

## PROGNOSIS IN ACUTE LYMPHOBLASTIC LEUKEMIA

UNFAVORABLE	FAVORABLE
Advanced age	Younger Age
High leukocyte count at diagnosis	Low leukocyte count at diagnosis
Presence of myeloid antigens	Absence of myeloid antigens
Late achievement of CR	Early achievement of CR
Chromosomal abnormalities: t(9:22)(q34;q11) t(4;11)(q21;q23) -7 trisomy 8 abn(11q23) t(1;19)(q23;p13) – intermediate–unfavorable hypodiploid	Chromosomal abnormalities: Highly hyperdiploid (50–60 chromosomes) Del(12p) t(12p) t(10;14) t(14q11–q13)
CR= complete remission.	

Reference: [Bassan R, et al. Crit Rev Oncol Hematol 2004;50:223 – 61.](#)

## PROGNOSIS IN ACUTE MYELOID LEUKEMIA

UNFAVORABLE	FAVORABLE
Advanced age (> 55 – 60 years)	Younger age
High leukocyte count at diagnosis	Low leukocyte count at diagnosis
MDR-1 positive	MDR-1 negative
Presence of an antecedent hematological disorder	No previous hematologic disorder
Chromosomal abnormalities: See next Table.	Chromosomal abnormalities: See next Table.
Poor performance status	
Wilms tumor gene mutation	
Internal tandem duplications of LFT3 gene	
Ras and TP53 mutations	

Reference: Adapted from the American Society of Hematology Self Assessment Program, 2<sup>nd</sup> Edition, 2004.

## HIERARCHICAL CYTOGENETIC CLASSIFICATION SYSTEMS USED TO DEFINE PROGNOSTIC GROUPS IN YOUNGER ADULTS WITH AML

RISK CATEGORY	MRC	SWOG/ECOG	CALGB††
Favorable	t(8;21)	t(8;21) without del(9q) or complex karyotype	t(8;21)
	inv(16)/t(16;16)	inv(16)/t(16;16)/del(16q)	inv(16)/t(16;16)
	t(15;17)	t(15;17)	del(9q)
Intermediate	Normal karyotype Del(7q) +8 del(9q) abn(11q23) +21 +22 All other aberrations	Normal karyotype -Y +6 +8 del(12p)	Normal karyotype -Y del(5q) del(7q) t(9;11) +11 del(11q) abn(12p) +13 del(20q) +21
Unfavorable	Abn(3q) -5/del(5q) -7 ≥ 5 aberrations	Abn(3q) -5/del(5q) t(6;9) -7/del(7q) t(9;22)  abn(9q) abn(11q) abn(17p) abn(20q) abn(21q) ≥ 3 aberrations	inv(3)/t(3;3) t(6;9) t(6;11) -7 +8 sole or with 1 additional aberration t(11;19) ≥ 3 aberrations

Abbreviations: MRC, Medical Research Council; SWOG/ECOG, Southwest Oncology Group/Eastern Cooperative Group; CALGB, Cancer and Leukemia Group B.

\*Risk categories for overall survival are shown

†Patients with t(15;17) were not included in this analysis.

Reference: [Frohling S, et al. J Clin Oncol 2005;23:6285 - 95.](#)

# ACUTE MYELOID LEUKEMIA: WHO CLASSIFICATION

## WHO Classification of AML

Acute myeloid leukemia with recurrent genetic abnormalities

AML with t(8;21)(q22;q22), (AML1/ETO)

AML with abnormal bone marrow eosinophils and inv(16)(p13q22) or t(16;16)(p13;q22), (CBF $\beta$ /MYH11)

Acute promyelocytic leukemia with t(15;17)(q22;q12), (PML/RAR $\alpha$ ) and variants

AML with 11q23 (MLL) abnormalities

Acute myeloid leukemia with multilineage dysplasia

Following MDS or MDS/MPD

Without antecedent MDS or MDS/MPD, , but with dysplasia in at least 50% of cells or 2 or more myeloid lineages

Acute myeloid leukemia and myelodysplastic syndromes, therapy related

Alkylating agent/radiation-related type

Topoisomerase II inhibitor-related type (some may be lymphoid)

Others

Acute myeloid leukemia, not otherwise categorized

Classify as:

Acute myeloid leukemia, minimally differentiated

Acute myeloid leukemia without maturation

Acute myeloid leukemia with maturation

Acute myelomonocytic leukemia

Acute erythroid leukemia (erythroid/myeloid and pure erythroleukemia)

