



## Risk Factors of Antiphospholipid Antibody Syndrome: its Pathogenesis, Signs and Symptoms

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### Description

Antiphospholipid Syndrome (APS) is a disorder where the immune system unintentionally produces antibodies that assault bodily tissues. Blood clots may develop in arteries and veins as a result of these antibodies. Although the precise cause of APS is still unknown, genetics is thought to be a major factor in the disease's progression. One clinical event (such as a thrombosis or pregnancy issue) and two positive blood test results that show the presence of lupus anticoagulant, anti-apolipoprotein antibodies, or anti-cardiolipin antibodies, spaced at least three months apart, are required for the diagnosis. Primary or secondary antiphospholipid syndrome are both possible. Primary antiphospholipid syndrome is a condition that doesn't have any concomitant diseases. Systemic lupus erythematosus and other autoimmune disorders are associated with secondary antiphospholipid syndrome. This condition, known as "catastrophic antiphospholipid syndrome" (CAPS or Asherson syndrome), is rare and causes fast organ failure as a result of generalised thrombosis. Anticoagulant medications, such as heparin, are frequently needed to treat antiphospholipid syndrome in order to lower the risk of developing new thrombotic events and improve the prognosis for pregnancy. Contrary to heparin, warfarin (brand name Coumadin) can penetrate the placenta and is teratogenic, hence it should not be used during pregnancy.

### Signs and symptoms

Antiphospholipid antibodies (aPL) do not suggest APS when there are no blood clots or pregnancy-related problems. In every organ system, venous or arterial blood clots, as well as issues with pregnancy, are all possible effects of antiphospholipid syndrome.

The majority of miscarriages in the later trimesters associated with systemic lupus erythematosus and pregnancy can be attributed to the antiphospholipid syndrome. Low platelet count, cardiac valve disease, and livedo reticularis are additional frequent findings but are not included in the APS diagnostic criteria. Antiphospholipid antibodies have also been linked to a variety of neurologic symptoms, such as headache, migraine, epilepsy, and dementia. Antiphospholipid antibodies have been found in the blood and spinal fluid of patients with psychiatric symptoms, according to some investigations. Cancer has been seen to coexist with APS in some people.

### Pathogenesis

A subset of anti-cardiolipin antibodies and anti-apolipoprotein H (ApoH) bind to ApoH. Protein C, a glycoprotein with a crucial coagulation regulation role (inactivating Factor Va and Factor VIIIa), is inhibited by apoH. Prothrombin is more easily broken down into thrombin, which is the active form, when lupus anticoagulant antibodies bind to it. Antibodies that bind to protein S, a co-factor of protein C, are also present in APS. Anti-protein S antibodies thus reduce the effectiveness of protein C. The availability of negatively charged phospholipid molecules for coagulation is decreased by annexin A5's formation of a shield around them. Thus, phospholipid-dependent coagulation processes are increased by anti-annexin A5 antibodies. The antibodies that target 2glycoprotein 1 have a stronger connection with thrombosis than those that target prothrombin, and these are the lupus anticoagulant antibodies. At moderate to high titres of anticardiolipin antibodies (above 40 GPLU or MPLU), thrombosis is linked to these antibodies. Patients who have moderate or high titre anticardiolipin antibodies in addition to lupus anticoagulant

antibodies have a higher risk of thrombosis than those who just have one of those antibodies.

**Risk factors**

Women experience antiphospholipid syndrome more frequently than males. Antiphospholipid syndrome is more likely in people who also have an autoimmune disorder like lupus. Antiphospholipid syndrome-related antibodies might exist without causing any symp-

toms or indicators to appear. However, people are more likely to develop blood clots if they have these antibodies.

- Undergo surgery and puff on a cigarette.
- Utilise oestrogen treatment or oral contraceptives to treat menopause.
- Have high levels of triglycerides and cholesterol.