Chemotherapy Protocol

MYELOMA

Carfilzomib -Lenalidomide -Dexamethasone

Regimen

- Myeloma – Carfilzomib-Lenalidomide-Dexamethasone

Indication

- Carfilzomib in combination with lenalidomide and dexamethasone is an option for treating multiple myeloma in adults if the patient has had one previous therapy which included bortezomib.
- Treatment intent – disease modification
- WHO performance status 0, 1, 2

Toxicity

Drug	Adverse Effect
Carfilzomib	Anaemia, fatigue, diarrhoea, thrombocytopenia, cardiac toxicity, nausea, pyrexia, dyspnoea, respiratory tract infection, cough and peripheral oedema, confusional states, herpes zoster infection
Lenalidomide	Peripheral neuropathy, pneumonia, infections, venous thrombotic events, respiratory dysfunction, rashes, hypokalaemia, hypomagnesaemia, hypocalcaemia, teratogenic risk, GI disturbances, flu-like symptoms, potential for secondary malignancies
Dexamethasone	Weight gain, gastrointestinal disturbances, hyperglycaemia, CNS disturbances, cushingoid changes, glucose intolerance.

The adverse effects listed are not exhaustive. Please refer to the relevant Summary of Product Characteristics for full details.

Monitoring

- FBC, LFT and U&Es prior to day 1 of treatment
- Regular monitoring of blood glucose is considered good practice.
- Perform a venous thromboembolism (VTE) risk assessment prior to starting treatment. Prescribe thromboprophylaxis for patients with additional risk factors.
- Consider monitoring serum immunoglobulin levels

Dose Modifications

The dose modifications listed are for haematological, liver and renal function and drug specific toxicities only. Dose adjustments may be necessary for other toxicities as well.

In principle all dose reductions due to adverse drug reactions should not be re-escalated in subsequent cycles without consultant approval. It is also a general rule for chemotherapy that if a third dose reduction is necessary treatment should be stopped.

Please discuss all dose reductions / delays with the relevant consultant before prescribing, if appropriate. The approach may be different depending on the clinical circumstances.

Haematological

Dose modifications for haematological toxicity in the table below are for general guidance only. Always refer to the responsible consultant as any dose reductions or delays will be dependent on clinical circumstances and treatment intent. Low counts can be a consequence of bone marrow infiltration as well as drug toxicity. Consider blood transfusion if patient symptomatic of anaemia or has a haemoglobin of less than 8g/dL (80g/L).

Prior to starting a new cycle of treatment;

- neutrophils should be greater than or equal to $1x10^9$/L
- platelets should be greater than or equal to $75x10^9$/L
- non-haematological toxicity should resolve to NCI-CTC grade 1 or below or baseline

Haematological dose modifications – Carfilzomib This table refers to toxicity during a cycle of treatment (nadir / mid cycle)	
Neutrophils	**Dose**
Greater than or equal to $0.5x10^9$/L	100%
Less than $0.5x10^9$/L	• Withhold dose until neutrophils recover to $0.5x10^9$/L or above • 1st occurrence: After neutrophil recovery restart at current dose level • 2nd occurrence: After neutrophil recovery restart and consider 1 dose level reduction (see table below)
Platelets	**Dose**
Greater than $10x10^9$/L	100%
Less than $10x10^9$/L	• Withhold dose until the platelets are $10x10^9$/L or above • 1st occurrence: After platelet recovery and / or bleeding controlled, continue at current dose level • 2nd occurrence: After platelet recovery and / or bleeding controlled, restart carfilzomib and consider 1 dose level reduction (see table below)

