PLATELET COUNT ESTIMATES

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☒ **St. Francis Hospital Federal Way, WA**   ☒ **St. Anthony Hospital Gig Harbor, WA**   ☐ **PSC**

PURPOSE

To provide instructions for performing platelet slide estimates.

BACKGROUND

Slide estimates for platelets are often performed to confirm accuracy of automated or manual counts. They may be used to determine an estimated range in cases of platelet clumping not resolved by other methods including recollection using sodium citrate anticoagulant.

RELATED DOCUMENTS

R-F-HEM0300   Platelet Estimate Ranges Microscope
R-W-HEM1317   Platelet Clumping- EDTA Induced

SPECIMEN REQUIREMENTS

Wright or Wright-Giemsa stained differential slide prepared from EDTA-whole blood.

EQUIPMENT/SUPPLIES

Nikon Eclipse 50i or 55i microscope
Nikon E400

INSTRUCTIONS

1. Using the 100X oil-immersion objective, choose an area of the slide in which the red cells are evenly separated with good distribution.

2. Count the number of platelets seen in 10 consecutive fields.

3. Divide the total by 10 to obtain the average number of platelets per oil-immersion field (OIF).

4. Multiply this average to obtain the mean platelet estimate. If using the Nikon Eclipse E400, 50i or 55i microscope, multiply by 12.3.

   Each platelet in the estimate represents 1000 platelets. See Platelet Estimate Ranges Microscope work instruction. Ranges vary 10% from the mean value.

5. Example: (52 plts counted per 10 fields)

   $52 \div 10 = 5.2$ platelets per OIF

   5.2 platelets x 12.3 = 64 (thousand) platelet estimate

6. Compare the estimate with the automated count.

7. If the estimate does not correlate with the platelet result within 25 %, repeat the estimate.

8. Rule out instrument error. Observe if giant platelets are present.

9. Determine an approximate range for the results. If platelet clumping is present and the specimen cannot be recollected, it may be necessary to suggest a general platelet range.   For example: use comment CLUMP "Unable to perform platelet count due to platelet clumping." The comments listed below should be used, if possible, to give the clinician an idea of the number of platelets present. Use BKRPLTEST, then F2 to choose the desired response.

    PLTA- Platelets appear adequate
    PLT D-Platelets appear decreased
    PLT I- Platelets appear increased
    PLT MD- Platelets appear markedly decreased
    PLT MI- Platelets appear markedly increased
    PLT SD- Platelets appear slightly decreased
    PLT SI- Platelets appear slightly increased

10. The platelet count should not be verified until an estimate has been obtained that supports the automated result. If automated results do not correlate, recollect specimen in EDTA, warmed EDTA or Sodium Citrate anticoagulant. See work instruction for Platelet Clumping- EDTA Induced.

TECHNICAL NOTES

1. Patients with low RBC counts may give a false high platelet count.

2. The factor used in platelet estimates is based on the field of view diameter for the microscope. The FOV diameter for the Nikon Eclipse E400, 50i or 55i is 22 mm for the objectives in use.

3. An estimated numeric range for the platelet count may be reported in a comment if requested by the physician. Make sure to identify it as an estimated number.

REFERENCES

Hematology Procedures for Abnormal Bloods, Coulter-Beckman Manual, appendix.

Hematology, Clinical Principles and Applications, Chapter 14, pp. 181-182.