Discontinuation of Bleeding Time

The bleeding time is a highly operator-dependent test, plagued by a lack of clinical reproducibility, and affected by numerous technical factors such as location of the incision, pressure applied, operator experience, and patient factors such as age, gender, diet, hematocrit, skin laxity and medications. Over the past decade, abundant evidence has accumulated that the bleeding time is not reliable as a screening test for perioperative bleeding or as a diagnostic test for bleeding disorders. The limitations of the bleeding time were reviewed in the April 2002 issue of the Clinical Laboratory Letter. In view of these findings, Saint Luke's Regional Laboratories will discontinue the bleeding time on June 1.

The best pre-procedure screen to predict bleeding is a careful clinical history including family, dental, obstetric, surgical, traumatic injury, transfusion, and drug history. If the history yields no suspicion of a hemostatic defect, further testing is not warranted. If the history is positive, the most common hemostatic disorders can be ruled out by performing routine screening tests of coagulation (PT & APTT), a platelet count, and ruling out von Willebrand’s disease (Factor VIII, von Willebrand Factor Antigen, Ristocetin Cofactor). If these tests are negative, the possibility of a platelet function disorder can be investigated by ordering platelet aggregation studies.

New Test for LDL Subfractions

Elevated low density lipoprotein cholesterol (LDL-C) is a well-known risk factor for coronary heart disease (CHD). The National Cholesterol Education Program’s Adult Treatment Panel recommends LDL-C levels be less than 100 mg/dL for patients with known CHD or with CHD Risk Equivalents such as type 2 diabetes mellitus, symptomatic carotid artery disease, or multiple CHD risk factors. As important as LDL-C is as a risk predictor, there are still many patients who have LDL-C levels less than 130 mg/dL but still have heart attacks. Patients with high triglycerides and low HDL-C are especially likely to have atherogenic dyslipidemia which also includes mild elevations in LDL-C and the presence of small, dense LDL particles. Recent evidence has suggested that a preponderance of small LDL particles may be an independent risk factor for CHD. A recent paper from the Diabetes Atherosclerosis Intervention Study group found that in patients with LDL-C of <115 g/dL, progression of coronary artery disease was nearly 4 times greater in those with small LDL than in those with large LDL. Patients with small LDL had an equivalent risk for progression as those with LDL-C > 140 mg/dL (Vakkilainen et al. Circulation 2003;107:1733).

Although the NCEP does not currently recommend measuring LDL subfractions as a screening tool, it does acknowledge that detection of small LDL is a useful indicator of atherogenic dyslipidemia and the metabolic syndrome. The presence of small LDL particles also supports intensified therapeutic lifestyle changes. If small LDL particles accompany elevated triglycerides or low HDL-C in high risk persons, nicotinic acid or fibrin acid derivatives can be included as a component of lipid lowering therapy (NCEP ATPIII Report, p. II-33).

The Lipid and Diabetes Research Laboratory will begin offering the Lipoprint™ LDL subfraction test on May 26. Lipoprint is the only FDA-approved test for measuring LDL subfraction cholesterol levels. It reports out the LDL phenotype as type A, intermediate, or type B based on particle size. Pattern A indicates lower risk and pattern B higher risk for CHD. Sample requirement is 1 mL of serum or EDTA plasma. Lipoprint can be ordered through Saint Luke’s Regional Laboratories. CPT code is 83716.

Thyroid Peroxidase Antibody Change

Saint Luke’s Regional Laboratories will change its method for measuring thyroid peroxidase antibody from a manual to an automated enzyme immunoassay on June 1. This change will necessitate a change in the reference range from <1.0 U/mL to <35 U/mL.
Herpes Simplex Virus Detection by PCR

Herpes simplex virus (HSV-1 and HSV-2) infections are found worldwide, even in remote populations. Nearly all adults have antibodies to HSV-1 by the fifth decade of life, and the seroprevalence of HSV-2 has increased at an alarming rate over the last decade.

