Chemotherapy Protocol

ACUTE MYELOID LEUKAEMIA

AmB- CYTARABINE (3000mg/m^2)

Ambulatory Regimen
This regimen is for AMBULATORY CARE pathway use only

Regimen

- Acute Myeloid Leukaemia – Amb-Cytarabine (3000mg/m^2)

Indication

- Consolidation for good risk acute myeloid leukaemia following induction chemotherapy.
- Relapsed disease post transplant.
- The standard dose is 3000mg/m^2. The dose may be decreased to 1500mg/m^2 in those who are over the age of 60 years and older, or patients who have relapsed post-transplant where the 3000mg/m^2 dose may not be tolerated.

Toxicity

Drug	Adverse Effect
Cytarabine	Nausea, vomiting, diarrhoea, fever, rash, itching, anorexia, oral and anal inflammation or ulceration, hepatic dysfunction, ocular pain, foreign body sensation, photophobia and blurred vision, dizziness, headache, confusion, cerebellar toxicity, myalgia and bone pain

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

Monitoring

Drugs

- U&Es, LFTs and FBC prior to starting a cycle of treatment

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.

Haematological

In general the treatment can proceed if the neutrophils are greater than $1x10^9$/L and the platelets are greater than $100x10^9$/L. Always' check with the relevant consultant.

Consider blood transfusion if the patient symptomatic of anaemia or has a haemoglobin of less than 8g/dL (80g/L).

Hepatic Impairment

Drug	Bilirubin µmol/L		AST/ALT units/L	Dose (% of original dose)
Cytarabine	greater than 34		N/A	50% Escalate doses in subsequent cycles in the absence of toxicity

Renal Impairment

Drug	Creatinine Clearance (ml/min)	Dose (% of original dose)
Cytarabine	less than 60	60%
	less than 45	50%
	less than 30	Discuss with consultant

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.

Regimen

1 - 2 cycles (1 cycle will be set in ARIA of 28 days)

Cycle two, if required, should proceed when there is neutrophil and platelet recovery and the response to cycle one has been assessed.

Drug	Total Dose	Days	Administration
Cytarabine	18000 mg/m^2 (6 doses of 3000mg/m^2 every 12 hours)	3000mg/ m^2 BD every 12 hours at 9am and 9pm. 1, 3, 5 (6 doses in total)	Administer via CADD Solis VIP pump for intermittent infusion. **Each infusion bag:** contains **TWO doses** (500ml total volume). Connect and disconnect infusions on day(s) stated as per patient schedule. **Each dose**: IV infusion of 3000mg/m^2 in sodium chloride 0.9% over 240 minutes.

Dose Information

- Cytarabine will be dose banded according to the national dose bands (100mg/ml)
- The daily doses should be given 12 hours apart
- The standard dose is 3000mg/m^2. The dose may be decreased in those who are 60 years or older or, on in those patients who have relapsed post transplant where the 3000mg/m^2 dose may not be tolerated.

Administration Information

CADD pump

- A total of 2 doses will be provided in one infusion bag, to be administered as intermittent infusion via a CADD pump for the 9AM and 9PM dose.
- Therefore, the bag will need changing between administration dates.
- However due to the stability of the drug this may be split into multiple infusion bags to be administered across days and require changes in the ambulatory setting. -This will be individual to the patient dose and will be outlined in their specific schedule.
- CADD administration set must be used for connection to the CADD pump device for set-up and administration.
- Sodium chloride 0.9% 100ml to be run as continuous infusion to keep CADD infusion line patent.
- Administer concurrently with cytarabine via Y-site with at 0.5 mL/hour on days 1 to 5.

Extravasation

- Cytarabine – neutral (irritant in large volumes)

Other

- The daily doses of cytarabine should be given 12 hours apart

Additional Therapy

This regimen is to be administered in the ambulatory setting.
Please refer to the schedule for each individual patient.

- Antiemetics

  Starting 15 - 30 minutes prior to chemotherapy

  - metoclopramide 10mg three times a day when required oral
  - ondansetron 8mg twice a day on days 1, 2, 3, 4, 5 oral

- Aciclovir 400mg twice a day until neutrophils are greater than 1x10^9/L

- Discuss the need and choice of antifungal with a consultant

- Prednisolone eye drops 0.5% into each eye four times a day. Continue for 5 days after cytarabine administration

- Allopurinol 300mg daily for first 7 days of initial induction chemotherapy. This is not generally required where the cytarabine is being prescribed in the consolidation setting

- 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.

- Supportive antimicrobials may be supplied with direction to only commence if and when directed by the haematology team when neutrophils below 0.5 $x10^9$/L
  - Posaconazole 300mg once daily oral
  - Ciprofloxacin 250mg twice daily oral

References
1.Lowenberg B. Sense and nonsense of high dose cytarabine for acute myeloid leukemia. Blood 2013; 121: 26-28.

REGIMEN SUMMARY

AmB-Cytarabine (3000mg/m^2)

Other than those listed below, supportive medication for this regimen will not appear in Aria as prescribed agents. Supportive care should be prescribed on ARIA and given to the patient on day 1.

