LEUKEMIA TREATMENT REGIMENS:
Chronic Myeloid Leukemia (CML) (Part 1 of 3)

The selection, dosing, and administration of anticancer agents and the management of associated toxicities are complex. Drug dose modifications and schedule and initiation of supportive care interventions are often necessary because of expected toxicities and because of individual patient variability, prior treatment, and comorbidities. Thus, the optimal delivery of anticancer agents requires a healthcare delivery team experienced in the use of such agents and the management of associated toxicities in patients with cancer. The cancer treatment regimens below may include both FDA-approved and unapproved uses/regimens and are provided as references only to the latest treatment strategies. Clinicians must choose and verify treatment options based on the individual patient.

Primary Treatment

Ph positive or BCR-ABL positive

Imatinib 400mg daily.[1,2]

OR

Nilotinib 300mg twice daily.[1,3]

OR

Dasatinib 100mg daily.[1,4]

3 Month Evaluation

Complete hematologic response

Continue previous regimen.

Less than complete hematologic response
Evaluate patient compliance and drug–drug interactions, consider mutational analysis and bone marrow cytogenetics

Dasatinib 100mg daily.[1,5]

OR

Nilotinib 400mg twice daily.[1,6]

OR

Evaluation and discussion of HSCT.

OR

Clinical Trial.

Mutation[1,7]	Treatment Recommendation
T3151	HSCT or clinical trial
V299L, T315A, F317L/V/I/C	Consider nilotinib rather than dasatinib.
Y253H, E255K/V, F359V/C/I	Consider dasatinib rather than nilotinib.
Any other mutation	Consider high-dose imatinib (600–800mg daily)[1,8-10] or dasatinib or nilotinib.

6 Month Evaluation

Complete or partial cytogenic response[1]

Continue previous regimen.

Minor cytogenic response[1]

Nilotinib or dasatinib—continue previous regimen.

OR

Imatinib—increase dose to maximum of 800mg, as tolerated.

OR

Change therapy to alternate second generation TKI.

No cytogenetic response[1]
Evaluate patient compliance and drug–drug interactions, consider mutational analysis

Dasatinib 100mg daily.

OR

Nilotinib 400mg twice daily.

OR

Evaluation for HSCT depending on response to secondary therapy.

OR

Clinical Trial

12 Month Evaluation

Complete cytogenetic response[1]

Continue previous regimen.

Partial cytogenetic response[1]

Nilotinib or dasatinib—continue previous regimen.

OR

Imatinib—increase dose to maximum of 800mg, as tolerated.

OR

Change therapy to alternate second generation TKI.

Minor or no cytogenetic response[1]
Evaluate patient compliance and drug–drug interactions, consider mutational analysis

Dasatinib 100mg daily.

OR

Nilotinib 400mg twice daily.

OR

Evaluation for HSCT depending on response to secondary therapy.

OR

Clinical Trial

continued

LEUKEMIA TREATMENT REGIMENS:
Chronic Myeloid Leukemia (CML) (Part 2 of 3)

12 Month Evaluation (continued)	
Cytogenetic relapse[1] Evaluate patient compliance and drug-drug interactions, mutational analysis	Dasatinib 100mg daily. **OR** Nilotinib 400mg twice daily. **OR** Imatinib–increase dose to maximum of 800mg, as tolerated. **AND** Evaluation for HSCT depending on response to secondary therapy. **OR** Clinical Trial.
18 Month Evaluation	
Complete cytogenetic response[1]	Continue previous regimen.
Partial cytogenetic response[1] Evaluate patient compliance and drug-drug interactions, mutational analysis	Dasatinib 100mg daily. **OR** Nilotinib 400mg twice daily. **OR** Evaluation for HSCT depending on response to secondary therapy. **OR** Clinical Trial.
Cytogenetic relapse[1] Evaluate patient compliance and drug-drug interactions, mutational analysis	Dasatinib 100mg daily. **OR** Nilotinib 400mg twice daily. **OR** Evaluation for HSCT depending on response to secondary therapy. **OR** Clinical Trial.
Advanced Phase	
Accelerated phase	Dasatinib 140mg daily (70mg twice daily).[1,11] **OR** Nilotinib 400mg twice daily.[1,12] **OR** Consider HSCT based on response. **OR** Clinical Trial.
Blast crises—Lymphoid	ALL-type induction chemotherapy,[1,13] plus TKI followed by HSCT, if feasible.[1,14,15] **OR** TKI followed by HSCT, if feasible.[1,16-19] **OR** Clinical Trial.
Blast crises—Myeloid[1]	AML-type induction chemotherapy, plus TKI followed by HSCT, if feasible. **OR** TKI followed by HSCT, if feasible. **OR** Clinical Trial.
HSCT **Not in remission or in relapse**	Imatinib or dasatinib or nilotinib.[1,20] **OR** DLI[1,21] **OR** IFN 9 MIU/PEG-IFN 450mcg weekly.[1,22] **OR** Clinical Trial.

continued

LEUKEMIA TREATMENT REGIMENS:
Chronic Myeloid Leukemia (CML) (Part 3 of 3)

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(Created 06/2012)