SydPath
ST VINCENT'S PATHOLOGY

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ANTI-PHOSPHOLIPID SYNDROME INFORMATION SHEET

INTRODUCTION

The anti-phospholipid syndrome (APS) is an autoimmune disease caused by increased procoagulant activity. It can occur either alone, or associated with another autoimmune disease, most commonly SLE. This may lead to venous, arterial or small vessel thrombosis, recurrent miscarriages (most commonly in the second trimester), or premature births. Affected patients have antibodies to cardiolipin (aCL) and/or beta 2 glycoprotein 1 (b2GP1) and/or a positive functional assay, the lupus anticoagulant (LA). APS is present if at least one of the above clinical criteria is present AND at least one of the above laboratory tests is positive on two occasions at least 12 weeks apart, but less than 5 years apart.

THE ANTICARDIOLIPIN ANTIBODY (aCL) TEST

Whilst SydPath measures serum IgG and IgM antibodies to cardiolipin, it is the IgG antibody that is most strongly associated with APS. aCL may transiently appear during or after a variety of infectious, inflammatory and malignant diseases, when they are not associated with increased risk of thromboembolism. If a positive result is obtained, the test should be repeated at least 12 weeks later. In the absence of clinical features, in general, the higher the aCL value, the higher the risk of thromboembolic disease. Low level aCL results carry much less weight and are of uncertain significance.

ANTIBODIES TO B2GP1

Cardiolipin binds to the serum protein b2GP1, and patients with APS may be positive for antibodies to cardiolipin, to b2GP1, or to both. When b2GP1 is ordered, SydPath only measures IgG antibodies. SydPath provides a numerical b2GP1 value. b2GP1 antibodies are probably more specific than aCL for the diagnosis of APS, but less sensitive.

THE LUPUS ANTICOAGULANT (LA) TEST

Patients with APS experience thromboembolic disease, but paradoxically their plasma exhibits prolonged clotting times in certain coagulation tests. When LA is requested, SydPath requires one citrate tube (light blue top) and performs the dilute Russell's Viper Venom Time and the Tissue Thromboplastin Inhibition test. Only one of these two tests needs to be positive to report that the patient has an LA. SydPath reports positive LA results as weak, moderate or strong. Some APS patients may be positive for LA, but negative in the aCL and b2GP1 tests. Numerous studies have suggested that LA is more strongly associated with thromboembolic disease than antibodies to cardiolipin or b2GP1. The presence of a normal APTT does not exclude LA, and specific LA testing should always be requested if APS is suspected. It is possible to perform LA testing on patients receiving heparin or warfarin,

but a weak LA may be missed, hence it is advisable to repeat testing once the patient ceases anticoagulant therapy. The effects of newer oral anticoagulants (i.e. dabigatran, apixaban and rivaroxaban) on LA testing are variable and it is recommended that LA testing NOT be performed whilst patients are receiving these medications.

TEST ORDERING AND INTERPRETATION

If APS is suspected, all three assays (aCL, b2GP1 and LA) should be requested. Some patients with APS are positive in only one assay. Patients positive in all three assays may be at higher risk of thromboembolic disease, compared with patients positive in only one or two assays. Caution needs to be exercised in interpretation of results because low level positive results are common and of dubious significance. Additionally, a diagnosis of APS cannot be made on test results alone but requires at least one clinical criterion. The presence of high levels of antibodies, even if not associated with clinical features, probably does represent a major risk factor for future thromboembolic events, and expert assessment of the patient is advisable.