**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

<table>
<thead>
<tr>
<th>Ph positive or BCR-ABL positive</th>
<th>Imatinib 400mg daily.(^1,2) OR Nilotinib 300mg twice daily.(^1,3) OR Dasatinib 100mg daily.(^1,4)</th>
</tr>
</thead>
</table>

### 3 Month Evaluation

<table>
<thead>
<tr>
<th>Complete hematologic response</th>
<th>Continue previous regimen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than complete hematologic response</td>
<td>Dasatinib 100mg daily.(^1,5) OR Nilotinib 400mg twice daily.(^1,6) OR Evaluation and discussion of HSCT. OR Clinical Trial.</td>
</tr>
<tr>
<td>Evaluate patient compliance and drug–drug interactions, consider mutational analysis and bone marrow cytogenetics</td>
<td></td>
</tr>
</tbody>
</table>

### Mutation\(^1,7\)

<table>
<thead>
<tr>
<th>Treatment Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>T315I</td>
</tr>
<tr>
<td>V299L, T315A, F317L/V/I/C</td>
</tr>
<tr>
<td>Any other mutation</td>
</tr>
</tbody>
</table>

### 6 Month Evaluation

<table>
<thead>
<tr>
<th>Complete or partial cytogenic response(^1)</th>
<th>Continue previous regimen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor cytogenic response(^1)</td>
<td>Nilotinib or dasatinib—continue previous regimen. OR Imatinib—increase dose to maximum of 800mg, as tolerated. OR Change therapy to alternate second generation TKI.</td>
</tr>
<tr>
<td>No cytogenic response(^1)</td>
<td>Dasatinib 100mg daily. OR Nilotinib 400mg twice daily. OR Evaluation for HSCT depending on response to secondary therapy. OR Clinical Trial</td>
</tr>
<tr>
<td>Evaluate patient compliance and drug–drug interactions, consider mutational analysis</td>
<td></td>
</tr>
</tbody>
</table>

### 12 Month Evaluation

<table>
<thead>
<tr>
<th>Complete cytogenic response(^1)</th>
<th>Continue previous regimen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partial cytogenic response(^1)</td>
<td>Nilotinib or dasatinib—continue previous regimen. OR Imatinib—increase dose to maximum of 800mg, as tolerated. OR Change therapy to alternate second generation TKI.</td>
</tr>
<tr>
<td>Minor or no cytogenic response(^1)</td>
<td>Dasatinib 100mg daily. OR Nilotinib 400mg twice daily. OR Evaluation for HSCT depending on response to secondary therapy. OR Clinical Trial</td>
</tr>
<tr>
<td>Evaluate patient compliance and drug–drug interactions, consider mutational analysis</td>
<td></td>
</tr>
</tbody>
</table>

continued
### 12 Month Evaluation (continued)

| Cytogenetic relapse<sup>1</sup> | Dasatinib 100mg daily.  
| Evaluate patient compliance and drug-drug interactions, mutational analysis | OR  
| Nilotinib 400mg twice daily.  
| Imatinib—increase dose to maximum of 800mg, as tolerated.  
| Evaluation for HSCT depending on response to secondary therapy.  
| Clinical Trial.  
| OR  

### 18 Month Evaluation

| Complete cytogenetic response<sup>1</sup> | Continue previous regimen.  
| Partial cytogenetic response<sup>1</sup> | Dasatinib 100mg daily.  
| Evaluate patient compliance and drug-drug interactions, mutational analysis | OR  
| Nilotinib 400mg twice daily.  
| OR  
| Evaluation for HSCT depending on response to secondary therapy.  
| OR  
| Clinical Trial.  
| Cytogenetic relapse<sup>1</sup> | Dasatinib 100mg daily.  
| Evaluate patient compliance and drug-drug interactions, mutational analysis | 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)<sup>1,11</sup>  
| OR  
| Nilotinib 400mg twice daily.<sup>1,12</sup>  
| OR  
| Consider HSCT based on response.  
| OR  
| Clinical Trial.  
| Blast crises—Lymphoid | ALL-type induction chemotherapy<sup>1,13</sup> plus TKI followed by HSCT, if feasible.<sup>1,14,15</sup>  
| OR  
| TKI followed by HSCT, if feasible.<sup>1,16-19</sup>  
| OR  
| Clinical Trial.  
| Blast crises—Myeloid<sup>1</sup> | 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.<sup>1,20</sup>  
| OR  
| DLI<sup>1,21</sup>  
| OR  
| IFN 9 MIU/PEG-IFN 450mcg weekly.<sup>1,22</sup>  
| OR  
| Clinical Trial.  

Continued
References


