Platelet Function Inhibition – Aspirin

Effective Date: March 1, 2009
Performing Department: Hematology
Method: Turbidimetric Based Optical Detection
Use: Evaluate effectiveness of platelet inhibition during aspirin therapy

Clinical Significance:
Aspirin affects platelet function by irreversibly inhibiting the cyclooxygenase-1 (COX-1) enzyme involved in the conversion of arachidonic acid to thromboxane A2, which ultimately activates the GPIIb/IIIa receptors involved in platelet aggregation. If aspirin has produced the expected anti-platelet effect, such aggregation will not occur.

Reference Range:
• Equal to or greater than 550 ARU = No platelet inhibition consistent with aspirin therapy detected
• Less than 550 ARU = Platelet inhibition consistent with aspirin therapy has been detected
  Note: Results are reported in Aspirin Reaction Units (ARU)

Specimen Requirements and Collection:
Preferred Specimen: • Whole blood in special light blue top citrate tube
(2.0 mL Greiner brand “reduced volume” tube containing 3.2% sodium citrate)
  Note: order SBMF #11460 to receive the special collection tubes

Collection:
• Collect blood samples using a 21 gauge or larger needle
• First, collect 1.0 to 2.0 mL of blood into a “discard” tube
  Note: tube collected before test sample must never contain a platelet inhibiting substance (e.g., EDTA)
• Next, fill a Greiner brand 2.0 mL citrate tube to volume indicated by black line on tube label
  (vacuum draw is 2.0 mL which is approximately half of tube capacity)
• Gently invert tube at least 5 times to ensure complete mixing of blood and anticoagulant
• Samples obtained from an indwelling catheter should be collected after sufficient discard, about 5.0 mL,
  has been drawn off to clear the line; ensure catheter is free of clots
• Samples obtained using a syringe must be immediately transferred to appropriate collection tube
Processing:
• Do not centrifuge • Do not remove plasma from cells • Do not refrigerate or freeze
Stability: • 4 hours room temperature (20-30°C)
Storage/Transport: • Room temperature

Causes For Rejection:
• Sample in tube other than a Greiner brand 2.0 mL light blue top “reduced volume” tube (3.2% sodium citrate)
• Sample centrifuged, refrigerated, frozen or contains clots
• Sample received more than 4 hours after collection

Testing Schedule:
• Performed daily upon receipt • Results available within 4 hours

Order: • Platelet Function Inhibition – Aspirin.......Test #: 25114 .........CPT: • 85576

Please direct questions or comments regarding this notice to Robert J. Tomec, M.D., Deborah H. Sun, Ph.D., or Brett Colter of South Bend Medical Foundation, (574) 234-4176 or (800) 544-0925.