Pentostatin (Hairy cell leukaemia)

INDICATION
Hairy cell leukaemia (including variant).
May also be used in combination with rituximab for hairy cell leukaemia
T-PLL in patients who are refractory to alemtuzumab.

TREATMENT INTENT
Disease modification.

PRE-ASSESSMENT
1. Ensure histology/flow cytometry 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, ESR, U&Es, LDH, urate, calcium, magnesium, creatinine, LFTs, glucose, lgs, hepatitis B core antibody and hepatitis B surface Ag, hepatitis C antibody, EBV, CMV, VZV, HIV 1+2 after consent.
4. Send a "group and save" sample to transfusion and inform patient and transfusion laboratory that they will require irradiated blood products for all future transfusions. Ensure irradiation card is attached to the patient's notes and copy given to the patient. See 'Guidelines for the use of blood components in adult haematology'.
5. Urine pregnancy test - before cycle 1 of each new chemotherapy course for women of child-bearing age unless they are post-menopausal, have been sterilised or undergone a hysterectomy.
6. ECG +/- Echo - if clinically indicated.
7. Record performance status (WHO/ECOG).
8. Record height and weight.
9. 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 prior to treatment.
10. Fertility - it is very important the patient understands the potential risk of reduced fertility. All patients should be offered fertility advice by referring to the Oxford Fertility Unit.
11. Hydration - in patients with bulky disease or high WBC counts pre-hydrate with sodium chloride 0.9% 1 litre over 4-6 hours. For patients at high risk of tumour lysis, refer to tumour lysis protocol.
12. Consider dental assessment / Advise dental check is carried out by patient's own dental practitioner before treatment starts.
13. Treatment should be agreed in the relevant MDT.

DRUG REGIMEN
Lymphoma group

Day 1  Pre-hydration
500mL IV Sodium Chloride 0.9% over 1 hour

**PENTOSTATIN** 4mg/m² IV as a slow bolus

Post-hydration
500mL IV Sodium Chloride 0.9% over 1 hour

For relapsed/ refractory hairy cell leukaemia add Rituximab,

Day 1  Premedication
Paracetamol 1g PO, Chlorphenamine 10 mg IV, Hydrocortisone 100 mg IV. Give 30 minutes before rituximab. **RITUXIMAB** 375 mg/m² IV infusion in 500 mL sodium chloride 0.9% for 6-8 doses (Refer to rituximab care plan for titration of infusion rate. If first dose well tolerated, consider rapid infusion rituximab for dose 2 onwards).

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**CYCLE FREQUENCY**

Every 14 days until a **maximum** response (e.g. normalisation of blood counts) has been achieved then for a further 2 doses - 10 doses normally required. If partial response (based on blood counts) not achieved after 4 doses, pentostatin should be discontinued.

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**RE-STAGING**

Repeat bone marrow biopsy 6 months after treatment finished.

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**DOSE MODIFICATIONS**

**Haematological modifications**
No pre-treatment dose reductions or delays should be made for anaemia. Toxicity: neutropenia or thrombocytopenia. Further doses should only be delayed if neutrophils <0.2 x 10⁹/L in a patient whose initial neutrophil count was >0.5 x 10⁹/L, and may be resumed when the neutrophil count has returned to pre-dose levels.

<table>
<thead>
<tr>
<th>Renal impairment</th>
<th>Dose</th>
<th>Hepatic impairment</th>
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<tbody>
<tr>
<td>CrCl (mL/min)</td>
<td></td>
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<tr>
<td>&gt;59</td>
<td>100%</td>
<td>No formal dose adjustment required. However, caution is advised.</td>
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<tr>
<td>40-59</td>
<td>75%</td>
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<tr>
<td>35-39</td>
<td>50%</td>
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<tr>
<td>&lt;35</td>
<td>not recommended</td>
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This is a controlled document and therefore must not be changed or photocopied
INVESTIGATIONS
FBC, renal and liver profiles before each course.

CONCURRENT MEDICATION

<table>
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<th>Medication</th>
<th>Dosage/Instructions</th>
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<tr>
<td>Allopurinol</td>
<td>300mg daily - review at 7 days.</td>
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<tr>
<td>Aciclovir</td>
<td>200mg TDS during treatment and for 3 months after completion.</td>
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<tr>
<td>Co-trimoxazole</td>
<td>480 mg daily Mondays, Wednesdays and Fridays and continue for 3 months after treatment. Consider reducing to 480 mg twice weekly during neutropenic periods.</td>
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<tr>
<td>Fluconazole</td>
<td>50mg daily.</td>
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EMETIC RISK
Minimal.

EXTRAVASATION RISK
Pentostatin: neutral

ADVERSE EFFECTS
Skin changes (dry, itchy, acne), lethargy, anorexia, liver/renal/lung damage, hair loss, fever, nausea and vomiting, headache.

TREATMENT RELATED MORTALITY
3-5% (depends on indication)

REFERENCES

5. The Lancet Oncology. Dose recommendations for anticancer drugs in patients with renal or hepatic impairment. Lancet Oncol 2019; 20:e201-08

<table>
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<tr>
<th>Name</th>
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