Antiphospholipid Syndrome

Antiphospholipid antibody syndrome affects five times as many women as men

Antiphospholipid antibody syndrome (commonly called antiphospholipid syndrome or APS) is a recently identified autoimmune disease present mostly in young women. Those with APS make abnormal proteins called antiphospholipid autoantibodies in the blood. This causes blood to flow improperly and can lead to dangerous clotting in arteries and veins, problems for a developing fetus and pregnancy miscarriage. People with this disorder may otherwise be healthy, or they also may suffer from an underlying disease, most frequently systemic lupus erythematosus (commonly called SLE).

Fast Facts

- Antiphospholipid antibodies are present in 15-20% of all cases of deep vein thrombosis (blood clots) and in one-third of new strokes occurring in people under the age of 50.
- Antiphospholipid antibodies are a major cause of recurrent miscarriages and pregnancy complications when no other causes are found.
- Once the disease is diagnosed, adequate therapy in most cases can prevent the recurrence of the symptoms.

What is APS?

APS is an autoimmune disease which can cause frequent clotting in arteries and veins and/or miscarriages. The clotting results from the presence of proteins in the blood called anti-phospholipid autoantibodies (commonly called aPL) formed against the person's own tissues. These autoantibodies interfere with coagulation, leading to increased clot formation or thrombosis (in which blood flow stops due to a clot).

The damage caused by this clotting can vary depending on the site of the clot. For instance, repeated small clots in the heart can cause heart valve thickening or damage, with the risk of releasing clots into blood (called an arterial embolism). aPL also may be associated with heart attacks in young people without any known cardiac

risk factors. Blood clots in the arteries in the heart can lead to heart attacks, while blood clots in the arteries in the brain can result in strokes. Blood clots from aPL can occur anywhere in the circulation and can affect any organ in the body.

Clots forming in the veins most frequently occur in the lower legs. Blood clots in the leg veins can break off and travel to the lung, causing a very serious condition called pulmonary embolism. Pulmonary embolism blocks blood flow to the lung and decreases the amount of oxygen in the blood.

In a few cases, repeated thrombotic events may take place in a short time, leading to the progressive damage of several organs. This acute and life-threatening condition is called catastrophic APS.

Patients with APS may suffer from other problems including low number of platelets, mottled purplish discoloration of the skin (livedo reticularis), and skin ulcerations.

For pregnant women, aPL can lead to early and late miscarriage, and pre-eclampsia (high blood pressure and protein in the urine during pregnancy). Originally it was suggested that aPL were responsible for clots in the placenta's blood vessels, causing fetal growth retardation. aPL also may directly attack the placental tissues, blocking their growth and development.

What causes APS?

Why patients develop these autoantibodies is not completely understood. The production of these autoantibodies likely is triggered by an environmental factor, such as an infection occurring in an individual with a genetic background that makes him or her more susceptible to the disease.

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aPL can be present in the bloodstream for a long time, but thrombotic events result only occasionally. aPL increases the risk for blood clotting, but thrombosis usually occurs when other conditions that favor clotting are present, such as prolonged inactivity(e.g., being restricted to bed), surgery or pregnancy. Additional risk factors for thrombosis are hypertension, obesity, smoking, atherosclerosis (hardening of the arteries), and use of estrogens (birth control pills).

Who gets APS?

APS affects women five times more commonly than men. It is typically diagnosed between the ages of 30 and 40. While up to 40% of patients with SLE will test positive for the anti-phospholipid autoantibodies, only half will develop thrombosis and/or experience miscarriages.

Like most autoimmune disorders, APS has a genetic component, although there is not a direct transmission from parent to offspring.

How is APS diagnosed?

The diagnosis of APS is made by testing the blood of patients with thrombosis and/or recurrent miscarriages for aPL. Screening is done using two kinds of tests.

Tests may vary because of the differences in the aPL from patient to patient. Each single test cannot detect all of the possible autoantibodies, so their combined use is strongly advised. At least one of these tests must prove positive, and be confirmed on two occasions no less than three months apart. In general, the higher the level of the test and the greater number of positive tests increases the risk of developing symptoms. Having positive blood tests alone in the absence of a clot does not make a diagnosis of aPL. There are healthy people who carry these clotting proteins in their blood who never have a clot in their lifetimes.

