ANTIPHOSPHOLIPID SYNDROME
Antiphospholipid Antibody Syndrome, Aps, Apls, Hughes Syndrome

A condition when immune system mistakenly attacks some of the standard proteins in blood.

Related Diagnoses:
Thyroid disorders | Autoimmune disorders | Repeated implantation failure | Lupus erythematosus

About Antiphospholipid syndrome

Antiphospholipid syndrome is an autoimmune, hypercoagulable state caused by antiphospholipid antibodies. APS provokes blood clots (thrombosis) in both arteries and veins as well as pregnancy-related complications such as miscarriage, stillbirth, preterm delivery, and severe preeclampsia. This syndrome is the most common cause of acquired thrombophilia.

APS can be primary or secondary. Primary antiphospholipid syndrome occurs in the absence of any other related disease. Secondary antiphospholipid syndrome is often associated with systemic lupus erythematosus and less frequently with infections, drugs and other diseases. Serologic markers are antiphospholipid antibodies, lupus anticoagulant and anticardiolipin. In rare cases, APS leads to rapid organ failure due to generalised thrombosis; this is termed "catastrophic antiphospholipid syndrome" (CAPS) and is associated with a high risk of death.

Diagnosis

The common blood tests for antiphospholipid antibodies are as follows:

- Anticardiolipin antibodies (IgG, IgM, and IgA)
- Lupus anticoagulant Antibodies to b2-glycoprotein I (IgG, IgM, IgA)

The diagnostic criteria require one clinical event, i.e. thrombosis or pregnancy complication, and two antibody blood tests spaced at least three months apart that confirm the presence of either lupus anticoagulant, or anti-β2-glycoprotein-I (since β2-glycoprotein-I antibodies are a subset of anti-cardiolipin antibodies, an anticardiolipin assay can be performed as a less specific proxy).

APS often requires treatment with anticoagulant medication such as heparin to reduce the risk of further episodes of thrombosis and improve the prognosis of pregnancy. Warfarin/Coumadin is not used during pregnancy because it can cross the placenta, unlike heparin, and is teratogenic.

Associated disease

- connective tissue disorders
- malignancies, but it may also appear in isolated form (primary APS)
- autoimmune diseases (lupus erythematosus, SLE)
- arterial or venous blood clots
- pregnancy-related complications of vein thrombosis of the lower extremities
- stroke
- placental infarctions

Complications
complications of pregnancy (premature miscarriages, unexplained fetal death, or premature birth)

**Risk factors**

- high cholesterol
- obesity
- smoking
- hypercholesterolemia
- oral contraceptives

**Impact on fertility**

*Anti-phospholipid syndrome is thought to be a major cause of early pregnancy loss.* This condition is characterized by the presence of anti-phospholipid antibody. In pregnant women affected by APS, miscarriage can occur prior to 20 week of gestation, while pre-eclampsia is reported to occur after that time. Placental infarctions, early deliveries and stillbirth are also reported in women with APS. In some cases, APS seems to be the leading cause of mental and/or development retardation in the newborn, due to an aPL (antiphospholipid antibodies)-induced inhibition of trophoblast differentiation. The antiphospholipid syndrome responsible for most of the miscarriages in later trimesters seen in concomitant systemic lupus erythematosus and pregnancy.

**Prevention**

Prevention of blood clots through oral anticoagulation (blood thinning) or anti-platelet drugs.

**Symptoms**

- chronic headaches
- migraines
- oscillopsia
- psychological symptoms
- blood clots in the legs
- stroke
- cardiovascular disease

**Therapies**

**Self therapy**

*Stopping smoking*

Smoking is even more risky if you have APS syndrome as it causes cardiovascular disease.

*Diet*

APS is advised to eat a fit stable diet with plenty of good carbohydrates, protein, low-fat dairy products and lots of fruit and vegetables.

*Exercise*

Exercise can help your body heal and also help you mentally.

