

# Acute Myeloid Leukemia (excluding APL)

**STABILIZE** (By treating leukostasis, tumor lysis, infections, etc.)

**DETERMINE FITNESS**  
 Ferrara Criteria for Unfitness for Intensive Therapy (i.e 7+3 and transplant)

	Age < 60			Age 60-75			
Cyto-genetics	Favorable	Intermediate	Unfavorable	Favorable	Intermediate	Unfavorable	AML w/ MDS-RC
Treatment	7+3+GO	7+3 (7d of Ara-C +3d Daunorubicin)	?7+3 vs HMA+Ven?	7+3+GO	7+3 (Dauno 60)	HMA+ Venetoclax	CPX-351 (Liposomal 7+3)
Notes	Gemtuzumab Ozogomicin	Add Midostaurin on D8 if FLT-3+	No head-to-head trials	Gemtuzumab =Anti-CD33	Add Midostaurin on D8 if FLT-3+	CPX-351 not compared head to head with HMA+Venetoclax.	

**INDUCTION** (Tx given to induce a remission)

- Fit**
- Age > 75
  - CHF (EF < 50% or clinical CHF)
  - Pulm (Baseline needs O<sub>2</sub> or DLCO or FEV1 ≤ 65%)
  - ESRD
  - Cirrhosis (Childs-Pugh B or C)
  - Active infection resistant to anti-microbials
  - Current Mental Illness (requiring hospitalization, institutionalization, etc.)
  - ECOG PS ≥ 3 not related to leukemia
- Unfit**

**Day 14 Bone Marrow Biopsy** (for 7+3 and CPX, day 21 if midostaurin)

**Day 28 Bone Marrow Biopsy** (or at count recovery)

Hypoplasia

## RE-INDUCTION

5+2 or MEC or Hi-dose Ara-C (HiDAC) or CPX (if given initially) or 7+3+midostaurin (if FLT3) or HMA/Ven

Not in remission

Very Poor Prognosis (Try HMA+Venetoclax or Targeted Tx)

## CONSOLIDATION

HiDAC + GO (Numbered of cycles determined by MRD)

In remission

Relapse

**CURE**

Monitor CBC q1-3months

No relapse after 5 years

Not in remission

In Remission

**RISK STRATIFICATION** (Decide who to transplant)

Look at Cytogenetics (Karyotype)

- t(8;21)
- t(16;16)
- inv(16)
- Normal Cytogenetics
- Complex Karyotype (≥3 chromosomal abnormalities)
- Misc. Other Karyotypes\*

**Favorable** (65-70% chance of cure with chemo alone)

**Intermediate Risk** (Need to further risk stratify by mutation analysis)

**Unfavorable** (<10% chance of cure with chemo alone)

- Good** NPM1, CEBPAX2
- Bad** FLT3-ITD, ASXL1, RUNX1, p53

\*Other High Risk Karyotypes

t(6;9)	BCR-ABL
inv3	t(3;3)
5q-	17p-

MLL (KMT2A translocations except (9;11)  
 Monosomy of any chromosome except X or Y

## RE-INDUCTION

Not in remission

Chemo or targeted therapy

Remission

**ALLOGENEIC TRANSPLANT**

Relapse

Chemo or Targeted Tx +/- DLI

Very Poor Prognosis

## PALLIATIVE Tx

- Treatment (Median Overall Survival)
- HMA + Venetoclax (15 months) \*see protocol\* (DiNardo NEJM 2020)
  - Hypomethylating Agent (HMA) (10 months) (Azacitidine used in most studies, Decitabine felt to be equivalent)
  - LDAC + Glasdegib (9 months) (Cortes Leukemia 2019)
  - LDAC + Venetoclax (8 months) (Wei Blood 2020)
  - Low Dose Ara-C (LDAC) (4 months)
  - Hydroxyurea or Supportive Care (<4 months) (Dombret blood 2015)

Progression

Response

Targeted Therapy (if there's a target) OR Supportive Care

Keep Treating

\*HMA + Venetoclax\*

**Day 21-28 Bone Marrow**

<5% Blasts

>5% Blasts

Hold Venetoclax Start GCSF Start Next Cycle... When ANC>500 & PLT>50

Continue Venetoclax No GCSF Start Next Cycle on D29, regardless of counts

Dose Reduce Venetoclax for prolonged cytopenias (only if responding)