How is APS treated?

Most often, aPL is detected after a thrombotic (clotting) event or recurrent miscarriages. Therefore, the main goal of therapy is prevention of recurrences, given that the presence of the antibodies puts the patient at strong risk for future episodes.

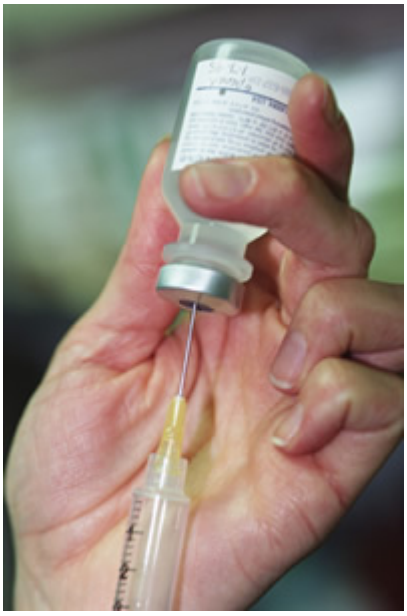
Vascular events. Acute thrombotic events are treated with anticoagulants (blood thinners), initially with intravenous heparin and then followed by oral warfarin (*Coumadin*). In serious situations, some patients also are given compounds that dissolve clots quickly.

In patients with aPL, oral anticoagulation is required to avoid recurrences of venous blood clots, possibly over a period of years. For arterial events, recurrences also are prevented with drugs that inhibit platelets, such as aspirin and clopidogrel (*Plavix*).

Obstetrical manifestations. Subcutaneous injections of heparin and low-dose aspirin are the standard therapy for preventing miscarriages. The therapy is started at the beginning of the pregnancy and continued in the period immediately after the delivery. This therapeutic approach has been shown to be effective in the majority of the cases, with delivery of healthy babies. In non-responsive cases, alternative therapies such as intravenous immunoglobulin infusions and administration of corticosteroids (prednisone) may help.

Pregnant women who had previous blood clots may receive the same combination of heparin and low-dose aspirin—but with higher doses of heparin—because of the increased risk of blood clots.

The therapy with heparin and aspirin has been shown to be safe for both the mother and the baby.



Subcutaneous injections of heparin and low-dose aspirin are the standard therapy for preventing new miscarriages.

When antibodies are detected in patients with no prior thrombotic events or miscarriages, the need for preventive therapy must be evaluated case by case. However, it is generally accepted that treatment is not necessary if no additional risk factors for clotting are present.

Living with APS

The need for a long-term oral anticoagulant (blood thinning) therapy significantly affects the lifestyle of the patients, creating the need for regular monitoring of the anticoagulation (blood-thinning) effect and special attention paid to the diet and to situations with a bleeding risk (e.g., falls). Correction of conventional risk factors for thrombosis (diabetes, high blood pressure, high cholesterol, obesity, and smoking) is mandatory in APS patients. Estrogen therapy for birth control or menopausal symptoms should be avoided.

Present treatment for the prevention of the obstetrical manifestations is quite effective. The majority of the women can have healthy babies.

While APS is an autoimmune disease, its diagnosis does not mean that a patient will develop another autoimmune condition.

Points to remember

- The presence of aPL represents an important risk factor for recurrent thrombosis and miscarriages.
- Diagnosis and treatment is very important.
- The mainstay of treatment is the prevention of blood clots through oral anticoagulation (blood thinning) or anti-platelet drugs.
- Risk factors for thrombosis must be addressed. These include diabetes; hypertension or high blood pressure; hypercholesterolemia or high cholesterol; obesity; smoking; and estrogen therapy for menopause or contraception.

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For additional Information

If you want more information on this topic, please visit the following:

The Arthritis Foundation: www.arthritis.org

Updated March 2013. Written by Pier Luigi Meroni, MD, and reviewed by the American College of Rheumatology Communications and Marketing Committee. This patient fact sheet is provided for general education only. Individuals should consult a qualified health care provider for professional medical advice, diagnosis and treatment of a medical or health condition.