THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
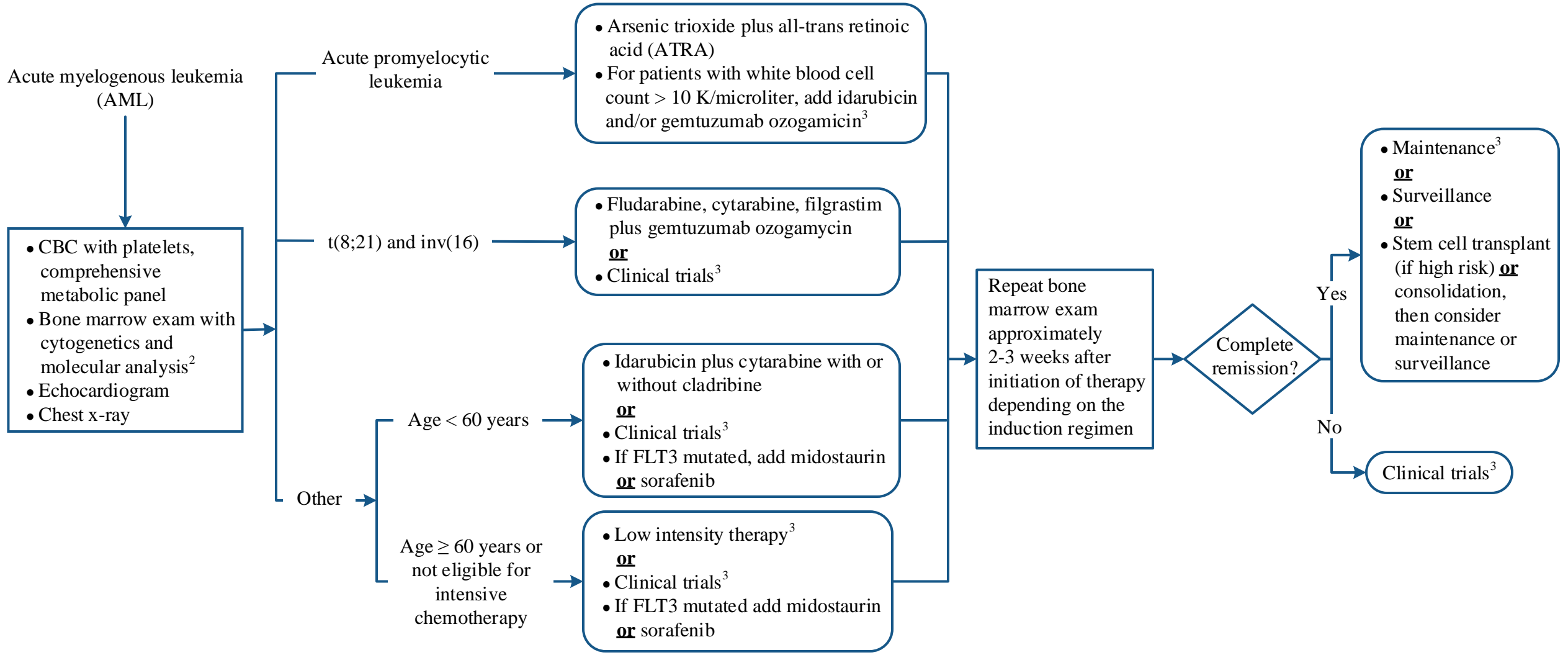
Making Cancer History®

Acute Myelogenous Leukemia – Adult (Age ≥ 18 years)

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.

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.