Lenalidomide

Neutrophils ($x10^9$/L)	Dose Modifications
1 or more	100%
Less than 1	1st Occurrence – consider growth factor support Delay until recovery has occurred. Restart at full dose. 2nd Occurrence Delay until recovery has occurred. Restart at a dose of 15mg 3rd Occurrence Delay until recovery has occurred. Restart at a dose of 10mg 3rd Occurrence Delay until recovery has occurred. Restart at a dose of 5mg
Platelets ($x10^9$/L)	**Dose Modifications**
50 or more	100%
Less than 50	1st Occurrence Delay until recovery has occurred. Restart at a dose of 15mg 2nd Occurrence Delay until recovery has occurred. Restart at a dose of 10mg 3rd Occurrence Delay until recovery has occurred. Restart at a dose of 5mg

As an alternative to dose adjustments or delaying starting a cycle please consider whether increasing the cycle length to a 5 week cycle may be appropriate

Hepatic impairment

Drug	Dose
Carfilzomib	No information available
Lenalidomide	No dose adjustments needed

Renal Impairment

Renal dose modifications - Carfilzomib	
Renal function	**Dose (% of original dose)**
Creatinine greater than or equal to 2x baseline, and / or	• Withhold dose • Restart carfilzomib when renal function has recovered to within 25% of baseline (consider 1 dose level reduction) – see table below.
CrCl less than 15ml/min, and / or	
CrCl decreased to less than or equal to 50% of baseline	

Other

Other non-haematological toxicity	Recommended action
Grade 3 or 4 toxicity	• Stop until toxicity resolved / returned to baseline • Consider restarting at 1 dose level reduction

Drug	Creatinine Clearance (ml/min)	Dose (% of original dose)
Lenalidomide	Greater than 50	100%
	30-50	Start treatment with 10mg once a day Lenalidomide dose can be increased to 15mg after 2 cycles if patient shows no response.
	Less than 30	Start treatment with 15mg on alternate days
	Less than 30 and requiring dialysis	5 mg once a day. On dialysis days, the dose should be administered following dialysis.

Carfilzomib dose level reductions:*	Normal dose	1st reduction	2nd reduction
	27mg/m^2	20mg/m^2	15mg/m^2

Lenalidomide dose level reductions:*	Normal dose	1st reduction	2nd reduction	3rd reduction
	25mg	15mg	10mg	5mg

Note: carfilzomib dose and dose reductions differ depending on regimen used.

Dose reductions or interruptions in therapy are not necessary for those toxicities that are considered unlikely to be serious or life threatening. For example, alopecia, altered taste or nail changes.

For all other non-haematological NCI-CTC toxicities refer to manufacturer information.

Carfilzomib

Infusion reactions

Infusion reactions, including life-threatening reactions, have been reported in patients who received carfilzomib. Symptoms may include fever, chills, arthralgia, myalgia, facial flushing, facial oedema, vomiting, weakness, shortness of breath, hypotension, syncope, chest tightness, or angina. These reactions can occur immediately following or up to 24 hours after

administration of carfilzomib. Dexamethasone should be administered prior to carfilzomib to reduce the incidence and severity of reactions.

Monitor for signs and symptoms of an infusion-related reaction. Interrupt or slow the rate of infusion in patients with mild or moderate infusion reactions and consider pre-medications prior to subsequent doses.

Patients should be observed for one hour post carfilzomib infusion

Dexamethasone

Dose Level	Dose
2 (starting)	40mg
1	20mg

If recovery from toxicities is prolonged beyond 14 days, then the dose of dexamethasone will be decreased by one dose level.

Toxicity	Grade (NCI-CTC)	Dose modification
Dyspepsia	1 - 2	Maintain dose and treat with histamine (H_2) antagonist or proton pump inhibitor. Decrease by one dose level if symptoms persist.
	3 or above	Interrupt dose until symptoms are controlled. Add H_2 blocker or proton pump inhibitor and decrease one dose level when dose restarted.
Oedema	3 or above	Use diuretics as needed and decrease dose by one dose level.
Confusion or mood alteration	2 or above	Interrupt dose until symptoms resolve. When dose restarted decrease dose by one dose level.
Muscle weakness	2 or above	Interrupt dose until the muscle weakness is grade 1 or below. Restart with dose decreased by one level.
Hyperglycaemia	3 or above	Decrease dose by one dose level. Treat with insulin or oral hypoglycaemic agents as needed
Acute pancreatitis		Discontinue patient from dexamethasone treatment regimen.
Other	3 or above	Stop dexamethasone dosing until adverse event resolves to grade 2 or below. Resume with dose reduced by one level.