Day 1

1. Ondansetron 8mg oral or intravenous

2. Metoclopramide 10mg oral or intravenous

3. Warning – Cytarabine is TWICE a day. TWO doses delivered in one infusion bag administered via CADD pump
   Administration Instructions
   Cytarabine is administered TWICE a day at 12 hour intervals (1000 and 2200) via CADD pump.
   Sodium chloride infusion must be administered concurrently.
   Always refer to the patient schedule for supportive treatments and fluids

4. Cytarabine 6000mg/m^2 intravenous infusion in sodium chloride 500ml 0.9% as intermittent infusions via CADD pump
   Administration Instructions
   The daily doses of cytarabine should be given 12 hours apart
   One dose: Cytarabine 3000mg/m^2 in 250ml sodium chloride 0.9% over 240 minutes at 63ml/hour.
   Each infusion bag contains: TWO doses
   Cytarabine is administered TWICE a day at 12 hour intervals (1000 and 2200) on days 1, 3, 5 (6 doses in total).
   Connect infusion bag on day 1 and disconnect on day 2.

5. Sodium Chloride 0.9% 100ml continuous infusion at 0.5ml/hr.
   Administration Instructions
   Sodium chloride 0.9% to be administered via folfusor pump at 0.5ml/hr on Days 1 to 5.
   To be connected via Y-site with CADD pump to maintain line patency.
   Disconnect folfusor at the same time as disconnecting CADD pump

6. **Warning -Ensure take home medicines are supplied**

Take home medicines

7. Ondansetron oral 8mg once a day in the evening on day 1 and then take 8mg twice daily for 6 days.

8. Metoclopramide oral 10mg up to twice a day in the afternoon and evening on day 1, on the first day of chemotherapy. Then take three times a day when required.

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

10. Prednisolone 0.5% minims eye drops. Instil 1 drop into both eyes four times a day for 10 days.

11. Allopurinol 300mg once a day for 7 days oral
    - (review cycle 2 or if consolidation treatment)

12. Nystatin 1ml four times a day
    Administration instructions – please supply 1 x OP

13. Sodium Chloride 0.9% oral rinse 10mL four times a day -consider
    Administration instructions – pharmacy please supply 50 x 10mL pods

14. Chlorhexidine Gluconate 10ml mouthwash oromucosal four times a day when required.

15. Gastric Protection -consider
    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 supply 28 days or the nearest original pack size.

16. Ciprofloxacin 250mg twice daily oral -To be taken only once directed by your haematology team.
    Please supply 28 days or the nearest original pack size.

17. Posaconazole 300mg once daily -To be taken only once directed by your haematology team.
    Please supply 28 days or the nearest original pack size.

Always refer to the patient schedule for supportive treatments and fluids

Day 3

18. Warning – Cytarabine is TWICE a day. TWO doses delivered in one infusion bag administered via CADD pump
    Administration Instructions
    Cytarabine is administered TWICE a day at 12 hour intervals (1000 and 2200) via CADD pump.
    Sodium chloride infusion must be administered concurrently.
    Always refer to the patient schedule for supportive treatments and fluids

19. Cytarabine 6000mg/m^2 intravenous infusion in sodium chloride 500ml 0.9% as intermittent infusions via CADD pump
    Administration Instructions
    The daily doses of cytarabine should be given 12 hours apart
    One dose: Cytarabine 3000mg/m^2 in 250ml sodium chloride 0.9% over 240 minutes at 63ml/hour.
    Each infusion bag contains: TWO doses
    Cytarabine is administered TWICE a day at 12 hour intervals (1000 and 2200) on days 1, 3, 5 (6 doses in total).
    Connect infusion bag on day 3 and disconnect on day 4.

20. Sodium Chloride 0.9% 100ml continuous infusion at 0.5ml/hr.
    Administration Instructions
    Sodium chloride 0.9% to be administered via folfusor pump at 0.5ml/hr on Days 1 to 6.
    To be connected via Y-site with CADD pump to maintain line patency.
    Disconnect folfusor at the same time as disconnecting CADD cassette

Day 5

21. Warning – Cytarabine is TWICE a day. TWO doses delivered in one infusion bag administered via CADD pump

Administration Instructions

Cytarabine is administered TWICE a day at 12 hour intervals (1000 and 2200) via CADD pump.
Sodium chloride infusion must be administered concurrently.
Always refer to the patient schedule for supportive treatments and fluids

22. Cytarabine 6000mg/m^2 intravenous infusion in sodium chloride 500ml 0.9% as intermittent infusions via CADD pump

Administration Instructions

The daily doses of cytarabine should be given 12 hours apart
One dose: Cytarabine 3000mg/m^2 in 250ml sodium chloride 0.9% over 240 minutes at 63ml/hour.
Each infusion bag contains: TWO doses
Cytarabine is administered TWICE a day at 12 hour intervals (1000 and 2200) on days 1, 3, 5 (6 doses in total).
Connect infusion bag on day 5 and disconnect on day 6.

23. Sodium Chloride 0.9% 100ml continuous infusion at 0.5ml/hr.

Administration Instructions

Sodium chloride 0.9% to be administered via folfusor pump at 0.5ml/hr on Days 1 to 6.
To be connected via Y-site with CADD pump to maintain line patency.
Disconnect folfusor at the same time as disconnecting CADD cassette

Always refer to the patient schedule for supportive treatments and fluids

DOCUMENT CONTROL

Version	Date	Amendment	Written By	Approved By
1	April 2024	New ambulatory regimen	Madeleine Norbury Pharmacist	Dr Christopher Dalley 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;

University Hospital Southampton 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.