Therapy of APS

Most APS disorders associated with recurrent fetal loss can be treated efficiently. Combined unfractionated heparin and low-dose aspirin regimens are thought to reduce the risk of spontanous pregnancy loss by 54 % [5], resulting in an improved live-birth rate of 70–80 % after therapy [5–7] (Fig. 4). Therefore it is very important to have an early detection of APS because treatment and therapy are very effective once the disorder is diagnosed.

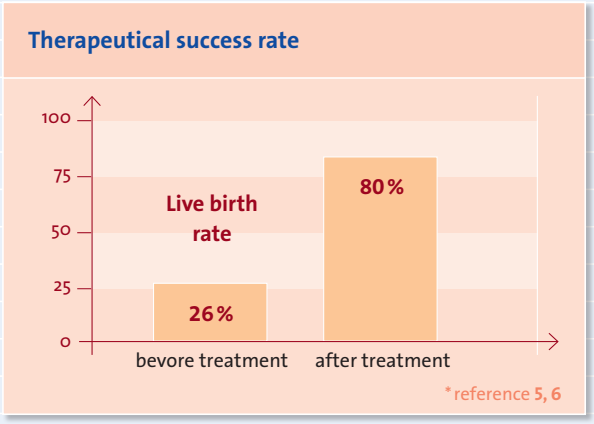

Figure 4: Enhanced live birth rate after diagnosis and therapeutical approaches to APS.

The following laboratory tests are available for the diagnosis of the antiphospholipid syndrome

Cardiolipin Antibodies
IgG, IgA, IgM or
Screen (Ig(GMA))

Phosphatidylserine Antibodies
IgG, IgA, IgM or
Screen (Ig(GMA))

β2-Glycoprotein I Antibodies
IgG, IgA, IgM or
Screen (Ig(GMA))

Phosphatidylethanolamine Antibodies
Screen (Ig(GMA))

Prothrombin Antibodies
Screen (Ig(GMA))

Annexin V Antibodies
Screen (Ig(GMA))

Phospholipid Antibodies
Screen (Ig(GM))

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Antiphospholipid Syndrome

A frequent cause for recurrent fetal loss and premature birth

Laboratory information

IMTEC Human Diagnostics Worldwide

Pregnant Women with Antiphospholipid Syndrome

Antiphospholipid syndrome

The antiphospholipid syndrome (APS) is a major cause for recurrent fetal loss. The prevalence for APS in women with two or more consecutive fetal losses is higher than 30 % [1, 2]. Furthermore the risk of fetal growth retardation and pre-eclampsia is increased due to insufficient proliferation and differentiation of the trophoblasts. Fetal death caused by a placental abruption adds to the obstetric complications observed in APS (Fig. 1).

Obstetric manifestations in antiphospholipid syndrome

n = 590 pregnant woman*

› Pre-eclampsia	9.5 %
› Eclampsia	4.4 %
› Placental abruption	2.0 %

n = 1580 pregnant woman*

› Fetal loss < 10 week	35.4 %
› Fetal loss ≥ 10 week	16.9 %
› Premature birth	10.6 %

*reference 2

Figure 1: Percentage of obstetric manifestations in APS.

Diagnosis of APS

APS is a thrombotic disorder that is characterized by moderate to high titers of autoantibodies against phospholipids and phospholipid-binding proteins. The risk for stroke, arterial, venous or small vessel thrombosis, thromocytopenia and fetal loss is strongly increased in APS patients. The determination of IgG resp. IgM class antibodies against cardiolipin or β2-glycoprotein is included in the internationally recommended classification criteria for APS and helps to clarify recurrent fetal losses of unknown cause [3] (Fig. 2). There are further autoantibody-specificities (e.g. prothrombin, phosphatidylserine, phosphatidylethanolamine, annexin V) that help to improve the diagnosis of APS. These parameters however are not always routinely established.

Classification for APS (simplified)

Clinical criteria

1. ≥ 1 arterial or venous thrombosis
2. ≥ 3 Fetal losses
3. ≥ 1 Premature birth

APS is diagnosed if at least one clinical and one laboratory criterion is met.

Laboratory criteria

1. Anti-Cardiolipin-Antibodies
2. Anti-β2-Glycoprotein I Antibodies
3. Lupus Anticoagulant

*reference 3

Figure 2: Classical criteria for the diagnosis of APS.

"Secondary" APS

APS can occur isolated (primary APS) or associated with other immune-mediated diseases, mostly SLE, thyroid disease and diabetes (secondary APS).
In presence of any of these diseases the autoimmune origin should be excluded even in absence of recurrent fetal loss (Fig. 3).

Causes for fetal loss

Numerous causes for recurrent fetal loses are known, thereunder genetic disorders, endocrine factors, anatomic anomalies and immunologic causes. In this connection, the point in time at which a spontaneous abortion occurs can serve as useful information in isolating the cause. Miscarriages triggered by APS occur at a later point in time, beginning with the 16th week of pregnancy. In addition to the thrombotic complications that accompany elevated antiphospholipid antibody titers, APA interferes directly with the proliferation and differentiation as well as the invasion of the syncytiotrophoblasts [4].

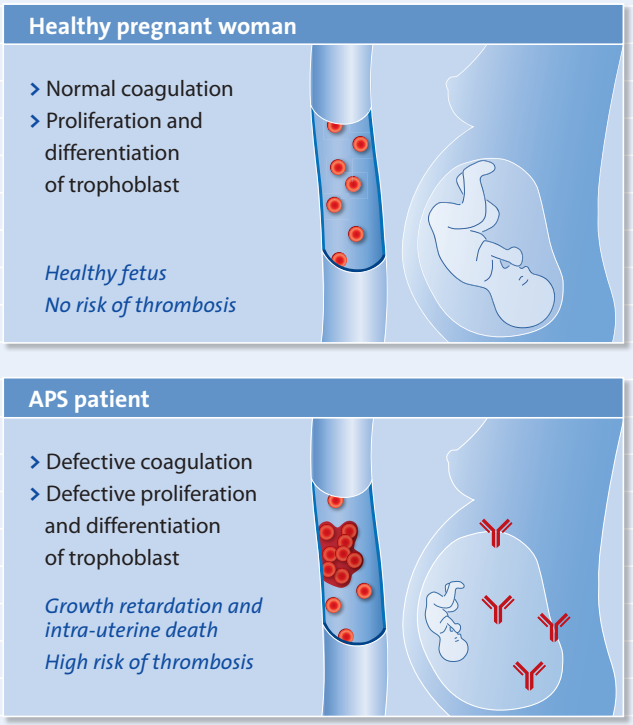

Figure 3: Immunologic defects in APS patients.