Provincial Clinical Knowledge Topic

Acute Myeloid Leukemia, Adult Cancer – Inpatient

V 1.0

Revision History

Version	Date of Revision	Description of Revision	Revised By
1.0	November 21, 2018	Topic Completed	See Acknowledgments

Important Information Before you Begin

The recommendations contained in this knowledge topic have been provincially adjudicated and are based on best practice and available evidence. Clinicians applying these recommendations should, in consultation with the patient, use independent medical judgment in the context of individual clinical circumstances to direct care. This knowledge topic will be reviewed periodically and updated as best practice evidence and practice change.

The information in this topic strives to adhere to Institute for Safe Medication Practices (ISMP) safety standards and align with Quality and Safety initiatives and accreditation requirements such as the Required Organizational Practices. Some examples of these initiatives or groups are: Health Quality Council Alberta (HQCA), Choosing Wisely campaign, Safer Healthcare Now campaign etc.

Guidelines

This topic is based on the following guideline(s): LYHE-006 ACUTE MYELOID LEUKEMIA Guidelines Resource Unit (GURU) Clinical Practice Guideline

Please refer to Acute Myeloid Leukemia Clinical Practice Guideline for more information and recommendations about this topic.

Keywords

Topic Name: Acute Myeloid Leukemia, Adult Cancer – Inpatient

- AML
- Induction
- Re-Induction
- Relapse
- Consolidation
- Idarubicin Cytarabine (IDAC): AML, Adult Cancer Inpatient Order Set 7&3, 3&7, IDAC
- Mitoxantrone Etoposide (NOVE): AML, Adult Cancer Inpatient Order Set
- NOVE
- Mitoxantrone Etoposide Cytarabine (NOVE-HDAC): AML, Adult Cancer Inpatient Order Set
- NOVE HDAC
- Fludarabine Cytarabine Idarubicin (FLAG-Ida): AML, Adult Cancer Inpatient Order Set
- FLAG - Ida
- Fludarabine Cytarabine (FLAG): AML, Adult Cancer Inpatient Order Set
- FLAG
- High Dose Etoposide Cyclophosphamide (VP/Cy): AML, Adult Cancer Inpatient Order Set
- VP/Cy

Clinical Decision Support

Guides:

- Each order set should include access to the LYHE-008 ACUTE MYELOID LEUKEMIA Guidelines Resource Unit (GURU) Clinical Practice Guideline

References:

- Cumulative doxorubicin-equivalent doses of anthracyclines and anthracenediones should be calculated and available on patient's chart at time of ordering these drugs
- Build required for *Neurological Assessment for Cerebellar Dysfunction* form; See internal Alberta Health Services webpage for assessment form

Alerts:

- Alert ordering clinician if cumulative doxorubicin-equivalent dose thresholds of anthracyclines and anthracenediones have been reached for patient at time of ordering these drugs
- If induction or re-induction is chosen as treatment phase, alert ordering clinician that patient is at risk for tumor lysis and, therefore, Tumor Lysis Prophylaxis should be ordered along with treatment protocol
- For the treatments protocols *Idarubicin Cytarabine Adult Cancer Inpatient Order Set* and *High Dose Cytarabine Adult Cancer Inpatient Order Set*:
    - If patient has a Flt 3+ mutation previously resulted in their chart or a new result is added to their chart, alert clinician, at time of ordering treatment protocol or at time of resulting, to consider adding midostaurin to treatment protocol. Midostaurin is a non-formulary agent and STEDT (Short Term Exceptional Drug Therapy) approval would be required in advance of ordering.
    - It often takes 5 to 7 days for Flt 3 mutation to be resulted and appear in patient's chart; for this reason, midostaurin is usually ordered after induction treatment protocol has been initiated but will already be resulted in the patient's chart when initiating a consolidation treatment protocol

Idarubicin Cytarabine (IDAC): AML, Adult Cancer Inpatient Order Set

Order Set Keywords: IDAC, 7&3, AML, induction, re-induction, Acute Myeloid Leukemia
Order Set Requirements:

Most recent:

- Height _____ cm
- Weight
  - actual _____ kg
- BSA _____ m^2
- Estimated Creatinine Clearance (CrCl) _____
- Bilirubin and creatinine lab results
- Baseline MUGA/ECHO/cardiac MRI: left ventricular ejection fraction displayed

Link patient age with recommended dose of chemotherapy:

- For adults age 60 or under: cytarabine (200 mg/m^2/dose)
- For adults age greater than 60 years: cytarabine (100 mg/m^2/dose)

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Indication

Induction or Re-induction therapy for Acute Myeloid Leukemia (AML)

