Acute Myelogenous Leukemia – Adult (Age ≥ 18 years)

**INITIAL EVALUATION**

Acute myelogenous leukemia (AML)

- CBC with platelets, comprehensive metabolic panel
- Bone marrow exam with cytogenetics and molecular analysis
- Echocardiogram
- Chest x-ray

Acute promyelocytic leukemia

- t(8;21) and inv(16)

Age < 60 years

Other

Age ≥ 60 years or not eligible for intensive chemotherapy

- Low intensity therapy
  - Hypomethylating agent (azacitidine or decitabine) plus venetoclax
  - Low dose cytarabine plus cladribine plus venetoclax alternating with hypomethylating agent (azacitidine or decitabine) plus venetoclax
  - If IDH mutated, add enasidenib or ivosidenib
- Clinical trial

**TREATMENT**

- Arsenic trioxide plus all-trans retinoic acid (ATRA)
- For patients with white blood cell count > 10 K/microliter, add idarubicin and/or gemtuzumab ozogamicin
- Fludarabine, cytarabine, filgrastim plus gemtuzumab ozogamycin or Clinical trial
- Idarubicin plus cytarabine with or without cladribine or fludarabine or Clinical trial
- If FLT3 mutated, add midostaurin or sorafenib or gilteritinib

**EVALUATION**

Repeat bone marrow exam approximately 2-3 weeks after initiation of therapy depending on the induction regimen

- Complete remission?
  - Yes
  - Maintenance
    - Oral azacitidine or Clinical trial
  - Surveillance
    - Measureable residual disease monitoring
  - Stem cell transplant (if high risk) or consolidation, then consider maintenance or surveillance
  - No
    - Clinical trial
    - Discuss Goal Concordant Care (GCC) with patient or if clinically indicated, with Surrogate Decision-Maker (SDM)

**Notes:** Consider Clinical Trials as treatment options for eligible patients. Stem cell transplant guidelines are not included with this algorithm. Leukemia patients should be referred and treated at a comprehensive cancer center.

1 See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
2 Consider MD Anderson approved biomarkers
3 See Leukemia Clinical Trials
4 GCC should be initiated by the Primary Oncologist. If Primary Oncologist is unavailable, Primary Team/Attending Physician to initiate GCC discussion and notify Primary Oncologist. Patients or if clinically indicated the SDM should be informed of therapeutic and/or palliative options. GCC discussion should be consistent, timely, and re-evaluated as clinically indicated. The Advance Care Planning (ACP) note should be used to document GCC discussion. Refer to GCC home page (for internal use only).

Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson’s specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient’s care. This algorithm should not be used to treat pregnant women.
SUGGESTED READINGS


MD Anderson Institutional Policy #CLN1202 - Advance Care Planning Policy
Advance Care Planning (ACP) Conversation Workflow (ATT1925)


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DEVELOPMENT CREDITS

This practice algorithm is based on majority expert opinion of the Leukemia Center providers at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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