Other

Dose reductions or interruptions in therapy are not necessary for those toxicities that are considered unlikely to be serious or life threatening. For example, alopecia, altered taste or nail changes. In general for all other non-haematological NCI-CTC grade 3 and above toxicities delay treatment until the adverse effect has resolved to NCI-CTC grade 1 or below. Reduce the daily dose to 15mg. On subsequent occurrences delay until recovery the dose

may then be reduced to 10mg and 5mg consecutively. If a dose of 5mg is not tolerated treatment should be stopped. Allergic or hypersensitivity reactions that occur at NCI-CTC grade 2, withhold treatment until the symptoms have resolved to NCI-CTC grade 1 or below. Treatment may be cautiously restarted at a daily dose of 15mg. For NCI-CTC grade 3 or above reactions discontinue the lenalidomide. Lenalidomide should be discontinued if a desquamating rash of NCI-CTC grade 3 or above or NCI-CTC grade 4 non-desquamating rash develops. There is an increased risk of thrombosis and some form of prophylaxis is recommended. A low molecular weight heparin or warfarin should be prescribed initially. If patients are treated with either a low molecular weight heparin or warfarin consider switching patients to aspirin after six cycles of therapy or after maximum response is achieved. A high index of suspicion for venous thromboembolism should be maintained. If a venous thrombosis or embolism NCI-CTC grade 3 or above then stop treatment and start anticoagulation. Lenalidomide may be reinstated at the clinician's discretion, if the patient is fully anti-coagulated.

Regimen

Warning, the day one dexamethasone is incorporated into the regimen as a dose to be administered prior to the carfilzomib by the nursing staff. If the day one carfilzomib is suspended for any reason the schedule of the dexamethasone may need to be adjusted and the administration instructions amended.

Patients should be observed for one hour post carfilzomib infusion

28 day cycle until disease progression or intolerance occurs (18 cycles will be set up on ARIA and cycle 19 onwards will be as a separate regimen) Please note that carfilzomib infusions stop after 18 cycles and lenalidomide-dexamethasone maintenance continues

Cycle	Drug	Dose	Days	Administration
1	Carfilzomib	20mg/m^2 (max 44mg)	1 and 2	IV infusion in 100ml glucose 5% over 10 minutes
	Carfilzomib	27mg/m^2 (max 60mg)	8,9 and 15,16	IV infusion in 100ml glucose 5% over 10 minutes
	Lenalidomide	25mg	1-21	Oral
	Dexamethasone	20mg	1,2,8,9,15,16 and 22,23	Oral
2 - 12	Carfilzomib	27mg/m^2 (max 60mg)	1,2,8,9,15,16	IV infusion in 100ml glucose 5% over 10 minutes
	Lenalidomide	25mg	1-21	Oral
	Dexamethasone	20mg	1,2,8,9,15,16 and 22,23	Oral
13 - 18	Carfilzomib	27mg/m^2 (max 60mg)	1,2,15,16	IV infusion in 100ml

				glucose 5% over 10 minutes
	Lenalidomide	25mg	1-21	Oral
	Dexamethasone	20mg	1,2,8,9,15,16 and 22,23	Oral

Cycle 19 onwards

19 onwards	Lenalidomide	25mg	1-21	Oral
	Dexamethasone	40mg	1,8,15 and 22	Oral

Cycle 19 onwards will be available for prescribing as a separate regimen.

Dose Information

- Carfilzomib will be dose banded in accordance with the nationally agreed dose bands (2mg/ml)
- Carfilzomib will be dose capped at 2.2m^2
- Dexamethasone is available as 500microgram, 2mg and 4mg tablets and as a 2mg/5ml oral liquid.
- Lenalidomide is available as 25mg, 15mg, 10mg, 7.5mg, 5mg and 2.5mg capsules

Administration Information

- Dexamethasone should be taken in the morning, with or after food
- Lenalidomide should be swallowed whole, preferably with water, either with or without food at about the same time each day. The capsules should not be opened, broken or chewed. If less than 12 hours has elapsed since missing a dose, the patient can take the dose. If more than 12 hours has elapsed since missing a dose at the normal time, the patient should not take the dose, but take the next dose at the normal time on the following day

Extravasation

- Carfilzomib - neutral

Additional Therapy

- No antiemetics are required.
- Carfilzomib pre-hydration with sodium chloride 0.9% 500ml over 30minutes to be added if necessary form cycle 2 onwards
- Carfilzomib post hydration with sodium chloride 0.9% 500ml over 30 minutes to be added if necessary form cycle 2 onwards

- For the treatment of carfilzomib related Infusion reactions

    - chlorphenamine 10mg intravenous injection once only when required for infusion related reactions
    - hydrocortisone 100mg intravenous when required for infusion related reactions
    - salbutamol 2.5mg nebule when required for related bronchospasm
    - paracetamol 1000mg oral once only when required for infusion related reactions

- Consider allopurinol 300mg oral once a day for seven days for the first cycle only

- Antiemetics
    - Metoclopramide 10mg three times a day when required oral

- Consider anti-infective prophylaxis including;
  - aciclovir 400mg twice a day oral
  - co-trimoxazole 960mg once a day oral on Monday, Wednesday and Friday only
  - fluconazole 50mg once a day oral

- Bisphosphonates in accordance with local policies.

- Mouthwashes according to local or national policy on the treatment of mucositis.

- Gastric protection with a proton pump inhibitor or a H_2 antagonist may be considered in patients considered at high risk of GI ulceration or bleed.

- Thromboprophylaxis a low molecular weight heparin according to local formulary choice. Aspirin may be considered after six cycles or when maximal response is achieved.

Coding

- Procurement – X71.3

- Delivery – X72.2

References

1. Stewart K etal Carfilzomib, lenalidomide, and dexamethasone for relapsed multiple myeloma. N Engl J Med. 2015 Jan 8;372(2):142-52. doi: 10.1056/NEJMoa1411321. Epub 2014 Dec 6
2. Electronic medicines compendium - Krypolis summary of product characteristics. Last updated April 2018. Available from: https://www.medicines.org.uk/emc/product/5061#POSOLOGY
3. Kyprolis prescribing information. FDA. Last revised 7/2015 http://www.accessdata.fda.gov/drugsatfda_docs/label/2015/202714s009lbl.pdf
4. eMC UK Summary of Product Characteristics for Revlimid 25mg, Celgene, May 2017

REGIMEN SUMMARY

Carfilzomib-Lenalidomide-Dexamethasone (40)

Cycle 1 Day 1 and 2

1. Dexamethasone 20mg oral 30 minutes prior to the carfilzomib
   Administration Instructions
   Administer at least 30 minutes and up to four hours prior to the start of the carfilzomib infusion

2. Sodium chloride 0.9% 500ml intravenous infusion over 30 minutes

3. Carfilzomib 20mg/m^2 (maximum 44mg) intravenous infusion in 100ml glucose 5% over 10 minutes

4. Sodium chloride 0.9% 500ml intravenous infusion over 30 minutes

5. Chlorphenamine 10mg intravenous injection once only when required for infusion related reactions.

6. Hydrocortisone 100mg intravenous injection once only when required for infusion related reactions

7. Salbutamol 2.5mg nebule once only when required for infusion related bronchospasm

8. Paracetamol 1000mg oral once only when required for infusion related reactions
   Administration Instructions
   Please check if the patient has taken paracetamol. Maximum dose is 4g per 24 hours. There should be 4 hours between doses