Treatment Phase:

Induction or Re-Induction

Treatment Goal:

_____

Treatment Cycle and Dates

Cycle __1__ *(current cycle number)* of __1__ *(total number of cycles to be administered)*
Cycle length __N/A__ *(days/weeks)*
Day 1 _____ *(dd-Mon-yyyy)*

Protocol Description:
Protocol DAY 1 to 3
IDArubicin 12 mg/m^2/dose
Protocol DAY 1 to 7
cytarabine 200 mg/m^2/dose (for 60 years old or less), ***OR***
cytarabine 100 mg/m^2/dose (for more than 60 years old)

~Start of Order Panel~ Hematology Laboratory Investigations – ONCE - Inpatient

**Hematology Laboratory Investigations – ONCE – Inpatient

ONCE - Day of admission or start of therapy

☐ Unit to Collect ☐ Lab to Collect

Hematology

☑ Complete Blood Count (CBC) with Differential ☑ Fibrinogen
☑ PT (INR) ☑ Retic Count
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☑ PTT

Transfusion Medicine

☑ Type and Screen

Chemistry

☑ Electrolytes (Na, K, Cl, CO2)	☑ Albumin	☐ Bilirubin Direct
☑ Creatinine	☐ AST	☑ LD
☑ Glucose (Random)	☑ ALT	☐ Lipase
☑ Calcium (Ca)	☑ ALP	☑ Protein Total
☑ Magnesium (Mg)	☑ GGT	☑ Urea
☑ Phosphate	☑ Bilirubin Total	☑ Urate (Uric Acid)

Other Labs

Order for ALL women of childbearing age

☐ HCG Beta - serum

~End~

~Start of Order Panel~ Hematology Laboratory Investigations – REPEATING - Inpatient

**Hematology Laboratory Investigations – REPEATING – Inpatient

REPEATING - Starting on Day 2

☐ Unit to Collect ☐ Lab to Collect

Draw the following labs daily for 5 weeks

☑ Complete Blood Count (CBC) with Differential ☑ Electrolytes (Na, K, Cl, CO_2)

☑ Creatinine ☑ Glucose (Random)

Draw the following labs every Monday and Thursday for 5 weeks

Hematology

☑ PT (INR)

☑ PTT

☑ Fibrinogen

☐ Retic Count

Chemistry

☑ Calcium (Ca)	☑ ALT	☑ LD
☑ Magnesium (Mg)	☑ ALP	☐ Lipase
☑ Phosphate	☐ GGT	☑ Protein Total
☑ Albumin	☑ Bilirubin Total	☐ Urea
☐ AST	☐ Bilirubin Direct	☑ Urate (Uric Acid)

~End~

Protocol Specific Laboratory Investigations

☐ Unit to Collect ☐ Lab to Collect

ONCE Pre-Chemotherapy Bloodwork on Day 1

☐ HLA ABC – DR Typing; Draw PRIOR to Day 1 chemotherapy if not previously collected

~*Start of Order Panel*~ *Tumor Lysis Syndrome (TLS) Management - Inpatient*

**Tumor Lysis Syndrome (TLS) Management – Inpatient

Day 1 of protocol if ordered within a protocol or on day of ordering if ordered independent of a protocol

Laboratory Investigations
REPEATING
☐ Unit to Collect ☐ Lab to Collect
Draw the following labs every 8 hours for 4 days
☑ Calcium (Ca)
☑ Creatinine
☑ LD
☑ Magnesium (Mg)
☑ Phosphate
☑ Potassium
☑ Urate (Uric Acid)

Tumor Lysis Syndrome Prophylaxis
Ensure patient is receiving tumor lysis prophylaxis prior to starting induction chemotherapy
☐ allopurinol 300 mg PO daily starting on Day 1; Authorized prescriber to reassess on Day 8

Intravenous Fluid (if required for tumor lysis or renal risk)
☐ 0.9% NaCl infusion at _____ mL/hour; Authorized prescriber to assess daily
☐ Other: _____ *(fluid)* with _____ *(electrolyte)* at _____ mL/hour; Authorized prescriber to assess daily

Provider Communication
☐ Provider Communication: Reassess need for further TLS management after 4 days of order panel

~*End*~

Diagnostic Investigations
☐ Chest X-ray, 2 Projections (GR Chest, 2 Projections): Once prior to starting chemotherapy
☐ Electrocardiogram – 12 lead: Pre-Anthracycline Therapy; Once prior to starting chemotherapy

