**Cytarabine (high dose) +/- Rituximab**

**INDICATION**

Relapsed mantle cell lymphoma.

**TREATMENT INTENT**

Palliative.

**PRE-ASSESSMENT**

1. Ensure histology is confirmed prior to administration of chemotherapy and document in notes.
2. Record stage of disease - CT scan (neck, chest, abdomen and pelvis), presence or absence of B symptoms, clinical extent of disease, bone marrow aspirate and trephine.
3. Blood tests - FBC, DAT, U&Es, LDH, ESR, urate, calcium, magnesium, creatinine, LFTs, glucose, hepatitis B core antibody and hepatitis BsAg, hepatitis C antibody.
4. Urine pregnancy test - before cycle 1 of each new chemotherapy course in women aged 12 – 55 years of age unless they have been sterilised or undergone a hysterectomy.
5. ECG +/- Echo - if clinically indicated.
6. Record performance status
7. Record height and weight.
8. Consent - ensure patient has received adequate verbal and written information regarding their disease, treatment and potential side effects. Document in medical notes all information that has been given. Obtain written consent on the day of treatment.
9. Fertility - it is very important the patient understands the potential risk of infertility. All patients should be offered fertility advice (see fertility guidelines).
10. Hydration - in patients with bulky disease pre-hydrate with sodium chloride 0.9% 1 litre over 4-6 hours. For patients at high risk of tumour lysis, refer to the tumour lysis protocol.
11. Consider dental assessment / Advise dental check is carried out by patient's own dental practitioner before treatment starts.
12. Treatment should be agreed in the relevant MDT.

**DRUG REGIMEN**
Day 1  **RITUXIMAB (FROM CYCLE 2)** 375 mg/m² iv infusion in 500 ml sodium chloride 0.9%.
(Refer to rituximab protocol for titration of infusion rate. If first dose well tolerated, consider rapid infusion rituximab for dose 2 onwards).

Days 1-2  **CYTARABINE** 3 g/m² (NB: Consider reducing to 2 g/m² in the elderly or co-morbid) infusion bd in 500 ml sodium chloride 0.9% over 2 hours, i.e. 4 doses in total.

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**CYCLE FREQUENCY**

Cycle repeats every three weeks, support with G-CSF when necessary.

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**RESTAGING**

Give 2 courses and restage with CT. If progressive disease, consider other treatment. If partial remission, continue and restage after 4 cycles. If good partial or complete remission, consider 2 further courses. Discuss at MDT meeting.

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**DOSE MODIFICATIONS**

If patient is on clinical trial, modify as per trial protocol.

The course should normally only be given if platelets > 100 x 10⁹/L and neutrophils > 1 x 10⁹/L.

<table>
<thead>
<tr>
<th>Renal impairment</th>
<th>Hepatic impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFR (ml/min)</td>
<td>Dose</td>
</tr>
<tr>
<td>46-60</td>
<td>60%</td>
</tr>
<tr>
<td>31-45</td>
<td>50%</td>
</tr>
<tr>
<td>&lt;30</td>
<td>Omit</td>
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</tbody>
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**INVESTIGATIONS**

FBC, renal and liver profiles.

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**CONCURRENT MEDICATION**

L.54  Cytarabine (high dose) +/- Rituximab  Authorised by Lymphoma lead Dr Graham Collins  Published: June 2014
Review: 2016,  Review: May 2018
Version 1.2
**Drug** | **Dose and duration**  
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Allopurinol | 300 mg daily for 7 days starting 24-48 hours prior to chemotherapy (first course / cycle only)  
Ranitidine (or PPI if specifically indicated - discuss with consultant) | Daily for the duration of steroid treatment in regimen  
Aciclovir | 200 mg three times a day for duration of treatment and for 3 months after completion  
Predsol eye drops 0.5% or 1% | One drop to each eye QDS. Continue for 5 days after cytarabine (due to risk of cytarabine-induced conjunctivitis). In the event of conjunctivitis, consider increasing the frequency to 2 hourly until resolution of symptoms. Liaison with ophthalmologists may be necessary in this situation.  

Consider GCSF as per local protocol  

**EMETIC RISK**  
Moderate.  

**ADVERSE EFFECTS / REGIMEN SPECIFIC COMPLICATIONS**  
Nausea, diarrhoea, oral ulceration, hepatic dysfunction. A cytarabine syndrome is recognised in which patients suffer from: fever, myalgia, bone pain, occasional chest pains, maculopapular rash, conjunctivitis and malaise. It usually occurs 6 to 12 hours following administration. Cerebellar toxicity is also a recognised, albeit rare, side effect of high dose cytarabine.  

**TREATMENT RELATED MORTALITY**  
Expected to be 1-2%.  

**REFERENCES**  