Cycle 1 Day 8,9,15,16

9. Dexamethasone 20mg oral 30 minutes prior to the carfilzomib
   Administration Instructions
   Administer at least 30 minutes and up to four hours prior to the start of the carfilzomib infusion

10. Sodium chloride 0.9% 500ml intravenous infusion over 30 minutes

11. Carfilzomib 27mg/m^2 (maximum 60mg) intravenous infusion in 100ml glucose 5% over 10 minutes

12. Sodium chloride 0.9% 500ml intravenous infusion over 30 minutes

13. Chlorphenamine 10mg intravenous injection once only when required for infusion related reactions.

14. Hydrocortisone 100mg intravenous injection once only when required for infusion related reactions

15. Salbutamol 2.5mg nebule once only when required for infusion related bronchospasm

16. Paracetamol 1000mg oral once only when required for infusion related reactions
    Administration Instructions
    Please check if the patient has taken paracetamol. Maximum dose is 4g per 24 hours. There should be 4 hours between doses

Cycle 2-12 days 1, 2, 8, 9, 15 and 16

17. Warning – check patient has taken dexamethasone 20mg oral 30 minutes prior to the carfilzomib
    Administration Instructions
    If patient has not taken dexamethasone 20mg please administer 20mg dexamethasone oral at least 30 minutes and up to four hours prior to the start of the carfilzomib infusion

18. Carfilzomib 27mg/m^2 (maximum 60mg) intravenous infusion in 100ml glucose 5% over 10 minutes

19. Chlorphenamine 10mg intravenous injection once only when required for infusion related reactions.

20. Hydrocortisone 100mg intravenous injection once only when required for infusion related reactions

21. Salbutamol 2.5mg nebule once only when required for infusion related bronchospasm

22. Paracetamol 1000mg oral once only when required for infusion related reactions
Administration Instructions
Please check if the patient has taken paracetamol. Maximum dose is 4g per 24 hours. There should be 4 hours between doses

Cycle 13 to 18 days 1, 2, 15 and 16

23. Warning – check patient has taken dexamethasone 20mg oral 30 minutes prior to the carfilzomib
    Administration Instructions
    If patient has not taken dexamethasone 20mg please administer 20mg dexamethasone oral at least 30 minutes and up to four hours prior to the start of the carfilzomib infusion

24. Carfilzomib 27mg/m^2 (maximum 60mg) intravenous infusion in 100ml glucose 5% over 10 minutes

25. Chlorphenamine 10mg intravenous injection once only when required for infusion related reactions.

26. Hydrocortisone 100mg intravenous injection once only when required for infusion related reactions

27. Salbutamol 2.5mg nebule once only when required for infusion related bronchospasm

28. Paracetamol 1000mg oral once only when required for infusion related reactions
Administration Instructions
Please check if the patient has taken paracetamol. Maximum dose is 4g per 24 hours. There should be 4 hours between doses

Take home medicines cycle 1

29. Dexamethasone 20mg once a day on day 22, 23 and 20mg to take on day 1 of cycle 2 oral
    Administration Information
    Please supply three doses of dexamethasone on day 1 of the cycle, ONE dose to be taken on day 22 and day 23 of the cycle once a day in the morning and on day 1 of cycle 2, 30 minutes prior to carfilzomib infusion.
    Take with or after food.

30. Warning – Pregnancy Prevention Programme
    Administration Instructions Lenalidomide is associated with a pregnancy prevention programme. Please ensure this is completed for all patients.

31. Lenalidomide 25mg once a day for 21 days oral
    Administration Instructions Lenalidomide is associated with a pregnancy prevention programme. Please ensure this is completed for all patients. Oral chemotherapy. Available as 25mg, 15mg, 10mg, 7.5mg, 5mg and 2.5mg capsules, please ensure dose modifications occur in multiples of these strengths. Swallow whole, not chewed with plenty of water

32. Co-trimoxazole 960mg once a day on Monday, Wednesday and Friday for 28 days oral
    Administration Instructions
    Co-trimoxazole 960mg once a day on Mondays, Wednesdays and Fridays. Please supply 42 days. This may be dispensed as 480mg twice a day on Mondays, Wednesdays and Fridays according to local practice.

