sysmex WAM User Group 13
Let's Get Connected!
Intermountain Healthcare Platelet Clumping Project

Warren Brown
Lab Manager
Sevier Valley Medical Center
Platelet Clumping Resolution in EDTA

- Project Start- 07/27/2011

- Purpose- Produce a standardized procedure to confirm and result suspected EDTA-induced pseudothrombocytopenia.
Platelet Clumping Resolution in EDTA

• Common *in vitro* causes of pseudothrombocytopenia-
  
  – Poor/slow sample collection
  
  – Poor mixing
  
  – Insufficient EDTA due to overfilling
  
  – Antibodies that bind to platelets when activated by EDTA
Platelet Clumping Resolution in EDTA

• Common *in vitro* effects of pseudothrombocytopenia-
  – Decreased Platelet Count
  – Increased MPV
  – Increased WBC
Platelet Clumping Resolution in EDTA

• Options for Platelet Clumping Resolution:
  – Redraw patient: New EDTA sample
  – Redraw patient: Sodium Citrate sample
  – Incubate sample at 37 deg C.
Platelet Clumping Resolution in EDTA

• Putting the pieces together-
  – Intermountain Hematology Practice Council developed two protocols.
    • Technologist suspected EDTA-induced pseudothrombocytopenia
    • Physician suspected EDTA-induced pseudothrombocytopenia
Technologist suspects EDTA-induced pseudothrombocytopenia (low PLT, platelet clumps, +/-satellitism, absence of fibrin strands)

- Request new EDTA specimen
- Test new EDTA specimen
  - No clumps
  - Result CBC
- Test citrated specimen
  - Clumps
  - No clumps
  - Result EDTA CBC: hide WBC and MPV, result PLT with NOPLT & CLMPCF
  - Result EDTA CBC: attach comment CLMPEC to PLT result
- Result PLTCLP: hide WBCCIT and MPVCIT, result PLT CIT with CITCLP

Battery and Test Codes
- PLTCLP
- PLTCIT
- MPVCIT
- WBCCIT

English Text Codes
- CITCLP
  - Citrate anticoagulant did not prevent platelet clumping.
- CITPLT
  - PLT, PMV, and WBC from citrated specimen.
- CLMPEC
  - PLT appears artificially low due to platelet clumping present in both EDTA and citrated specimens.
- CLMPCF
  - Platelet clumping confirmed in second EDTA specimen.
- NOCIT
  - PLT ordered but not done on citrated specimen because no platelet clumps observed in EDTA specimen.
- NOPLT
  - PLT, MPV, and WBC not reported from EDTA specimen due to platelet clumps.
Physician suspects EDTA-induced pseudothrombocytopenia and orders CBCs or PLTs on both EDTA and citrated specimens.

**Battery and Test Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>PLTCLP</td>
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**English Text Codes**

- **CITCLP**: Citrate anticoagulant did not prevent platelet clumping.
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# Platelet Clumping Resolution in EDTA

## WAM Project Submission

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>WAM Product Version</th>
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</thead>
<tbody>
<tr>
<td>Software version</td>
<td>HPC would like to request building the following Test and Comment codes in WAM.</td>
</tr>
</tbody>
</table>

- **Battery Code**: PLTCLP  
  Battery will include test codes: CPLT, WBCCIT, MPVCIT

- **Test codes**:
  - CPLT - Platelet count multiplied by 1.1 \*CALC.PLT
  - WBCCIT - WBC count multiplied by 1.1 \*CALC.PLT
  - MPVCIT - Mean PLT Volume

- **Comment codes** – These comment codes should be available for the new test codes:
  - CITCLP - Citrate anticoagulant did not prevent platelet clumping.
  - CITPLT - PLT, MPV, and WBC from citrated specimen.
  - CLMPEC - PLT appears artificially low due to platelet clumping present in both EDTA and citrated specimens.
  - CLMPCF - Platelet clumping confirmed in second EDTA specimen.
  - NOCIT - PLT ordered but not done on citrated specimen because no platelet clumps observed in EDTA specimen.
  - NOPLT - PLT, MPV, and WBC not reported from EDTA specimen due to platelet clumps.

**Rules**:

1. A new rule needs to be built and applied to the Battery PLTCLP. This rule should always hold results for the battery for manual validation. In addition this rule should display the following OP Alert: “Results have been corrected for 1.1 dilution.”
Platelet Clumping Resolution in EDTA
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Thank You!

– Anne Tate (Sysmex WAM)
– Jennifer Pawlikowski (Sysmex WAM)
– Dr. Sterling Bennett (Intermountain Pathology)
– Mark Raddatz (Intermountain LIS)
– Intermountain HPC