*Complete **ONE** of the following tests prior to starting chemotherapy:*
☐ MUGA (NM Rest Gated Blood Pool +Lab): Pre-Anthracycline Therapy; Once prior to starting chemotherapy
☐ Echo Transthoracic Complete (ECHO): Pre-Anthracycline Therapy; Once prior to starting chemotherapy
☐ MR Cardiac: Pre-Anthracycline Therapy; Once prior to starting chemotherapy

Provider Communication
☐ Provider Communication: If Flt 3 mutation is resulted as positive, consider adding midostaurin to treatment protocol. Midostaurin is a non-formulary agent and STEDT (Short Term Exceptional Drug Therapy) approval would be required in advance of ordering

Nurse Communication

☐ Nurse Communication: Ensure HLA typing has been drawn prior to initiating treatment
☐ Nurse Communication: Ensure central venous access device (CVAD) is insitu and patent prior to initiating treatment protocol

Supportive Medications

Only order for menstruating women

☐ norethindrone - ethinyl estradiol (Ortho 1/35®) 1 tab PO daily starting on Day 1

Prophylactic Medications

☐ posaconazole 300 mg tab PO BID starting on Day 4 AND THEN posaconazole 300 mg tab PO daily starting on Day 5; Authorized prescriber to reassess when absolute neutrophil count (ANC) greater or equal to 0.5x109/L
☐ valACYclovir 500 mg PO daily starting on Day 1

Pre-Medications

☐ ondansetron 8 mg PO/IV every 8 hours on Days 1 to 3; First dose to be given 30 to 60 minutes pre chemotherapy on Day 1

☐ ondansetron 8 mg PO/IV every 8 hours PRN for nausea starting on Day 4
☐ metoclopramide 10 to 20 mg PO/IV every 6 hours PRN starting on Day 1

Systemic Therapy

Ensure patient is receiving tumor lysis prophylaxis prior to beginning induction chemotherapy.

☐ IDArubicin (12 mg/m^2/dose) _____ mg IV daily on Day 1, 2, 3 for a total of 3 doses; Administer dose over 10 minutes via IV DIRECT or IV infusion
  ❖ *Dosing adjustments: Dosage reduction may be required for renal or hepatic impairment*

Choose ONE:

For adults age 60 or under

☐ cytarabine (200 mg/m^2/dose) _____ mg IV daily on Days 1 to 7 for a total of 7 doses; Infuse each dose continuously over 24 hours; Day 1, 2, 3 may be run over 23 hours to keep protocol on schedule; Day 4, 5, 6, 7 should be run over 24 hours as per protocol
  ❖ *Dosing adjustments: Dosage reduction may be required for hepatic impairment*

OR

For adults greater than 60 years of age

☐ cytarabine (100 mg/m^2/dose) _____ mg IV daily on Days 1 to 7 for a total of 7 doses; Infuse each dose continuously over 24 hours; Day 1, 2, 3 may be run over 23 hours to keep protocol on schedule; Day 4, 5, 6, 7 should be run over 24 hours as per protocol
  ❖ *Dosing adjustments: Dosage reduction may be required for hepatic impairment*

Mitoxantrone Etoposide (NOVE): AML, Adult Cancer Inpatient Order Set

Order Set Keywords: NOVE, AML, induction, consolidation, Acute Myeloid Leukemia
Order Set Requirements:

Most Recent:

- Height _____ cm
- Weight
  - actual _____ kg
- BSA _____ m^2
- Estimated Creatinine Clearance (CrCl) _____
- Bilirubin and creatinine lab results
- Baseline MUGA/ECHO/cardiac MRI: left ventricular ejection fraction displayed

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Indication

Induction or Consolidation therapy for Acute Myeloid Leukemia (AML)

Treatment Phase:

Induction or Consolidation

Treatment Goal:

_____

Treatment Cycle and Dates

Cycle __1__ *(current cycle number)* of __1__ *(total number of cycles to be administered)*
Cycle length __N/A__ *(days/weeks)*
Day 1 _____ *(dd-Mon-yyyy)*

Protocol Description:
Protocol DAY 1 to 5
mitoXANTRONE 10 mg/m^2/dose
etoposide 100 mg/m^2/dose

~Start of Order Panel~ Hematology Laboratory Investigations – ONCE - Inpatient

**Hematology Laboratory Investigations – ONCE – Inpatient

ONCE - Day of admission or start of therapy
☐ Unit to Collect ☐ Lab to Collect
Hematology
☑ Complete Blood Count (CBC) with Differential
☑ PT (INR)
☑ PTT
☑ Fibrinogen
☑ Retic Count
Transfusion Medicine
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☑ Type and Screen