33. Aciclovir 400mg twice a day for 28 days oral
    Administration Instructions
    Please supply 28 days or an original pack if appropriate

34. Allopurinol 300mg once a day for 7 days oral
    Administration Instructions
    Take with or after food with plenty of water. Please supply 7 days.

35. Metoclopramide 10mg three times a day when required oral
    Administration Instructions When required for the relief of nausea. Please supply 28 tablets or nearest original pack size

36. Thromboprophylaxis according to local formulary choice;
    Administration Instructions
    The choice of thromboprophylaxis is dependent on local formularly choice and may include;
    - dalteparin 5000units once a day subcutaneous injection
    - enoxaparin 40mg once a day subcutaneous injection
    - heparin 5000units twice a day subcutaneous injection
    - apixaban 2.5mg TWICE a day ORAL or equivalent NOAC

    Please supply 28 days or nearest original pack size. Aspirin may be considered after cycle six of treatment.

37. Gastric Protection
    Administration Instructions
    The choice of gastric protection is dependent on local formulary choice and may include:

    - esomeprazole 20mg once a day oral
    - omeprazole 20mg once a day oral
    - lansoprazole 15mg once a day oral
    - pantoprazole 20mg once a day oral
    - rabeprazole 20mg once a day oral
    - cimetidine 400mg twice a day oral
    - famotidine 20mg once a day oral
    - nizatidine 150mg twice a day oral
    - ranitidine 150mg twice a day oral

    Please dispense 28 days or nearest original pack size.

Take home medicines cycle 2 to 18

38. Dexamethasone 20mg once a day on day 2,8,9,15,16, 22 and 23 and day 1 of next cycle oral
    Administration Information
    Please supply eight doses of dexamethasone on day 1 of the cycle, ONE dose to be taken on day 2,8,9,15,16, 22 and 23 and day 1 of next cycle once a day in the morning. On the days of carfilzomib take 30 minutes prior to infusion
    Take with or after food.

39. Warning – Pregnancy Prevention Programme
    Administration Instructions Lenalidomide is associated with a pregnancy prevention programme. Please ensure this is completed for all patients.

40. Lenalidomide 25mg once a day for 21 days oral
    Administration Instructions Lenalidomide is associated with a pregnancy prevention programme. Please ensure this is completed for all patients. Oral chemotherapy. Available as 25mg, 15mg, 10mg, 7.5mg, 5mg and 2.5mg capsules, please ensure dose modifications occur in multiples of these strengths. Swallow whole, not chewed with plenty of water

41. Co-trimoxazole 960mg once a day on Monday, Wednesday and Friday for 28 days oral

Administration Instructions
Co-trimoxazole 960mg once a day on Mondays, Wednesdays and Fridays. Please supply 42 days. This may be dispensed as 480mg twice a day on Mondays, Wednesdays and Fridays according to local practice.

42. Aciclovir 400mg twice a day for 28 days oral
Administration Instructions
Please supply 28 days or an original pack if appropriate

43. Metoclopramide 10mg three times a day when required oral
Administration Instructions When required for the relief of nausea. Please supply 28 tablets or nearest original pack size

44. Thromboprophylaxis according to local formulary choice;
Administration Instructions
The choice of thromboprophylaxis is dependent on local formularly choice and may include;
- dalteparin 5000units once a day subcutaneous injection
- enoxaparin 40mg once a day subcutaneous injection
- heparin 5000units twice a day subcutaneous injection
- apixaban 2.5mg TWICE a day ORAL or equivalent NOAC

Please supply 28 days or nearest original pack size. Aspirin may be considered after cycle six of treatment.

