BCCA Protocol Summary for Ifosfamide, Mesna and Etoposide in the Treatment of Recurrent Brain Tumours

Protocol Code: CNIME

Tumour Group: Neuro-Oncology

Contact Physician: Dr. Brian Thiessen

ELIGIBILITY:
- chemoresponsive central nervous system tumour (primary or secondary) progressing after initial treatment or with intolerance to more primary aggressive therapy
- Karnofsky performance score greater than 60

TESTS:
- Baseline and before each treatment: CBC and diff, BUN, lytes, creatinine, calcium, bilirubin, alkaline phosphatase, SGOT, LDH, total protein, albumin, blood glucose, urinalysis
- For patients with measurable disease, CT or MR imaging to be done every SECOND or THIRD treatment to monitor response.

TREATMENT:

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>BCCA Administration Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>etoposide</td>
<td>100 mg/m² on Day 1, Day 2</td>
<td>IV in 500 mL NS over 1 hour (use non-DEHP equipment with in-line filter)</td>
</tr>
<tr>
<td>mesna</td>
<td>600 mg/m² on Day 1</td>
<td>IV in 100 mL D5W over 15 minutes, then followed by continuous infusion (see below)</td>
</tr>
<tr>
<td>ifosfamide</td>
<td>5000 mg/m² on Day 1</td>
<td>IV in 3 L D5/NS over 24 hours*</td>
</tr>
<tr>
<td>plus mesna</td>
<td>2500 mg/m² on Day 1</td>
<td></td>
</tr>
<tr>
<td>furosemide</td>
<td>20 mg at 12h and 24h after starting Ifosfamide</td>
<td>IV</td>
</tr>
</tbody>
</table>

*(total dose should be divided equally – each litre to run over 8 hours)

- Repeat every 21 days x 6 cycles. May continue after 6 cycles on an individual basis.
- Discontinue after 6 cycles if progression greater than 25% increase in measurable disease or progressive neurological dysfunction.
DOSE MODIFICATIONS:

1. **Hematological:** for ifosfamide and etoposide only

<table>
<thead>
<tr>
<th>ANC (x10^9/L)</th>
<th>Platelets (x10^9/L)</th>
<th>Dose (ifosfamide and etoposide)</th>
</tr>
</thead>
<tbody>
<tr>
<td>greater than or equal to 1.5 and greater than or equal to 100</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>1.0-1.5 or 70-100</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td>less than 1.0 or less than 70</td>
<td>Delay for 1 week</td>
<td></td>
</tr>
</tbody>
</table>

2. **Renal dysfunction:** If serum creatinine increases greater than 100% or greater than twice institutional normal on treatment day, estimate creatinine clearance using the formula:

\[
\text{Creatinine clearance} = \frac{N^* \times (140 - \text{Age}) \times \text{Weight}}{\text{Serum creatinine} \times (\text{kg})}
\]

*For males N= 1.23; For females N=1.04

- Delay further therapy with CNIME until serum creatinine returns to normal.

3. **Vomiting:** More than 10 episodes despite antiemetics and/or requiring parenteral fluid support, give 80% ALL DRUGS

4. **Neutropenic fever:** with ANC less than 0.5 x 10^9/L, give 80% ALL DRUGS

5. **Hematuria:** See SCMESNA

PRECAUTIONS:

1. **Neutropenia:** Fever or other evidence of infection must be assessed promptly and treated aggressively.

2. **Hypersensitivity:** Reactions are common with etoposide. Refer to BCCA Hypersensitivity Guidelines.

3. [deleted]

4. **CNS toxicity:** If drowsiness develops while receiving ifosfamide, discontinue all sedating medications and continue ifosfamide. If patient is confused, unarousable or comatose, discontinue ifosfamide. If ifosfamide is the cause of CNS depression, then it should not be given again. If the CNS changes are not due to ifosfamide, then ifosfamide can be reinstituted providing the previous medications contributing to CNS toxicity are not given again with it. If a seizure occurs on ifosfamide, then that cycle is to be discontinued. Further cycles may be given if the patient is on anticonvulsants.
Call Dr. Brian Thiessen or tumour group delegate at (604) 877-6000 or 1-800-663-3333 with any problems or questions regarding this treatment program.

Date activated: 01 Nov 1999
Date revised: 1 Aug 2014 (non-PVC changed to non-DEHP, in-line filter added)

References: