LEUKEMIA/BONE MARROW TRANSPLANT PROGRAM OF BRITISH COLUMBIA
Division of Hematology and
CANCER GENETICS AND GENOMICS LABORATORY – BC CANCER

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Dear Colleagues,

This memo is to notify you that the Cancer Genetics and Genomics Laboratory (CGL) at BC Cancer will begin offering minimal/measurable residual disease (MRD) testing for select patients with Acute Myeloid Leukemia (AML) starting the week of April 11, 2022. Key points regarding this new testing are outlined below:

Eligibility for Testing

AML patients with mutated *NPM1* (Type A, B, D) or inv(16) or t(8;21) being managed with curative intent, intensive chemotherapy who would potentially be considered for stem cell transplant are eligible. This testing is not currently available to patients receiving palliative azacitidine-based or other palliative chemotherapy.

Testing Time-Points & Required Specimens

All test requests require a completed CGL myeloid requisition (http://cancergeneticslab.ca/requisitions/) including relevant clinical information (e.g. gene mutation, testing treatment/most recent treatment). Please be aware that this is an RNA based test and so transit time from collection to receipt at CGL cannot exceed 48hrs.

- At Diagnosis for all AML or query AML patients (Samples are sent prior to the identification of a targetable lesion).
  - 2 x 0.5 mL of bone marrow in EDTA (one for MRD testing (RNA) and one for Myeloid Panel (DNA))
  - 1 x 20 mL of peripheral blood in EDTA (for MRD testing (RNA))
  - Bone marrow aspirate in media for karyotype analysis should continue to be sent to the cytogenetics laboratory in your jurisdiction
- After first consolidation cycle
  - 1 x 5 mL of bone marrow in EDTA
  - 1 x 20 mL of peripheral blood in EDTA
  - Only available for patients known to have mutated NPM1, t(8;21), or inv(16)/t(16;16)
- Ongoing monitoring
  - 1 x 20 mL of EDTA peripheral blood
  - Every 4 weeks ending two years after consolidation chemotherapy or every 4 weeks ending one year after allogeneic stem cell transplant

Test Reporting and Clinical Use

- TAT is 14 weekdays and reports will be available in CAIS and Cerner.

See the attached algorithms on the use of MRD testing in clinical decision making (also available at https://www.leukemiabmtprogram.org/healthcare-professionals/cancer-management-guidelines/)

- Presently, this testing is primarily intended to be used for the early identification of relapse following chemotherapy or stem cell transplant. Early identification of molecular relapse as opposed to hematologic or clinical relapse will allow for earlier intervention (e.g. stem cell transplant, withdrawal of immunosuppression post stem cell transplant) with the aim of preventing overt relapse
- Patients being considered for stem cell transplant or other interventions such as donor lymphocyte infusion based on this testing should be presented at the L/BMT outpatient rounds

We anticipate this new testing will improve outcomes for this subset of patients. Please feel free to contact David Sanford or the CGL Geneticists for questions or problems that arise related to this testing program.

Best Regards,

David Sanford and Stephen Yip