45. Gastric Protection
Administration Instructions
The choice of gastric protection is dependent on local formulary choice and may include:

- esomeprazole 20mg once a day oral
- omeprazole 20mg once a day oral
- lansoprazole 15mg once a day oral
- pantoprazole 20mg once a day oral
- rabeprazole 20mg once a day oral
- cimetidine 400mg twice a day oral
- famotidine 20mg once a day oral
- nizatidine 150mg twice a day oral
- ranitidine 150mg twice a day oral

Please dispense 28 days or nearest original pack size.

Cycle 19 onwards

1. Dexamethasone 40mg once a day on day 1, 8, 15 and 22 oral
Administration Information
Please supply four doses of dexamethasone on day 1 of the cycle, ONE dose to be taken on day 1, 8, 15 and 22 once a day in the morning.
Take with or after food.

2. Warning – Pregnancy Prevention Programme
Administration Instructions Lenalidomide is associated with a pregnancy prevention programme. Please ensure this is completed for all patients.

3. Lenalidomide 25mg once a day for 21 days oral
Administration Instructions Lenalidomide is associated with a pregnancy prevention programme. Please ensure this is completed for all patients. Oral chemotherapy. Available as 25mg, 15mg, 10mg, 7.5mg, 5mg and 2.5mg capsules, please ensure dose modifications occur in multiples of these strengths. Swallow whole, not chewed with plenty of water

4. Co-trimoxazole 960mg once a day on Monday, Wednesday and Friday for 28 days oral
Administration Instructions
Co-trimoxazole 960mg once a day on Mondays, Wednesdays and Fridays. Please supply 28 days. This may be dispensed as 480mg twice a day on Mondays, Wednesdays and Fridays according to local practice.

5. Aciclovir 400mg twice a day for 28 days oral
Administration Instructions
Please supply 28 days or an original pack if appropriate

6. Metoclopramide 10mg three times a day when required oral
Administration Instructions When required for the relief of nausea. Please supply 28 tablets or nearest original pack size

7. Thromboprophylaxis according to local formulary choice;

Administration Instructions
The choice of thromboprophylaxis is dependent on local formularly choice and may include;
- dalteparin 5000units once a day subcutaneous injection
- enoxaparin 40mg once a day subcutaneous injection
- heparin 5000units twice a day subcutaneous injection
- apixaban 2.5mg TWICE a day ORAL or equivalent NOAC

Please supply 28 days or nearest original pack size. Aspirin may be considered after cycle six of treatment.

8. Gastric Protection

Administration Instructions
The choice of gastric protection is dependent on local formulary choice and may include:

- esomeprazole 20mg once a day oral
- omeprazole 20mg once a day oral
- lansoprazole 15mg once a day oral
- pantoprazole 20mg once a day oral
- rabeprazole 20mg once a day oral
- cimetidine 400mg twice a day oral
- famotidine 20mg once a day oral
- nizatidine 150mg twice a day oral
- ranitidine 150mg twice a day oral

Please dispense 28 days or nearest original pack size.

DOCUMENT CONTROL

Version	Date	Amendment	Written By	Approved By
1	November 2021	None	Nanda Basker Pharmacist	Dr Mathew Jenner Consultant Haematologist

This chemotherapy protocol has been developed as part of the chemotherapy electronic prescribing project. This was and remains a collaborative project that originated from the former CSCCN. These documents have been approved on behalf of the following Trusts;

Hampshire Hospitals NHS Foundation Trust
NHS Isle of Wight
Portsmouth Hospitals NHS Trust
Salisbury Hospitals NHS Foundation Trust
University Hospital Southampton NHS Foundation Trust
Western Sussex Hospitals NHS Foundation Trust

All actions have been taken to ensure these protocols are correct. However, no responsibility can be taken for errors that occur as a result of following these guidelines. These protocols should be used in conjunction with other references such as the Summary of Product Characteristics and relevant published papers.