HSV is associated with a variety of clinical syndromes, including mucocutaneous infections, central nervous system and visceral infections. HSV infections vary widely in severity, from common cold sores to life-threatening infections in infants and immunocompromised hosts.

Viral culture has been the gold standard for the diagnosis of mucocutaneous lesions. Differentiation of HSV-1 from HSV-2 is important prognostically, since genital HSV-2 infection is twice as likely to reactivate and recurs 8-10 times more frequently than genital HSV-1 infections. Likewise, oral-labial HSV-1 infection recurs more frequently than oral-labial HSV-2 infection. The Virology Laboratory at St. Luke's Hospital has performed 1613 herpes cultures over the last two years. Of these cultures, 554 (34%) were positive, making HSV the most frequently isolated virus. The majority of the positive cultures were from genital lesions, with 40% yielding HSV-1 and 60% positive for HSV-2.

With the introduction of real-time PCR technology, herpes virus detection can be accomplished very rapidly. Recent studies have shown real-time PCR to be more sensitive and equally specific compared to virus culture for the identification of HSV in genital lesions. Similarly, parallel testing of 139 genital specimens received for herpes culture by St. Luke's Virology had the following results:

<table>
<thead>
<tr>
<th></th>
<th>HSV-1 PCR</th>
<th>HSV-2 PCR</th>
<th>PCR Neg</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSV-1 Culture</td>
<td>39</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HSV-2 Culture</td>
<td>0</td>
<td>44</td>
<td>0</td>
</tr>
<tr>
<td>Culture Neg</td>
<td>2</td>
<td>6</td>
<td>48</td>
</tr>
</tbody>
</table>

Effective June 1, St. Luke's Regional Laboratories will replace conventional herpes virus culture with real-time PCR for all genital specimens. In addition to enhanced sensitivity, PCR results will be available the same or next day instead of 3-5 days required for culture. The charge for PCR is comparable to culture and specimen collection is the same. The test can be ordered as HSV PCR, genital and the CPT code is 87529.

West Nile Virus & Transfusion

WNV is a mosquito-borne virus that was associated with meningitis and encephalitis in over 4,000 individuals in 39 states in 2002. During 2002, WNV transmission by transfusion was identified in at least 21 cases, transmitted by blood components from 14 donors. Red blood cells, platelets, and fresh frozen plasma have been implicated in transfusion-transmitted disease. During last year's epidemic, it was estimated that 4 donors per 100,000 were infected with WNV. In the most severely affected communities at the peak of the epidemic, the donor infection rate may have approached 200 per 100,000.

Nucleic acid tests (NAT) for WNV in donated blood are under development and are expected to be implemented by July 1, 2003. If human infections occur in our area prior to the onset of testing, physicians may want to:

- Limit non-urgent transfusions
- Delay elective surgery
- Order autologous transfusions as appropriate.

In urgent situations the benefit of transfusion will far outweigh the risk of WNV transmission.

Physicians are also encouraged to report to the hospital transfusion service suspected cases of WNV occurring within 28 days after transfusion.

Oxycodone Detection

The Drug Abuse Warning Nework (DAWN) report states that oxycodone abuse was 108% higher in 2000 than in 1998. It also reports that oxycodone was mentioned in 2% of all emergency department episodes in 2000. The Triage Drug Screen which is used for stat drugs of abuse testing detects opiates, but is not very sensitive in detecting oxycodone. Recently, the laboratory implemented another rapid test specifically for oxycodone that can detect as little as 100 ng/mL. Results are reported as positive or negative. Testing is available 24 hours per day. Oxycodone can be ordered alone or in conjunction with the Triage Drug Screen. CPT code is 80101. Specimen requirement is 2 mL of urine.

F. V. Plapp, M.D., PhD,  M. L. Zucker, M.D.  C. E. Essmyer, M.D.