PENTOSTATIN

Hairy cell leukaemia
(Pentostatin may be used in combination with rituximab for relapsed or refractory hairy cell leukaemia, for patients who have already received cladribine or pentostatin)

T-PLL in patients who are refractory to alemtuzumab

Drug/Dosage: **Pentostatin** 4mg/m^2 IV Day 1

Administration: 500ml glucose 5% **or** sodium chloride 0.9% IV over 1 hour
then
Pentostatin given as a slow bolus
followed by
500ml glucose 5% **or** sodium chloride 0.9% IV over 1 hour

Patient must also be encouraged to drink plenty of fluid (2 litres if possible) on the day of treatment.

Other drugs: Allopurinol 300mg po daily - review at 4 weeks
PCP prophylaxis - prescribe according to unit practice/protocol (generally until 6 months after completion of treatment, or according to CD_4 counts)
Consider aciclovir prophylaxis (400mg bd), especially if history of VZV or HSV reactivation
+/-
For relapsed HCL:
Rituximab 375mg/m^2 IV every 2 weeks x 6 - 8 doses
(for details on rituximab administration, follow the Rituximab for follicular lymphoma protocol)

Frequency: HCL: Every 2 weeks until a complete response has been achieved (see Comments), then for a further 1 or 2 doses - usually at least 10 doses required.
If partial response not achieved after 4 doses, pentostatin should be discontinued.

T-PLL: Every week for 4 weeks, then every 2 weeks to maximum response

Main Toxicities: myelosuppression (mild, and counts usually improve after the first month of treatment);
fever; rash (stop pentostatin if severe);
suppression of CD_4+ lymphocytes, associated with herpes infections;
ovarian failure; infertility; teratogenicity possible

Anti-emetics: mildly emetogenic

Extravasation: non-vesicant

Regular Investigations:		
	FBC	Day 1
	U&Es	Day 1 (serum Cr must be checked before each dose given)
	LFTs	baseline, then monthly
	Marrow aspirate	after 8 - 9 cycles, or when FBC normalised

Comments: All patients must receive irradiated blood products for all future transfusions - inform patient and blood bank.

Reason for Update: addition of T-PLL indication; info on use with rituximab	Approved by Chair of Network TSSG: Dr A Laurie
Version: 4	Date: 6.6.14
Supersedes: Version 3	Review Date: July 2016
Prepared by: S Taylor	Checked by: C Tucker

If there is any sign that the patient has an infection, an effort should be made to control the infection before giving pentostatin. Pentostatin should only be administered in the presence of an infection after discussion with Consultant.

Complete response in HCL is defined as the absence of hairy cells from the peripheral blood and bone marrow along with resolution of organomegaly and cytopenias.
In CR, immunohistochemistry reveals no clustering (≥3 cells) of CD20-positive or DBA.44-positive cells.

Dose Modifications

Haematological Toxicity:

No dose reduction or delay is recommended at the start of therapy for patients with anaemia, neutropenia or thrombocytopenia.
Dose reductions are not recommended during therapy for anaemia or thrombocytopenia.
Doses should only be delayed if neutrophils < 0.2 x 10^9/l in a patient whose initial neutrophil count was > 0.5 x 10^9/l, and may be resumed when the neutrophil count has returned to pre-dose levels.

Renal Impairment:

Cockcroft and Gault formula should be used to predict renal function.
If predicted CrCl < 60ml/min, GFR should be measured using Cr^{51}-EDTA or 24hr urine collection.
There are limited data[1] to show that pentostatin can be given to patients with impaired renal function, according to the following table:

Creatinine Clearance (ml/min)	Pentostatin Dose
> 59	Give 4mg/m^2
40 – 59	Give 3mg/m^2
35 - 39	Give 2mg/m^2
< 35	Not recommended

For renally impaired patients, this dosing schedule may only be considered after discussion with the responsible Consultant.

Hepatic Impairment:

Limited experience – no formal recommendations, but pentostatin is a renally cleared drug.

Patient Information:

Macmillan leaflet for Pentostatin

References:

Flinn, IW et al; Blood (2000); 96: 2981 - 2986
Catovsky, D et al; Leuk Lymphoma (1994); 14 (Suppl 1): 109 – 113
[1]Lathia, C et al; Cancer Chemother Pharmacol (2002); 50: 121 – 126
Else, M et al; Leukaemia & Lymphoma 2011; 52 (Suppl 2): 75 – 78 (R-pentostatin)
Mercieca, J et al; JCO 1994; 12 (12): 2588 – 2593 (T-PLL)