Lupus Anticoagulant Test Profile

LAs are heterogeneous IgG autoantibodies that attach to plasma protein-binding phospholipids. LAs are identified by their ability to prolong clot-based assays that have reduced reagent phospholipid (Figures10 and 11) (47). Stepwise testing employs two clot-based assays that may be prolonged by LA. Laboratories may choose a low phospholipid PTT reagent designed to detect LA (PTT-LA®, Diagnostica Stago) and the dilute Russell viper venom time (DRVVT) assay such as Cryocheck LA Check®, Precision BioLogic. Since UFH prolongs the PTT-LA, an abnormal result should first be followed by a thrombin time. If the thrombin time is >21 seconds, the sample is treated with Hepsorb® or Hepzyme® and the PTT-LA is repeated. Commercial DRVVT reagents are not prolonged by UFH because they contain Hepsorb®; however, they may be prolonged by warfarin due to low levels of factors X and II.

When heparin is ruled out or inactivated, the PTT-LA is repeated in a1:1 mixture of patient and normal reagent plasma. The mixture should be incubated 1–2 hours at 37°C prior to repeating the PTT-LA because some LAs are time- and temperature-dependent. A prolonged DRVVT is also mixed with normal reagent plasma and a DRVVT performed following incubation. If the result of one or both mixing studies is prolonged to greater than 10% beyond the result of the incubated normal plasma alone, an inhibitor is suspected, increasing the chance of a positive LA. If the patients on warfarin, a near correction of the DRVVT result may be due to factor II or X deficiencies, especially if the INR is above the therapeutic range. Thus, not all cases with lack of correction are due to an inhibitor.

LA is confirmed by correction of the prolonged PTT-LA or DRVVT with a high phospholipid reagent. The Diagnostic Stago Staclot LA or Precision BioLogic Cryocheck LA Sure® assays are designed to confirm the presence of LA. If only the PTT-LA is affected, rule out a factor VIII inhibitor by performing a factor VIII activity assay. This is very importantbecause factor VIII inhibitors may give the same results as an LA, even in the confirmatory step (positive Staclot LA). This distinction makes a significant difference, since patients bleed in acquired hemophilia and must be treated appropriately.