Chronic Myeloid Leukemia Treatment Regimens

Clinical Trials: The NCCN recommends cancer patient participation in clinical trials as the gold standard for treatment.

Cancer therapy selection, dosing, administration, and the management of related adverse events can be a complex process that should be handled by an experienced healthcare team. Clinicians must choose and verify treatment options based on the individual patient; drug dose modifications and supportive care interventions should be administered accordingly. The cancer treatment regimens below may include both U.S. Food and Drug Administration-approved and unapproved indications/regimens. These regimens are only provided to supplement the latest treatment strategies.

These Guidelines are a work in progress that may be refined as often as new significant data becomes available. The National Comprehensive Cancer Network Guidelines® are a consensus statement of its authors regarding their views of currently accepted approaches to treatment. Any clinician seeking to apply or consult any NCCN Guidelines® is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient's care or treatment. The NCCN makes no warranties of any kind whatsoever regarding their content, use, or application and disclaims any responsibility for their application or use in any way.

Note: All recommendations are category 2A unless otherwise indicated.

▶Chronic Phase CML[1,a]

REGIMEN	DOSING
Primary Treatment for Low-risk Score[1]	
Preferred Regimens	
Bosutinib (Category 1)[2-7]	**Days 1-28:** Bosutinib 400mg orally once daily. Repeat cycle every 4 weeks.
Dasatinib (Category 1)[7-11]	**Days 1-28:** Dasatinib 100mg orally once daily. Repeat cycle every 4 weeks.
Imatinib (Category 1)[7,12-16]	**Days 1-28:** Imatinib 400mg orally once daily. Repeat cycle every 4 weeks.
Nilotinib (Category 1)[7,17-21]	**Days 1-28:** Nilotinib 300mg orally twice daily. Repeat cycle every 4 weeks.
Primary Treatment for Intermediate- or High-risk Score	
Preferred Regimens	
Bosutinib (Category 1)[2-7]	**Days 1-28:** Bosutinib 400mg orally once daily. Repeat cycle every 4 weeks.
Dasatinib (Category 1)[7-11]	**Days 1-28:** Dasatinib 100mg orally once daily. Repeat cycle every 4 weeks.
Nilotinib (Category 1)[7,17-21]	**Days 1-28:** Nilotinib 300mg orally twice daily. Repeat cycle every 4 weeks.
Other Recommended Regimens	
Imatinib[7,12-16]	**Days 1-28:** Imatinib 400mg orally once daily. Repeat cycle every 4 weeks.
Second-line and Subsequent TKI Therapy	
Asciminib[22-25]	**Resistant and/or intolerant to ≥2 TKIs** **Days 1-28:** Asciminib 80 mg orally once daily. Repeat cycle every 4 weeks. **OR** **Days 1-28:** Asciminib 40mg orally every 12 hours. Repeat cycle every 4 weeks. **T315I mutation** **Days 1-28:** Asciminib 200mg orally every 12 hours. Repeat cycle every 4 weeks.
Bosutinib[2-7]	**Days 1-28:** Bosutinib 500mg orally once daily. Repeat cycle every 4 weeks.
Dasatinib[7-11]	**Days 1-28:** Dasatinib 100mg orally once daily. Repeat cycle every 4 weeks.
Imatinib[7,12-16]	**Days 1-28:** Imatinib 400-600mg orally once daily. Repeat cycle every 4 weeks. **OR** **Days 1-28:** Imatinib 400mg orally twice daily. Repeat cycle every 4 weeks.

continued

Chronic Myeloid Leukemia Treatment Regimens

▶Chronic Phase CML[1,a] (continued)

REGIMEN	DOSING
Second-line and Subsequent TKI Therapy (continued)	
Nilotinib[7,17-21]	**Days 1-28:** Nilotinib 400mg orally twice daily. Repeat cycle every 4 weeks.
Omacetaxine[26-28] (Resistant and/or intolerant to ≥2 TKIs)	**Induction** **Days 1-14:** Omacetaxine 1.25mg/m^2 subcutaneously twice daily. Repeat cycle every 4 weeks until hematologic response, **followed by maintenance therapy with:** **Days 1-7:** Omacetaxine 1.25mg/m^2 subcutaneously twice daily. Repeat cycle every 4 weeks.
Ponatinib[29-31] (2 prior TKIs; *T315I* mutation; TKI intolerant/refractory)	**Days 1-28:** Ponatinib 45mg orally once daily. Repeat cycle every 4 weeks, **conditionally followed by (after achievement of *BCR-ABL1* (IS) <1%):** **Days 1-28:** Ponatinib 15mg orally once daily. Repeat cycle every 4 weeks.

▶Advanced Phase CML[1,a]

Treatment for Accelerated Phase[1]	
Preferred Regimens	
Bosutinib[2-7]	**Days 1-28:** Bosutinib 500mg orally once daily. Repeat cycle every 4 weeks.
Dasatinib[7-11]	**Days 1-28:** Dasatinib 140mg orally once daily. Repeat cycle every 4 weeks.
Nilotinib[7,17-21]	**Days 1-28:** Nilotinib 400mg orally twice daily. Repeat cycle every 4 weeks.
Ponatinib[7,29-31] (*T315I* mutation; other TKIs not indicated)	**Days 1-28:** Ponatinib 45mg orally once daily. Repeat cycle every 4 weeks, **conditionally followed by (after achievement of *BCR-ABL1* (IS) <1%):** **Days 1-28:** Ponatinib 15mg orally once daily. Repeat cycle every 4 weeks.
Other Recommended Regimens	
Imatinib[7,12-16,b]	**Days 1-28:** Imatinib 600mg orally daily. Repeat cycle every 4 weeks.
Useful in Certain Circumstances	
Omacetaxine[26-28] (Progression to accelerated phase only; resistant and/or intolerant to ≥2 TKIs)	**Induction** **Days 1-14:** Omacetaxine 1.25mg/m^2 subcutaneously twice daily. Repeat cycle every 4 weeks until hematologic response, **followed by maintenance therapy with:** **Days 1-7:** Omacetaxine 1.25mg/m^2 subcutaneously twice daily. Repeat cycle every 4 weeks.
Treatment for Blast Phase	
Preferred Regimens	
Bosutinib[2-7]	**Days 1-28:** Bosutinib 500mg orally once daily. Repeat cycle every 4 weeks.
Dasatinib[7-11]	**Days 1-28:** Dasatinib 140mg orally once daily. Repeat cycle every 4 weeks.
Imatinib[7,12-16]	**Days 1-28:** Imatinib 600mg orally daily. Repeat cycle every 4 weeks.
Nilotinib[7,17-21]	**Days 1-28:** Nilotinib 400mg orally twice daily. Repeat cycle every 4 weeks.

continued

Chronic Myeloid Leukemia Treatment Regimens

▶Advanced Phase CML[1,a] (continued)

REGIMEN	DOSING
Treatment for Blast Phase (continued)	
Preferred Regimens (continued)	
Ponatinib[7,29-31] **(*T315I* mutation; other TKIs not indicated)**	**Days 1-28:** Ponatinib 45mg orally once daily. Repeat cycle every 4 weeks, **conditionally followed by (after achievement of *BCR-ABL1* (IS) <1%):** **Days 1-28:** Ponatinib 15mg orally once daily. Repeat cycle every 4 weeks.

[a] CML, chronic myeloid leukemia; TKI, tyrosine kinase inhibitor.

[b]. Imatinib is not recommended for patients with disease progression on prior TKI therapy.

References

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