**Conventional medicine**

*Pharmacotherapy*
Antithrombotic therapy is the mainstay of treatment given the high risk of recurrent thromboembolism that characterizes this condition. The mechanism of APS-associated thrombocytopenia is multifactorial and its relation to thrombotic risk is poorly characterized. The presence of thrombocytopenia does not appear to reduce thrombotic risk in patients with APS, who can develop thromboembolic complications necessitating antithrombotic treatment. In these cases, treatment of the thrombocytopenia may be necessary to facilitate administration of antithrombotic agents. APS can be treated by combination of aspirin and heparin. The combination promotes successful embryonic implantation in the early stages of pregnancy and prevents thrombosis of the uteroplacental vasculature after placentation. Low molecular weight heparin has found to be more convenient, safe and effective in treatment of antiphospholipid antibody syndrome and inherited and acquired thrombophilias.

**Surgical therapy**

Recurrent DVT (deep vein thrombosis) can necessitate location of an inferior vena cava filter.

**Assisted reproduction**

Although assisted reproductive technologies can be successful in primary APS patients, rates of fetal and maternal complications are high. In vitro fertilization (IVF) and embryo transfer in women with APS may lead to embryonic loss or fetal death.

**Intralipid infusion therapy**

Intralipid prior to an IVF procedure, dramatically increases pregnancy success rates while reducing the risk of miscarriage. Plays a role in helping a newly implanted embryo attach to the mother’s uterus and begin to thrive. It consists of 20% Soybean Oil, 1.2% Egg Yolk Phospholipids, 2.25% Glycerin, and Water. Given as an intravenous infusion it bypasses the stomach and goes directly into the bloodstream to supply the body with several essential fatty acids. These are substances required for many biological functions, including reproduction – but they can’t be made by the body. As such they must be obtained via food, supplements, or in this case the intravenous infusion.

**Find more about related issues**

**Diagnoses**

**Thyroid disorders**

A medical condition impairing the function of the thyroid.

Learn more at: [www.fertilitypedia.org/therapy/diag/thyroid-disorders](http://www.fertilitypedia.org/therapy/diag/thyroid-disorders)

**Autoimmune disorders**

A condition arising from an abnormal immune response to a normal body part.

Learn more at: [www.fertilitypedia.org/therapy/diag/autoimmune-disorders-1](http://www.fertilitypedia.org/therapy/diag/autoimmune-disorders-1)

**Repeated implantation failure**

The absence of implantation after three or more transfers of high quality embryos or after placement of 10 or more embryos in multiple transfers.

Learn more at: [www.fertilitypedia.org/therapy/diag/repeated-implantation-failure](http://www.fertilitypedia.org/therapy/diag/repeated-implantation-failure)

**Lupus erythematosus**

Collection of autoimmune diseases in which the human immune system becomes hyperactive and attacks normal, healthy tissues.

Learn more at: [www.fertilitypedia.org/therapy/diag/lupus-erythematosus](http://www.fertilitypedia.org/therapy/diag/lupus-erythematosus)

**Reproductive functions**
Fetal development
The process in which a human embryo or fetus gestates during pregnancy, from fertilization until birth.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/fetal-development](http://www.fertilitypedia.org/edu/reproductive-functions/fetal-development)

Implantation
The very early stage of pregnancy at which the embryo adheres to the wall of the uterus.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/implantation](http://www.fertilitypedia.org/edu/reproductive-functions/implantation)

⚠️ Risk factors

Cardiovascular disease
Conditions affecting the heart or blood vessels usually associated with a build-up of fatty deposits inside the arteries.
Learn more at: [www.fertilitypedia.org/therapy/_rf/cardiovascular-disease](http://www.fertilitypedia.org/therapy/_rf/cardiovascular-disease)

Miscarriage
Intrauterine death of an embryo or a fetus of less than 500g in mass or before 20 weeks of gestation.
Learn more at: [www.fertilitypedia.org/therapy/_rf/miscarriage](http://www.fertilitypedia.org/therapy/_rf/miscarriage)

Obesity
A medical condition of excess body fat that can have a negative effect on health, leading to reduced life expectancy and other health problems.
Learn more at: [www.fertilitypedia.org/therapy/_rf/obesity](http://www.fertilitypedia.org/therapy/_rf/obesity)

Preterm birth
Birth of the baby before 37 completed weeks of gestational age.
Learn more at: [www.fertilitypedia.org/therapy/_rf/preterm-birth](http://www.fertilitypedia.org/therapy/_rf/preterm-birth)

Smoking
Long-lasting inhalation of the smoke of burning tobacco.
Learn more at: [www.fertilitypedia.org/therapy/_rf/smoking-1](http://www.fertilitypedia.org/therapy/_rf/smoking-1)

