

BONE MARROW ASPIRATION AND CORE BIOPSY

Principle:

Examination of the bone marrow by aspiration and core biopsy is used for diagnosing and staging both hematologic and many non-hematologic disorders. Many special studies can be performed on bone marrow samples if the specimen is properly collected (e.g. flow cytometry, cytogenetics, molecular diagnostics by PCR and FISH, microbiology and routine pathology). Our Board Certified Hematopathologists are also available to perform outpatient bone marrow aspirations and biopsies in the ARDX LMC outpatient clinic. Please call the ARDX LMC front office at 732-3441 to schedule an appointment.

Supplies:

1. ARDX LMC Requisition slip and bone marrow checklist.
2. Clean glass slides
3. Two Containers with Zinc formalin
4. Sodium heparin (green top) tube(s).
5. EDTA (lavendar top) tube (if PCR studies are desired).
6. 10 or 20 cc syringe(s)
7. Slide holders and biohazard bags for transport to the laboratory.
8. Standard bone marrow collection tray with supplies.

Specimen Collection:

In general, unilateral marrow aspiration and core biopsy specimens are performed. However, in cases where focal marrow involvement is likely (e.g. Hodgkin Lymphoma, metastatic solid tumor, or granulomatous disease) bilateral bone marrow samples are recommended. The major limitation to accurate diagnosis is sample size. If possible, CBC with differential (report from office lab is acceptable), unstained peripheral smear (performed at office lab), bone marrow aspirate smears, aspirate clot sections, core biopsies (of at least 1 cm in length) and core biopsy touch preps are desired on every case.

1. Bone Marrow Aspiration:

- a. Label clean glass slides with the patients name and site if applicable (right and left). Label all specimen containers.
- b. Perform the bone marrow aspirate with the standard sterile technique. Aspirate bone marrow into a sterile syringe. Place a portion of the material onto the labeled slides and prepare smear preparations. Allow the slides to air dry prior to placing in a specimen container for transport.
- c. Place any residual aspirate material into a zinc formalin container. This material will be used to prepare aspirate clot sections.
- d. If the specimen is a **dry tap**, consider obtaining additional core biopsy specimens to obtain adequate material for diagnosis and any special studies needed. See "Special Studies" below.

2. Bone Marrow Core Biopsy:

- a. Perform a core biopsy with the standard sterile technique.
- b. Place the core biopsy onto a clean glass slide to obtain a touch preparation. Allow the slide to air dry prior to placing in a container for transport.
- c. Carefully remove the biopsy from the slide and place **either** into a second separate container of zinc formalin (for routine processing) or into a container with saline soaked gauze (if special studies such as flow cytometry as desired). Do not “float” the specimen in saline.

3. Special Studies:

- a. Flow Cytometry: Place marrow aspirate in green top (sodium heparin) tube.
- b. Microbiology Studies: Place marrow aspirate or core biopsy in green top (sodium heparin) tube.
- c. Cytogenetics: Place marrow aspirate or core biopsy into green top (sodium heparin) tube.
- d. Molecular Genetics by FISH (BCR/ABL, PML/RARA, TEL/AML1): Place material in green top (sodium heparin) tube.
- e. Molecular Genetics by PCR (BCR/ABL, BCL-2, PML/RARA, and T and B cell gene rearrangements): Place material in **lavendar top (EDTA) tube**.

4. Submission to the laboratory:

- a. Make certain that all slides, tubes and containers are properly labeled with the patients name (first and last) and specimen location. Include a right or left designation as applicable.
- b. Include a copy of the current CBC with differential report (from the office laboratory) and an unstained peripheral smear, labeled with the patient’s name, time and date of collection.
- c. Fill out the ARDX LMC requisition form and bone marrow checklist. Be sure to specify any special studies that are required (e.g. PCR for BCR/ABL).
- d. **Call ARDX LMC for a STAT courier pickup (249-4094).**

*****If you have any addition questions regarding correct specimen collection procedure or special study requests, contact the ARDX LMC Hematopathology Coordinator Debbie Velasquez, at 249-4232 or one of our Board Certified Hematopathologists at 732-3441.**