Publication of the Month

February 02/08: Antiphospholipid syndrome

25 years ago Harris and colleagues described a radioimmunoassay for anticardiolipin antibodies that was considerably more sensitive than previous binding assays or functional coagulation assays. This development and the later conversion to an enzyme-linked immunosorbent assay (ELISA) greatly facilitated subsequent clinical and epidemiologic studies and the description of the antiphospholipid syndrome (APS). As early as 1984, the first International Congress on Antiphospholipid Antibodies took place and in 1985, Hughes described the anticardiolipin syndrome, which is now known as antiphospholipid syndrome.
In the November 2007 issue of Clinical Laboratory International, a review on antiphospholipid syndrome was published:

Villalta D
Antiphospholipid syndrome update: from classification to treatment
CLI 2007, 7: 8-11

Classification criteria for the antiphospholipid syndrome were formulated in Sapporo in 1998 and revised in Sydney in 2004. Classification criteria as well as features associated with APS, but not included in the revised criteria, are listed in the first abstract of this article.

Epidemiology: APS may be one of the most common autoimmune diseases, i.e. one of the major causes of organ damage in autoimmune diseases. However, it seems to be impossible to properly assess the frequency of occurrence of APS. Indeed, there are no credible data available. Thus, in most articles the prevalence of the antibodies is mentioned instead. Anticardiolipin antibodies are found in 1 to 5 % of young, apparently healthy control subjects. Among patients with SLE, 12 to 30 % have anticardiolipin antibodies. The predictive value for antiphospholipid syndrome is higher when the antibodies are present in high titre.

Clinical features: Recurrent thromboses are the major clinical manifestation of APS, experienced by two thirds of patients. Antiphospholipid antibodies can be detected in 8-10% of all patients with venous thrombosis and in 18-20% of all stroke patients under 50 years of age. More than 50% of all thromboses in women with APS occur during pregnancy, the puerperium, and during oral contraceptive use. In patients with APS, foetal loss is more common after the 10th gestational week than in early pregnancy. High antiphospholipid titres in pregnant women with SLE are predictive of spontaneous abortion, with rates of 50-85% reported in the literature. Most other clinical manifestations in APS can be traced back to a thrombotic event.

Serodiagnosis: Lupus anticoagulant, IgG and IgM anti-cardiolipin antibodies and IgG and IgM anti-β2 glycoprotein I are the serodiagnostic markers which are listed in the revised classification criteria. Unfortunately, there are significant quality assurance issues with both coagulation based tests for lupus anticoagulant and immunoassays for anti-cardiolipin and anti-β2 glycoprotein I. Additionally, all APS tests are far from being properly standardised. Many efforts are currently being made to improve assay standardisation and harmonisation, which should help to clarify the clinical relevance of antiphospholipid antibodies. For the time being, many laboratories employ a combination of two or more assays for LA with immunoassays for IgG and IgM anti-cardiolipin and anti-β2glycoprotein I.

Treatment: Although APS is an immuno-based disorder, anticoagulant therapy is favoured. Anticoagulation with oral coumadin is the mainstay of treatment. Long-term antithrombotic treatment may be necessary in APS. The current standard treatment for pregnant women with antiphospholipid antibodies is heparin, alone or in combination with low-dose aspirin.

Further reading: A full list of the references from which this article was written is available on request.
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