🎯 Symptoms

Headache
The symptom of pain anywhere in the region of the head.
Learn more at: [www.fertilitypedia.org/edu/symptoms/headache](http://www.fertilitypedia.org/edu/symptoms/headache)

Migraines
A severe headache felt as a throbbing pain at the front or side of the head.
Learn more at: [www.fertilitypedia.org/edu/symptoms/migraines](http://www.fertilitypedia.org/edu/symptoms/migraines)

Recurrent miscarriage
A disease distinct from infertility, defined by two or more failed pregnancies.
Learn more at: [www.fertilitypedia.org/edu/symptoms/recurrent-miscarriage](http://www.fertilitypedia.org/edu/symptoms/recurrent-miscarriage)

💡 Therapies

Antithrombotic therapy
Medications used to reduce the formation of blood clots.
Learn more at: [www.fertilitypedia.org/edu/therapies/antithrombotic-therapy](http://www.fertilitypedia.org/edu/therapies/antithrombotic-therapy)

Egg donation
Process by which a woman donates eggs for purposes of assisted reproduction or biomedical research.
Learn more at: [www.fertilitypedia.org/edu/therapies/egg-donation](http://www.fertilitypedia.org/edu/therapies/egg-donation)
ICSI
A micromanipulative fertilization technique in which a single sperm is injected directly into an egg. Learn more at: www.fertilitypedia.edu/therapies/icsi

Intralipid infusion therapy
Intralipid infusion therapy is a sterile fat emulsion containing soy oil, chicken egg yolk, glycerine and water. Learn more at: www.fertilitypedia.edu/therapies/intralipid-infusion-therapy

Medical nutrition therapy
It is a therapeutic approach to treating medical conditions and their associated symptoms via the use of a specifically tailored diet. Learn more at: www.fertilitypedia.edu/therapies/medical-nutrition-therapy

Physical exercise
Physical exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness. Learn more at: www.fertilitypedia.edu/therapies/physical-exercise-1

Sperm donation
The procedure in which a man (sperm donor) provides his sperm for fertility treatment. Learn more at: www.fertilitypedia.edu/therapies/sperm-donation

Standard IVF
A process in which an egg is fertilised by sperm outside the body: in vitro. Own or donated gametes may be used. Learn more at: www.fertilitypedia.edu/therapies/standard-ivf

Stop smoking
A process of discontinuing tobacco smoking. Learn more at: www.fertilitypedia.edu/therapies/stop-smoking

Gallery

**Thrombotic microangiopathy**
Micrograph showing an advanced thrombotic microangiopathy.

Sources

“Antiphospholipid syndrome [https://en.wikipedia.org/wiki/Antiphospholipid syndrome]” —sourced from Wikipedia licensed under [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0)

“Acute adrenal failure as the presenting feature of primary antiphospholipid syndrome in a child [http://www.ijonline.net/content/38/1/49]” —by Improda et al. licensed under [CC BY 2.0](https://creativecommons.org/licenses/by/2.0)

"Loss of Maternal Annexin AS Increases the Likelihood of Placental Platelet Thrombosis and Foetal Loss [http://www.nature.com/articles/srep008277WT.ec_id=SREP-631-20121203]” —by Ueki et al. licensed under [CC BY-NC-SA 3.0](https://creativecommons.org/licenses/by-nc-sa/3.0)

“ANTIPHOSPHOLIPID SYNDROME [http://worldheritage.org/article/WHEBN0000238273/syndrome]” —sourced from World Heritage Encyclopedia licensed under [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0)
“Med Study: Increase IVF Success and Reduce Miscarriage With Natural Treatment” —sourced from Fertility - How to get pregnant licensed under CC BY 3.0

“Successful Pregnancy Following Assisted Reproduction in Woman With Systemic Lupus Erythematosus and Hypertension: A Case Report” —by Macedo et al. licensed under CC BY 4.0

“Antiphospholipid Syndrome in a Pregnant Female Presenting with Severe Thrombocytopenia and Bleeding” —by Mahajan et al. licensed under CC BY 3.0

“Antiphospholipid Syndrome - A silent killer” —by Bangal et al. licensed under CC BY 4.0

“Thrombotic microangiopathy - very high mag” —by Nephrone licensed under CC BY-SA 3.0