

Peripheral Blood Smear and Body Fluid Smear Review

I. PRINCIPLE:

Review of unusual results/smears in Hematology is done by the pathologist to help interpret and correlate results with disease processes.

II. SPECIMEN:

EDTA whole blood

III. POLICY:

Before verifying results of a CBC, the technologist reviews the laboratory data and judges it against established criteria to determine if the smear and/or printouts need to be reviewed by the Pathologist. Peripheral blood smears showing the following numerical and/or morphologic abnormalities should be left for the Hematology Supervisor or DPIC review. The slides will then be sent for pathology review, unless that abnormality was reviewed **and** the patient shows the same abnormality. Criteria were established by the pathology group and are reviewed for appropriateness every 2 years.

IV. Criteria for Review of Peripheral Blood Smear of Body Fluid Smear

A. Red Blood Cells

1. Hgb < 6.0 g/dl or Hgb > 19 g/dl **NEWBORN** Hgb < 14 g/dl or > 23 g/dl
2. MCV > 115 and hemoglobin is <10 g/dl
3. ≥ 3 nRBC in Manual Diff **NEWBORN** (< 4 DAYS) > 15 nRBCs
4. RDW-CV > 22%
5. Severe morphologic abnormalities 3 or 4+ including: ovalocytes, target cells, teardrops, Rouleaux, agglutination or basophilic stippling
6. Sickle cells or shistocytes of 2-5/100x oil field
7. Hemoglobin Crystals

B. White Blood Cells

1. WBC < 2,000/uL WBC > 40,000/uL
2. WBC > 45,000/uL for Newborn to 7 days
3. WBC > 40,000/uL for infants > 7 days to 1 month
4. Absolute lymphocyte count > 7.5×10^3 /uL in individuals > 15 and < 40 years
5. Absolute lymphocyte count > 5.0×10^3 /uL in individuals ≥ 40 years old
6. Absolute neutrophil count < 1.0×10^3 /uL Please make Buffy Coat slides
7. Absolute monocyte count > 2.5×10^3 /uL only in individuals > 40 years old
8. Absolute eosinophil count > 2.0×10^3 /uL
9. Absolute basophil count > 2.0×10^3 /uL
10. Any blasts, promyelocytes, plasma cells, cells suspicious for malignancy and cells unable to be classified (identified)

If a new acute leukemia is suspected after normal business hours, report blasts and report the critical result. The slide should be saved for first AM review by the clinical pathologist. The pathologist on call should be

notified when the technologist is uncertain regarding the presence or absence of leukemia (>20% blasts).

11. Cells with unusual cytoplasmic granulation or inclusions
12. Hyposegmented or hypersegmented neutrophils

C. PLATELETS

1. Platelet count $\leq 50 \times 10^3/\mu\text{L}$ or $> 750 \times 10^3/\mu\text{L}$
2. Smear with > 5 giant platelets per 10 WBCs
3. Presence of circulating micromegakaryocytes

E. Miscellaneous

1. Any smear with microorganisms present
2. Smear review requested by the physician
3. For Illinois Cancer Care patients: An initial smear review will be performed if any of the above criteria is met. No additional review is needed with the exception of new unusual findings.

V. Procedure:

1. Leave all slides that meet the criteria.

When a slide meets the criteria listed above (even if the patient has been reviewed before), leave a copy of the instrument print out with the slide placed in a slide "folder" or carrier for the lead or DPIC.

2. Label the print out "Review". Included should be
 - a. The reason for the review
 - b. Any patient information you have
 - c. If the results needed to be entered into Sunquest
3. A cumulative report should accompany all reviews.

4. Lead/DPIC will review all slides left for review.

The Hematology Lead or DPIC will review the laboratory results and the slide and look in Sunquest for a previous review. Once a patient has had a Pathologist Review for a hematology abnormality an additional review is not necessary. If an additional abnormality arises, the patient smear should be reviewed again.

5. Slides for peripheral blood review by the Pathologist should have a Path Review ordered in Sunquest. Add the test code PRWEV to the accession number being reviewed.
6. The slides and cumulative report are delivered to the Pathologist listed as EE on the Pathologists' monthly schedule.
7. Peripheral smear slides returned to Hematology should be placed in the slide box corresponding to the date of the slide. Body Fluid slides have a separate box above the TOSOH G8.