The selection, dosing, and administration of anti-cancer 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 anti-cancer agents requires a healthcare delivery team experienced in the use of such agents and the management of associated toxicities in patients with cancer. The chemotherapy 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.

### ADULT LOW-GRADE INFILTRATIVE SUPRATENTORIAL ASTROCYTOMA/OLIGODENDROGLIOMA (Excluding Pilocytic Astrocytoma)

#### ADJUVANT TREATMENT

<table>
<thead>
<tr>
<th>REGIMEN</th>
<th>DOSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temozolomide (Temodar; TMZ)</td>
<td>Temozolomide 75mg/m² orally daily from the first day of radiotherapy until the last day of radiotherapy, but for no longer than 49 days. After a 4-week break, temozolomide 150mg/m² orally for the first cycle then, barring any hematologic toxicities, temozolomide 200mg/m² orally beginning with the second cycle; administer on Days 1–5, repeat cycle every 28 days for up to 6 cycles or Temozolomide 75 mg/m² orally for 7 days/week in 11 week cycles of 7 weeks on and 4 weeks off</td>
</tr>
</tbody>
</table>

#### RECURRENT OR PROGRESSIVE LOW-GRADE DISEASE

<table>
<thead>
<tr>
<th>REGIMEN</th>
<th>DOSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temozolomide</td>
<td>Days 1–49: Temozolomide 75 mg/m² orally daily Repeat cycle every 11 weeks</td>
</tr>
<tr>
<td>Cisplatin (Platinol) + etoposide (Toposar, VePesid, Etopophos; VP-16)</td>
<td>Days 1–3: Cisplatin 25mg/m²/day IV + etoposide 100mg/m²/day IV Repeat cycle every 4 weeks for first 3 cycles, then repeat every 5 weeks for next 3 cycles, then repeat every 6 weeks for the last three cycles; total 10 cycles over approximately 10–11 months (total dose 750mg/m² cisplatin and 3,000mg/m² etoposide)</td>
</tr>
<tr>
<td>Carboplatin (Paraplatin)</td>
<td>Carboplatin 560mg/m² IV at 4-week intervals; continued until disease progression, unacceptable toxicity, or for 12 additional courses after achieving maximal response</td>
</tr>
</tbody>
</table>

### ANAPLASTIC GLIOMAS

#### ADJUVANT TREATMENT

<table>
<thead>
<tr>
<th>REGIMEN</th>
<th>DOSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temozolomide</td>
<td>Days 1–5: Temozolomide 200mg/m²/day orally Repeat cycle every 28 days until disease progression or for up to 24 cycles</td>
</tr>
</tbody>
</table>

#### RECURRENT/SALVAGE TREATMENT

<table>
<thead>
<tr>
<th>REGIMEN</th>
<th>DOSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temozolomide</td>
<td>Temozolomide 50mg/m² daily for up to 1 year or until disease progression</td>
</tr>
<tr>
<td>Bevacizumab (Avastin) + irinotecan (Camptosar; CPT-11)</td>
<td>Day 1: Bevacizumab 10mg/kg IV in combination with irinotecan 125mg/m² or 340mg/m² IV in patients receiving enzyme inducing antiepileptics Repeat once every 14 days</td>
</tr>
<tr>
<td>Bevacizumab + fotemustine</td>
<td>Days 1 and 15: Bevacizumab 10mg/kg IV, plus Days 1 and 8: Fotemustine 75mg/m² IV, followed after a 3-week interval by a maintenance phase with bevacizumab 10mg/kg IV and fotemustine 75mg/m² IV every 3 weeks until tumor progression or unacceptable toxicity</td>
</tr>
<tr>
<td>Cyclophosphamide (Cytoxan)</td>
<td>Days 1–2: Cyclophosphamide 750mg/m² IV Repeat cycle every 4 weeks</td>
</tr>
</tbody>
</table>

### Glioblastoma

#### ADJUVANT TREATMENT

<table>
<thead>
<tr>
<th>REGIMEN</th>
<th>DOSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temozolomide</td>
<td>Concurrent with radiotherapy Temozolomide 75mg/m²/day orally Repeat cycle every 11 weeks</td>
</tr>
<tr>
<td>Carboplatin (Paraplatin)</td>
<td>Carboplatin 560mg/m² IV at 4-week intervals; continued until disease progression, unacceptable toxicity, or for 12 additional courses after achieving maximal response</td>
</tr>
</tbody>
</table>

#### RECURRENT/SALVAGE TREATMENT

<table>
<thead>
<tr>
<th>REGIMEN</th>
<th>DOSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bevacizumab + irinotecan</td>
<td>Initial therapy Day 1: Bevacizumab 10mg/kg IV Repeat every 2 weeks until disease progression After tumor progression Day 1: Bevacizumab 10mg/kg IV in combination with irinotecan 125mg/m² or 340mg/m² IV in patients receiving enzyme inducing antiepileptics Repeat once every 14 days</td>
</tr>
<tr>
<td>Bevacizumab + fotemustine</td>
<td>Days 1 and 15: Bevacizumab 10mg/kg IV, plus Days 1 and 8: Fotemustine 75mg/m² IV, followed after a 3-week interval by a maintenance phase with bevacizumab 10mg/kg IV and fotemustine 75mg/m² IV every 3 weeks until tumor progression or unacceptable toxicity</td>
</tr>
<tr>
<td>Cyclophosphamide</td>
<td>Days 1–2: Cyclophosphamide 750mg/m² IV Repeat cycle every 4 weeks</td>
</tr>
</tbody>
</table>

