. Repeated joint bleeding can damage a joint, although this is less common than in severe haemophilia.

Plasma can cause allergic or transfusion reactions and add fluid to the circulation. Donor screening and plasma preparation reduce infection risk but cannot eliminate it. Repeated exposure may rarely lead to an inhibitor that makes replacement less effective.

Prevention

Inherited factor V deficiency cannot currently be prevented. It is caused by genetic changes present from conception, not by diet, exercise, or something a parent did during pregnancy.

Complications may be reduced through preparation. Keep information about your bleeding disorder available, tell healthcare professionals before procedures, and follow your specialist plan for injuries or bleeding. Regular dental care may reduce the need for invasive treatment.

Family members may consider genetic counselling or testing to understand inheritance and reproductive options.

Acquired factor V inhibitors often cannot be predicted. If a possible trigger is identified, specialists will decide whether it should be avoided or treated.

Living with it and what to expect

Factor V activity usually remains low throughout life in inherited deficiency. Symptoms may change with age, injuries, dental work, menstruation, pregnancy, illness, and medicines.

Many people do not need daily treatment. They mainly need a plan for procedures and rapid access to care for significant bleeding. Those with more severe symptoms may require closer follow-up, treatment for recurrent bleeding, and anaemia monitoring.

Keep a record of nosebleeds, heavy periods, unexplained bruises, and bleeding after procedures. A bleeding-disorder card or medical alert identification can help in an emergency. Before travelling, ask how to carry medical information and where suitable treatment is available.

Children can usually attend school and participate in many activities. Contact and high-impact sports may require individual discussion based on their bleeding history.

Pregnancy is possible but requires planning. Factor V deficiency may increase bleeding around miscarriage, delivery, or after birth. Haematology and maternity teams can agree on testing, pain-relief options, delivery arrangements, and plasma access. A baby may need assessment if inherited deficiency is possible.

Many people lead active lives with occasional treatment and procedure planning. Severe

bleeding and acquired inhibitors can require more intensive care.

When to get medical help

Arrange follow-up if bruising, nosebleeds, periods, or other bleeding become more frequent or difficult to manage. Seek advice before surgery, dental extraction, pregnancy, childbirth, or starting medicines that may affect bleeding.

Contact a healthcare service promptly for persistent bleeding, blood in urine or bowel movements, repeated vomiting of blood, a rapidly enlarging bruise, or increasing tiredness or breathlessness that may indicate anaemia.

Seek emergency care for:

Possible internal or brain bleeding needs urgent assessment even when there is little visible blood.

- Bleeding that is heavy or will not stop with your usual plan
- A head injury followed by severe headache, vomiting, confusion, unusual sleepiness, weakness, or a seizure
- Sudden severe abdominal, chest, back, or neck pain
- Difficulty breathing or swallowing
- Fainting, marked weakness, pale or clammy skin, or a rapid heartbeat
- Heavy bleeding during pregnancy or after childbirth

Common questions

Is factor V deficiency the same as factor V Leiden?

No. Factor V deficiency increases bleeding because there is too little working factor V. Factor V Leiden increases the risk of unwanted blood clots because factor V resists normal inactivation.

Can factor V deficiency go away?

Inherited factor V deficiency does not usually go away because the genetic change remains. An acquired factor V inhibitor may disappear after treatment or after a trigger resolves, but its course is less predictable.

Why are both my PT and aPTT prolonged?

Factor V is involved in a shared part of the clotting process measured by both tests. Low activity can therefore prolong both PT and aPTT. Other conditions can cause the same pattern, so a factor assay is needed.

Will I need plasma regularly?

Not necessarily. Many people receive plasma only for significant bleeding or around certain procedures. Regular treatment may be considered in severe cases based on bleeding history and specialist assessment.

Can I have surgery or dental treatment?

Usually, yes, with advance planning. The team may arrange blood tests, plasma, clot-protecting medicine, or observation. Do not wait until the day of a planned procedure to mention the condition.

Can factor V deficiency affect periods or pregnancy?

Yes. It can cause heavy periods and increase bleeding around miscarriage, delivery, or after birth. Planned care with haematology and maternity teams can help manage these risks.

Sources

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