INITIAL EVALUATION[1]

Acute myelogenous leukemia (AML)

- CBC with platelets, comprehensive metabolic panel
- Bone marrow exam with cytogenetics and molecular analysis[2]
- Echocardiogram
- Chest x-ray

TREATMENT

Acute promyelocytic leukemia
- Arsenic trioxide plus all-trans retinoic acid (ATRA)
- For patients with white blood cell count > 10 K/microliter, add idarubicin and/or gemtuzumab ozogamicin[3]

t(8;21) and inv(16)
- Fludarabine, cytarabine, filgrastim plus gemtuzumab ozogamycin
  or
- Clinical trials[3]

Other

Age < 60 years
- Idarubicin plus cytarabine with or without cladribine
  or
- Clinical trials[3]
- If FLT3 mutated, add midostaurin **or** sorafenib

Age ≥ 60 years or not eligible for intensive chemotherapy
- Low intensity therapy[3]
  or
- Clinical trials[3]
- If FLT3 mutated add midostaurin **or** sorafenib

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

Complete remission?

Yes →
- Maintenance[3]
  or
- Surveillance
  or
- Stem cell transplant (if high risk) **or** consolidation, then consider maintenance or surveillance

No →
Clinical trials[3]

---

[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

THE UNIVERSITY OF TEXAS
MD Anderson
~~Cancer~~ Center

Making Cancer History®

Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular toMD 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

Cicconi, L., & Lo-Coco, F. (2016). Current management of newly diagnosed acute promyelocytic leukemia. *Annals of Oncology*, *27*(8), 1474-1481. https://doi.org/10.1093/annonc/mdw171

Daver, N., Cortes, J., Kantarjian, H., & Ravandi, F. (2016). Acute myeloid leukemia: Advancing clinical trials and promising therapeutics. *Expert Review of Hematology*, *9*(5), 433-445. https://doi.org/10.1586/17474086.2016.1158096

Kadia, T. M., Ravandi, F., Cortes, J., & Kantarjian, H. (2015). Toward individualized therapy in acute myeloid leukemia: A contemporary review. *JAMA Oncology*, *1*(6), 820-828. https://doi.org/10.1001/jamaoncol.2015.0617

National Comprehensive Cancer Network. (2019). *Acute Myeloid Leukemia* (NCCN Guideline Version 3.2020). Retrieved from https://www.nccn.org/professionals/physician_gls/pdf/aml.pdf

Sanford, D., & Ravandi, F. (2015). Management of newly diagnosed acute myeloid leukemia in the elderly: Current strategies and future directions. *Drugs & Aging*, *32*(12), 983-997. https://doi.org/10.1007/s40266-015-0309-2

Acute Myelogenous Leukemia – Adult (Age ≥ 18 years)

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

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.

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:

Yesid Alvarado, MD (Leukemia)
Michael Andreeff, MD, PhD (Leukemia)
Kapil Bhalla, MD (Leukemia)
Gautam Borthakur, MBBS (Leukemia)
Prithviraj Bose, MD (Leukemia)
Jan Burger, MD (Leukemia)
Naval Daver, MD (Leukemia)
Courtney DiNardo, MD (Leukemia)
Zeev Estrov, MD (Leukemia)
Alessandra Ferrajoli, MD (Leukemia)[Ŧ]
Emil Freireich, MD (Leukemia)
Wendy Garcia, BS[♦]
Guillermo Garcia-Manero, MD (Leukemia)
Elias Jabbour, MD (Leukemia)
Nitin Jain, MBBS (Leukemia)

Tapan Kadia, MD (Leukemia)
Hagop M. Kantarjian, MD (Leukemia)[Ŧ]
Michael Keating, MD (Leukemia)
Marina Konopleva, MD, PhD (Leukemia)
Steven Kornblau, MD (Leukemia)
Kiran Naqvi, MD (Leukemia)
Maro Ohanian, DO (Leukemia)
Naveen Pemmaraju, MD (Leukemia)
Farhad Ravandi-Kashani, MD (Leukemia)[Ŧ]
Mary Beth Rios, RN (Leukemia)[Ŧ]
Koichi Takahashi, MD (Leukemia)
Philip Thompson, MBBS (Leukemia)
Srdan Verstovsek, MD (Leukemia)
Mary Lou Warren, DNP, APRN, CNS-CC[♦]
William Wierda, MD, PhD (Leukemia)

[Ŧ] Core Development Team
[♦] Clinical Effectiveness Development Team