### Meningioma

#### PRIMARY TREATMENT

<table>
<thead>
<tr>
<th>REGIMEN</th>
<th>DOSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha-interferon (α-IFN)</td>
<td>α-IFN 10 million U/m² SC every other day for 4 weeks Repeat cycle every 4 weeks</td>
</tr>
</tbody>
</table>

### PRIMARY CNS LYMPHOMA

#### PRIMARY TREATMENT

<table>
<thead>
<tr>
<th>REGIMEN</th>
<th>DOSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-dose methotrexate (MTX) ≥3.5g/m² as single agent</td>
<td>Induction therapy Methotrexate 8g/m² IV administered every 14 days until complete response achieved or max of 8 cycles reached Consolidation Methotrexate 8g/m² IV administered every 14 days for 2 cycles Maintenance therapy Methotrexate 8g/m² IV administered every 28 days for 11 cycles</td>
</tr>
</tbody>
</table>

(continued)
ADJUVANT TREATMENT

**ADULT MEDULLOBLASTOMA AND SUPRATENTORIAL PRIMITIVE NEUROECTODERMAL TUMOR (PNET)**

**CENTRAL NERVOUS SYSTEM CANCERS CHEMOTHERAPY REGIMENS**

**PRIMARY CNS LYMPHOMA**

**PRIMARY TREATMENT**

High-dose MTX = 3.5g/m² in combination with Cytarabine (Cytosar-U; ARA-C).

**DOSE**

**Day 1:** Methotrexate 3.5g/m² IV, then

**Days 2 and 3:** Cytarabine 2g/m² IV twice daily

Repeat cycle every 3 weeks for 4 cycles and follow with whole-brain irradiation.

**RECURRENCE OR PROGRESSIVE DISEASE**

**High-dose MTX**

Retreat (see regimen above)

**Temozolomide or topotecan (Hyacinth)**

Consider high-dose chemotherapy with autologous stem cell reinfusion in patients who achieve a complete response with conventional doses of salvage chemotherapy or have no residual disease after re-resection.

**Rituximab (Rituxan) + temozolomide**

**Induction therapy**

**Day 1:** Rituximab 375mg/m² IV, plus

**Days 1–5:** Temozolomide 150–200mg/m² orally daily, administered after rituximab infusion

Repeat cycle every 28 days for 4 cycles

**Maintenance therapy**

**Day 1–5:** Temozolomide 150–200mg/m² orally daily, administered after rituximab infusion

Repeat cycle every 28 days for 8 cycles

**REFERENCE**


**ADULT MEDULLOBLASTOMA AND SUPRATENTORIAL PRIMITIVE NEUROECTODERMAL TUMOR (PNET)**

**ADJUVANT TREATMENT**

**Vincristine (Oncovin; VCR) + cisplatin + lomustine (CeeNU; CCNU)**

During craniospinal radiotherapy (RT)

**Day 1:** Lomustine 75mg/m² orally

**Day 2:** Cisplatin 75mg/m² IV

**Days 2, 8, 15:** Vincristine 1.5mg/m² IV bolus, max 2mg bolus; up to max 8 doses

*Data supporting the use of VCR have been found in pediatric trials only. Omission of VCR during RT or dose modification may be required for adults because they do not tolerate this regimen as well as children.*

**Vincristine + cisplatin + cyclophosphamide**

**Data supporting the use of VCR have been found in pediatric trials only. Omission of VCR during RT or dose modification may be required for adults because they do not tolerate this regimen as well as children.*

**RECURRENCE/SALVAGE TREATMENT (NO PRIOR CHEMOTHERAPY)**

**High-dose cyclophosphamide ± etoposide**

Consider high-dose chemotherapy with autologous stem cell reinfusion in patients who achieve a complete response with conventional doses of salvage chemotherapy or have no residual disease after re-resection.

**Carboplatin + VP-16 + cyclophosphamide**

**Cisplatin + etoposide + cyclophosphamide**

**RECURRENCE/SALVAGE TREATMENT (PRIOR CHEMOTHERAPY)**

**Temozolomide**

Days 1–5: Temozolomide 180mg/m²/day (patients with prior craniospinal irradiation [CSI]) or 200mg/m²/day (patients with no prior CSI)

Repeat every cycle every 28 days for up to 11 cycles

**Temozolomide + 13-cis retinoic acid (Accutane; isotretinoin; cRA)**

Days 1–5: Temozolomide 150mg/m²/day (patients with prior chemotherapy) or 200mg/m²/day (patients with no prior chemotherapy) orally, plus

**Days 1–21:** 13-cis retinoic acid 100mg/m²/day every 12 hours orally

**REFERENCES**


