**A Guide to Combination Cancer Chemotherapy Regimens**

**Acute Myelogenous (AML)**

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**Cytarabine and Idarubicin (7 + 3)**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
<th>Administered on day(s)</th>
<th>Total dose/cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idarubicin</td>
<td>12 to 13 mg/m²</td>
<td>IV X X X</td>
<td>36 to 39 mg/m²</td>
<td></td>
</tr>
<tr>
<td>Cytarabine</td>
<td>80 to 200 mg/m²</td>
<td>CIVI X X X X X</td>
<td>560 to 1400 mg/m²</td>
<td></td>
</tr>
</tbody>
</table>

Cycle does not repeat. If the bone marrow does not show complete remission by day 28, reinduction with 5 or 7 days of cytarabine and 2 or 3 days of idarubicin is usually used.

**Alternatives:**
1. Idarubicin 12 mg/m² on days 1 through 3, cytarabine 25 mg/m² IV bolus on day 1, then 200 mg/m² CIVI on days 1 through 5.
2. Idarubicin 8 mg/m² daily for 5 days, and cytarabine 100 or 200 mg/m² daily for 7 days.
3. Idarubicin 5 mg/m² and cytarabine 1000 mg/m² daily for 6 days (also used in pediatric patients).
4. Idarubicin 12 mg/m² daily for 3 days, and cytarabine 1000 or 2000 mg/m² daily for 4 days.
5. Idarubicin 12 mg/m², and cytarabine 3000 mg/m² every 12 hours daily for 3 days.
6. Idarubicin 10 mg/m² daily for 3 days, and cytarabine 1000 mg/m² daily for 4 days.
7. Idarubicin 12 mg/m² daily for 3 days, and cytarabine 1500 to 3000 mg/m² every 12 hours daily for 6 days.
8. Cytarabine 100 mg/m² every 12 hours daily for 7 days, and idarubicin 12 mg/m² daily on days 5, 6, and 7.
9. Idarubicin 6 to 12 mg/m² daily for 3 days, and cytarabine 200 to 1000 mg/m² every 12 hours daily for 5 days.

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**CONSTITUENT DRUGS**
- Cytarabine
- Idarubicin

**SYNONYMS**
- 7 + 3

**USES**
- Induction regimen for acute myelogenous leukemias (AML)
- Current guidelines recommend idarubicin and cytarabine (7 + 3) as initial induction therapy for AML.

**SUPPORTIVE CARE**

**Emetogenicity**
- Predicted: > 90% (high) (see p. 520)

**Hydration**
- No special precautions required

**Hypersensitivity Precautions**
- No special precautions required

**Myeloid Growth Factors**
- Prophylactic use recommended (see p. 522)
- Neutropenia
  - Febrile: 92%

**Extravasation**
- Idarubicin (see p. 522)

**TOXICITIES**

**Common (> 50%)**
- **Dermatologic**
  - Alopecia
    - Grade 1 to 4: 37% to 100%
    - Grade 3 or 4: 7% to 40%
  - Gastrointestinal
    - Diarrhea: 46% to 78%
      - Grade 3 or 4: 16%
Leukemias

- Nausea and vomiting
  - Grade 1 to 4: 57% to 87%
  - Grade 3 or 4: ≤ 9%
- Mucositis
  - Grade 1 or 2: 43% to 65%
  - Grade 3 or 4: 3% to 18%
- Anorexia
  - Grade 1 to 4: 81%
  - Grade 3 or 4: 34%

**Infection**
- Grade 1 to 4: 66% to 92%
- Grade 3 or 4: 25% to 66%
  > Fever occurred in the majority of these patients.

**Hematologic**
- Hemorrhage
  - Grade 1 to 4: 10% to 56%
  - Grade 3 or 4: 1%
- Febrile neutropenia: 92%

**Hepatic**
- Hyperbilirubinemia
  - Grade 1 or 2: 13% to 45%
  - Grade 3 or 4: 8% to 9%
  - Mild (> 1.25 times ULN): 59%
- Increased AST or alkaline phosphatase
  - Grades 1 and 2: 47% and 52%, respectively
  - Grade 3 or 4: 5%

**Dermatologic**
- Rash
  - Grade 1 to 4: 4% to 41%
  - Grade 3 or 4: ≤ 5% of patients
- Increased serum transaminases
  - Grade 1 or 2: 16% to 41%
  - Grade 3 or 4: 3% to 9%

**Treatment-related mortality**
- Hypoplasia: 29%
- Cardiogenic shock and ventricular fibrillation: 2%
- Cardiac toxicity: 2%
- Infections: 4%
- Neutropenic infection: 4%

**Infrequent (5% to 19%)**
- Gastrointestinal
  - Esophagitis: 13%
- Cardiovascular
  - Congestive heart failure: 3% to 16%
  - Phlebitis: 7%
  - Unspecified clinical cardiac dysfunction (grades 1 to 4): 2% to 11%

**Recomended laboratory tests**

**Baseline**
- AST/ALT
- Total bilirubin
- Serum creatinine
- CBC with differential

**Prior to Each Treatment**
- CBC with differential
- An ANC of 1,000 cells/mcL and platelets of 75,000 cells/mcL are usually considered acceptable for treatment.

**DOSAGE MODIFICATIONS**

**Renal Function (see p. 526)**

**Liver Function (see p. 531)**
- Bilirubin
  - > 2.5 mg/dL: Reduce idarubicin dose by 50%.
  - > 5 mg/dL: Do not administer the drug.

**REFERENCES**