Acute megakaryocytic leukemia

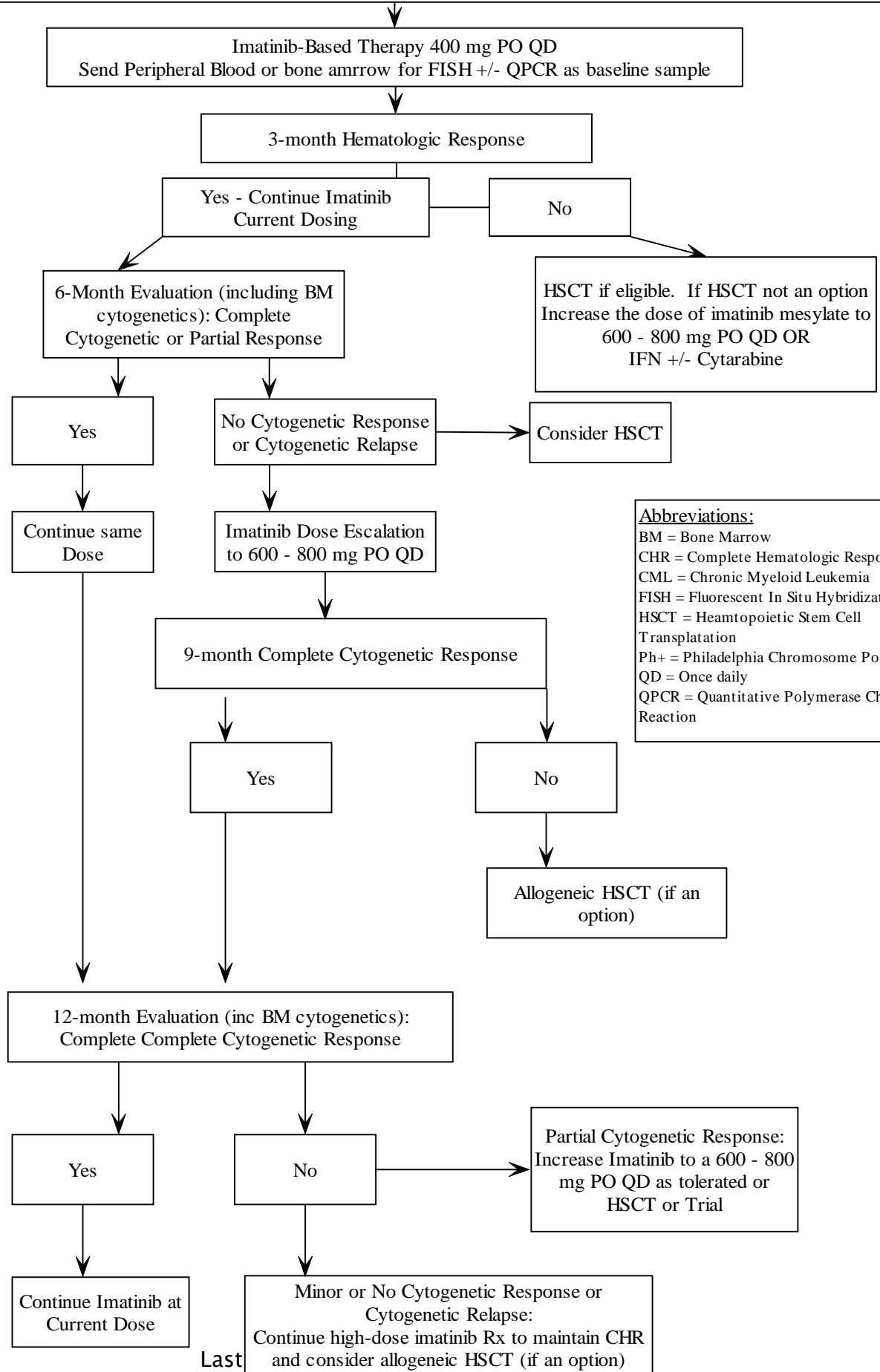
Acute basophilic leukemia

Acute panmyelosis with myelofibrosis

Myeloid sarcoma

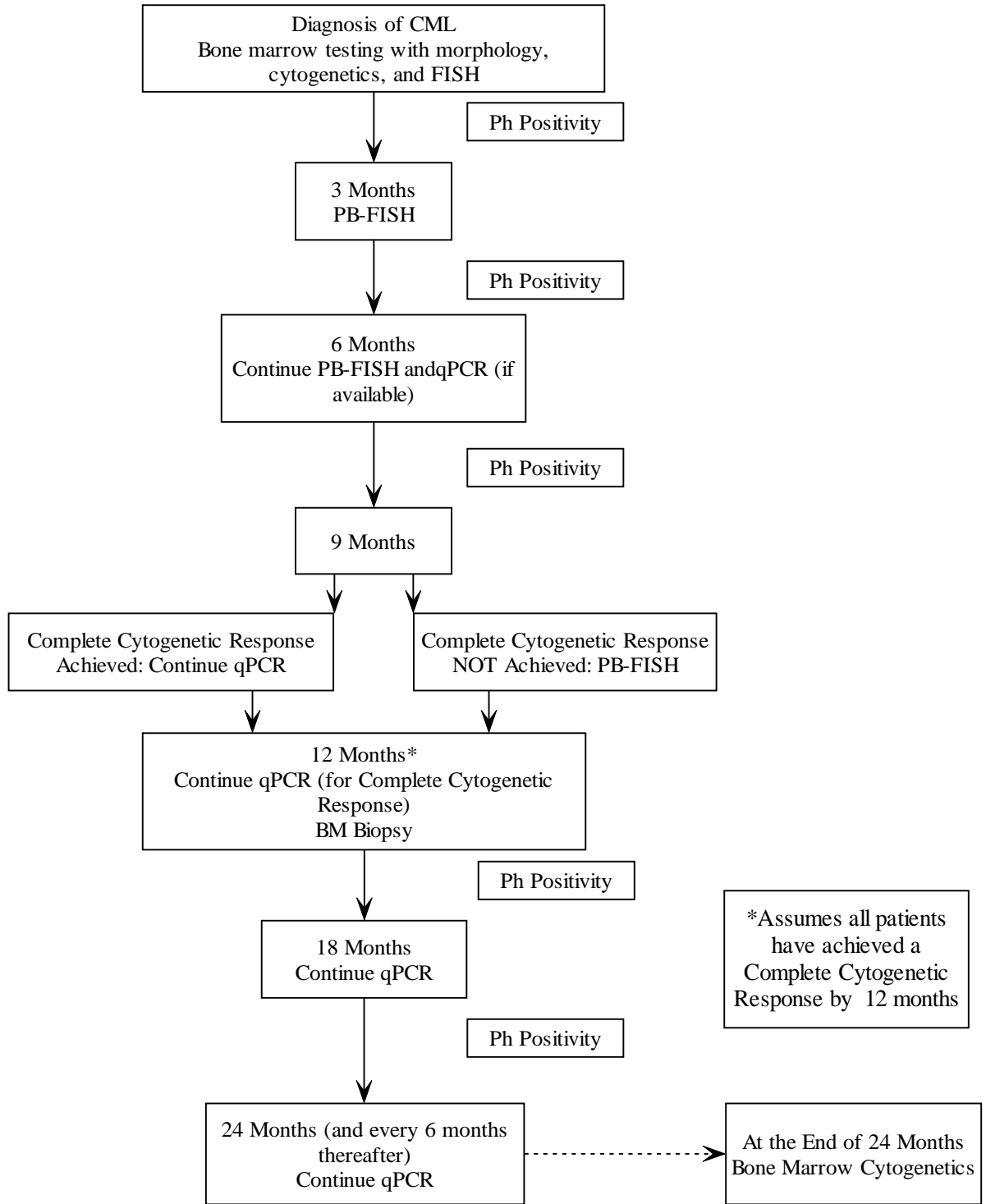
Reference: [Vardiman JW, et al. Blood 2002;100:2292 – 302.](#)

**Newly Diagnosed Ph+ CML**  
**Discuss Treatment Options: Medication and HSCT**  
**If a HSCT Candidate - perform HLA Testing**



**Abbreviations:**  
 BM = Bone Marrow  
 CHR = Complete Hematologic Response  
 CML = Chronic Myeloid Leukemia  
 FISH = Fluorescent In Situ Hybridization  
 HSCT = Hematopoietic Stem Cell  
 Transplantation  
 Ph+ = Philadelphia Chromosome Positive  
 QD = Once daily  
 QPCR = Quantitative Polymerase Chain  
 Reaction

**Recommended Timeline for Cytogenetic and Molecular Monitoring in Patients with CML Receiving Imatinib**



\*Assumes all patients have achieved a Complete Cytogenetic Response by 12 months

Abbreviations:  
 CML = Chronic Myeloid Leukemia  
 FISH = Fluorescence in situ hybridization  
 PB = Peripheral Blood  
 qPCR = Quantitative Polymerase Chain Reaction