



ACQUIRED THROMBOPHILIA

Introduction

Thrombophilia is an increased tendency to develop blood clots in blood vessels due to an abnormality in the blood. There are different types of blood clots:

- Venous thrombosis is the most common cause of potentially life-threatening blood clots in the lungs (also called pulmonary embolism), clots in the deep leg veins, arm veins, kidney veins, or any other veins.
- Arterial thrombosis is a clot in the arteries. These clots can cause life-threatening complications such as heart attack (myocardial infarction), stroke, and transient ischemic attacks (TIA).

Acquired Thrombophilia

A person may develop an acquired thrombophilia at any point in their life. An acquired thrombophilia may be transient, meaning it may disappear on its own, or as a result of treatment. Acquired thrombophilia is not passed from a parent to a child, but a family may have a predisposition to develop acquired thrombophilia. A person may develop an acquired thrombophilia and may also have an inherited thrombophilia. The presence of more than one thrombophilia condition, whether it is acquired or hereditary, can significantly increase the risk for developing clots.

There are several types of acquired thrombophilias that can be detected by appropriate laboratory testing. Following is a description of the most common acquired thrombophilias:

Lupus Anticoagulant: Lupus anticoagulants (LA) are autoantibodies (abnormal proteins), produced by the body's immune system that can bind to certain cell membranes and damage those cells. LA are known to develop in people with a variety of autoimmune disorders including systemic lupus erythematosus (SLE), lymphatic tissue cancers, viral infections, in reaction to certain drugs, pregnancy, and recurrent miscarriages. They also can occur in healthy people. LA causes a moderately increased risk of both arterial and venous clots. Because they can be transient, retesting at 6-12 month intervals is recommended. LA can be identified by a prolonged PTT, but a special blood test is required to confirm this. If you have a positive LA test *and* a blood clot (or recurrent miscarriage or low platelet count), your thrombophilia is then called Antiphospholipid Syndrome.

Anticardiolipin Antibody. An increase in anticardiolipin antibodies (ACL) is a similar disorder to lupus anticoagulants, in that it is due to development of autoantibodies that bind to cell membranes. Some people develop both ACL and LA. Increased ACL can cause both arterial and venous clots. It has also been associated with recurrent miscarriage, low platelet count, and certain skin abnormalities. ACL can be transient, as in LA, and retesting at 6-12 month intervals is recommended. Testing for increased ACL is made by specific immunologic blood tests. If you have a positive ACL test *and* a blood clot (or recurrent miscarriage or low platelet count), your thrombophilia is then called Antiphospholipid Syndrome.

Hyperhomocysteinemia. Hyperhomocysteinemia (HHC) can be inherited or acquired related to deficiencies in either folic acid or vitamin B12. Acquired HHC is usually mild, and can be corrected with small doses of folic acid or eating foods that contain adequate amounts of folic acid. Testing is done by a blood test that measures blood levels of homocysteine.

Some of the rare acquired thrombophilias include polycythemia vera and essential thrombocythemia.

Testing: Who, Why, When?

Anybody who develops a thrombosis, especially early in life, should be tested for thrombophilia, as they have the highest likelihood of having either an acquired or hereditary thrombophilia. Not all people diagnosed with a thrombophilia will develop a blood clot. However, the presence of more than one condition (either acquired or hereditary) significantly increases the risk for developing a dangerous blood clot.

Testing is important because if you develop a blood clot and are diagnosed with a thrombophilia, your doctor can recommend lifestyle changes, treatment options and/or medications to help prevent future clots. If you have been diagnosed with a thrombophilia, and have not yet had a clot, your doctor can give you helpful information regarding when treatment may be necessary to prevent a clot. Remember, even if you have not yet had a clot, but are diagnosed with a thrombophilia, there are steps you can take to help reduce your risk of developing a clot. Remember, some thrombophilias are acquired and can be transient.

Test results for thrombophilia can be affected by many different factors. These factors can interfere with testing and cause false-positive or false-negative results. Some of these factors include acute and chronic illnesses (liver disease, kidney disease, infection), and medications such as heparin, Coumadin, and estrogen. Therefore, testing for thrombophilia is not optimal if performed at the time of an acute clot or other illnesses, or while taking blood thinner medications (such as Coumadin or heparin). People with a clot should be tested after an appropriate course of anticoagulant therapy and discontinuation of anticoagulants for 3-4 weeks.

If you have had an episode of an early clot, you may have more than one blood abnormality that significantly increases your risk for developing clots. Therefore, full and complete assessment should be undertaken which includes comprehensive laboratory testing.

Treatment Options

Anybody diagnosed with a clot will most likely require a period of anticoagulation therapy. Anticoagulation therapy may include treatment with one or more of the following:

- Standard heparin
- Low molecular weight heparin
- Warfarin
- Aspirin
- Thrombolytic medications (clot-dissolving drugs)
- Surgery

The specific course of treatment depends on many factors. These factors include:

- Location and severity of clot
- Personal history of previous clots
- Family history (blood relatives) of clots
- Diagnosis of thrombophilia, either acquired or hereditary
- Conditions such as: pregnancy, obesity, illnesses, age



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The specific course for treatment will vary. Therefore, it is very important to establish a relationship with a doctor with experience in thrombophilia, who can recommend the best treatment course for your specific situation.

Summary

There are many known causes for the development of blood clots. It is very important for anybody with a personal history of clots or a family history of clots to be tested for thrombophilia. Testing can help establish the reason for clotting, identify people and families at risk for future clots, and helps reduce the incidence of future clotting through preventive measures.

If you have questions regarding this information, please call your CCBD Nurse Coordinator at (414) 257-2424.