Chemistry

☑ Electrolytes (Na, K, Cl, CO2)	☑ Albumin	☐ Bilirubin Direct
☑ Creatinine	☐ AST	☑ LD
☑ Glucose (Random)	☑ ALT	☐ Lipase
☑ Calcium (Ca)	☑ ALP	☑ Protein Total
☑ Magnesium (Mg)	☑ GGT	☑ Urea
☑ Phosphate	☑ Bilirubin Total	☑ Urate (Uric Acid)

Other Labs

Order for ALL women of childbearing age

☐ HCG Beta - serum

~End~

~Start of Order Panel~ Hematology Laboratory Investigations – REPEATING - Inpatient

**Hematology Laboratory Investigations – REPEATING – Inpatient

REPEATING - Starting on Day 2

☐ Unit to Collect ☐ Lab to Collect

Draw the following labs daily for 5 weeks

☑ Complete Blood Count (CBC) with Differential ☑ Electrolytes (Na, K, Cl, CO_2)

☑ Creatinine ☑ Glucose (Random)

Draw the following labs every Monday and Thursday for 5 weeks

Hematology

☑ PT (INR)

☑ PTT

☑ Fibrinogen

☐ Retic Count

Chemistry

☑ Calcium (Ca)	☑ ALT	☑ LD
☑ Magnesium (Mg)	☑ ALP	☐ Lipase
☑ Phosphate	☐ GGT	☑ Protein Total
☑ Albumin	☑ Bilirubin Total	☐ Urea
☐ AST	☐ Bilirubin Direct	☑ Urate (Uric Acid)

~End~

Protocol Specific Laboratory Investigations

☐ Unit to Collect ☐ Lab to Collect

ONCE Pre-Chemotherapy Bloodwork on Day 1

☐ HLA ABC – DR Typing; Draw PRIOR to Day 1 chemotherapy if not previously collected

Only order Tumor Lysis Syndrome (TLS) Management if protocol is for induction

~Start of Order Panel~ Tumor Lysis Syndrome (TLS) Management - Inpatient

**Tumor Lysis Syndrome (TLS) Management – Inpatient

Day 1 of protocol if ordered within a protocol or on day of ordering if ordered independent of a protocol

Laboratory Investigations
REPEATING

☐ Unit to Collect ☐ Lab to Collect

Draw the following labs every 8 hours for 4 days

☑ Calcium (Ca)
☑ Creatinine
☑ LD
☑ Magnesium (Mg)
☑ Phosphate
☑ Potassium
☑ Urate (Uric Acid)

Tumor Lysis Syndrome Prophylaxis
Ensure patient is receiving tumor lysis prophylaxis prior to starting induction chemotherapy

☐ allopurinol 300 mg PO daily starting on Day 1; Authorized prescriber to reassess on Day 8

Intravenous Fluid (if required for tumor lysis or renal risk)

☐ 0.9% NaCl infusion at _____ mL/hour; Authorized prescriber to assess daily
☐ Other: _____ *(fluid)* with _____ *(electrolyte)* at _____ mL/hour; Authorized prescriber to assess daily

Provider Communication

☐ Provider Communication: Reassess need for further TLS management after 4 days of order panel

~End~

Diagnostic Investigations

☐ Chest X-ray, 2 Projections (GR Chest, 2 Projections): Once prior to starting chemotherapy
☐ Electrocardiogram – 12 lead: Pre-Anthracenedione Therapy; Once prior to starting chemotherapy

*Complete **ONE** of the following tests prior to starting chemotherapy:*

☐ MUGA (NM Rest Gated Blood Pool +Lab): Pre-Anthracenediones therapy; Once prior to starting chemotherapy
☐ Echo Transthoracic Complete (ECHO): Pre-Anthracenediones therapy; Once prior to starting chemotherapy
☐ MR Cardiac: Pre-Anthracenediones therapy; Once prior to starting chemotherapy

Nurse Communication

☐ Nurse Communication: Ensure HLA typing has been drawn prior to initiating treatment
☐ Nurse Communication: Ensure central venous access device (CVAD) is insitu and patent prior to initiating treatment protocol

Supportive Medications

Only order for menstruating women

☐ Norethindrone - ethinyl estradiol (Ortho 1/35®) 1 tab PO daily starting Day 1

Prophylactic Medications

☐ valACYclovir 500 mg PO daily starting on Day 1

Choose ONE:

For Induction:

☐ posaconazole 300 mg tab PO BID starting on Day 6 **AND THEN** posaconazole 300 mg tab PO daily starting on Day 7; Authorized prescriber to reassess when absolute neutrophil count (ANC) greater or equal to $0.5x10^9$/L

OR

For Consolidation:

☐ fluCONazole 400 mg PO daily starting Day 6; Authorized prescriber to reassess when absolute neutrophil count (ANC) greater or equal to $0.5x10^9$/L

Pre-Medications

☐ ondansetron 8 mg PO/IV every 8 hours on Days 1 to 5; First dose to be given 30 to 60 minutes pre chemotherapy on Day 1

☐ ondansetron 8 mg PO/IV every 8 hours PRN for nausea starting on Day 6

☐ metoclopramide 10 to 20 mg PO/IV every 6 hours PRN starting on Day 1

Systemic Therapy

Ensure patient is receiving tumor lysis prophylaxis prior to beginning induction chemotherapy

☐ mitoXANTRONE (10 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; Infuse over 15 to 30 minutes

☐ etoposide (100 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; Infuse over 60 minutes; Use non-DEHP tubing for administration; At concentrations greater than 0.4mg/mL to less than 20mg/mL, filter through a 0.2 to 0.22 micron inline filter. No filter is required for other concentrations

- ❖ *Dosing adjustments: Dosage reduction may be required for renal and hepatic impairment*

Mitoxantrone Etoposide Cytarabine (NOVE-HDAC): AML, Adult Cancer Inpatient Order Set

Order Set Keywords: NOVE HiDAC, AML, induction, re-induction, Acute Myeloid Leukemia
Order Set Requirements:
Most Recent:
- Height ______ cm
- Weight
  - actual ______ kg
- BSA ______ m^2
- Estimated Creatinine Clearance (CrCl) ______
- Bilirubin and creatinine lab results
- Baseline MUGA/ECHO/cardiac MRI: left ventricular ejection fraction displayed

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Indication
Re-induction therapy for Acute Myeloid Leukemia (AML)
Treatment Phase:
Re-induction
Treatment Goal:
____

Treatment Cycle and Dates
Cycle __1__ *(current cycle number)* of __1__ *(total number of cycles to be administered)*
Cycle length __N/A__ *(days/weeks)*
Day 1 ______________ *(dd-Mon-yyyy)*

Protocol Description:
Protocol DAY 1 to 5
mitoXANTRONE 10 mg/m^2/dose
etoposide 100 mg/m^2/dose
Protocol DAY 6 to 7
*cytarabine 1500 mg/m^2/dose (for 60 years old or less), **OR***
cytarabine 1000 mg/m^2/dose (for more than 60 years old)

~Start of Order Panel~ Hematology Laboratory Investigations – ONCE - Inpatient

**Hematology Laboratory Investigations – ONCE – Inpatient

ONCE - Day of admission or start of therapy
☐ Unit to Collect ☐ Lab to Collect
Hematology
☑ Complete Blood Count (CBC) with Differential
☑ PT (INR)
☑ Fibrinogen
☑ Retic Count
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☑ PTT

Transfusion Medicine

☑ Type and Screen

Chemistry

☑ Electrolytes (Na, K, Cl, CO2)	☑ Albumin	☐ Bilirubin Direct
☑ Creatinine	☐ AST	☑ LD
☑ Glucose (Random)	☑ ALT	☐ Lipase
☑ Calcium (Ca)	☑ ALP	☑ Protein Total
☑ Magnesium (Mg)	☑ GGT	☑ Urea
☑ Phosphate	☑ Bilirubin Total	☑ Urate (Uric Acid)

Other Labs

Order for ALL women of childbearing age

☐ HCG Beta - serum

~End~

~Start of Order Panel~ Hematology Laboratory Investigations – REPEATING - Inpatient

**Hematology Laboratory Investigations – REPEATING – Inpatient

REPEATING - Starting on Day 2

☐ Unit to Collect ☐ Lab to Collect

Draw the following labs daily for 5 weeks

☑ Complete Blood Count (CBC) with Differential ☑ Electrolytes (Na, K, Cl, CO_2)

☑ Creatinine ☑ Glucose (Random)

Draw the following labs every Monday and Thursday for 5 weeks

Hematology

☑ PT (INR)

☑ PTT

☑ Fibrinogen

☐ Retic Count

Chemistry

☑ Calcium (Ca)	☑ ALT	☑ LD
☑ Magnesium (Mg)	☑ ALP	☐ Lipase
☑ Phosphate	☐ GGT	☑ Protein Total
☑ Albumin	☑ Bilirubin Total	☐ Urea
☐ AST	☐ Bilirubin Direct	☑ Urate (Uric Acid)

~End~

Protocol Specific Laboratory Investigations

☐ Unit to Collect ☐ Lab to Collect

ONCE Pre-Chemotherapy Bloodwork on Day 1

☐ HLA ABC – DR Typing; Draw PRIOR to Day 1 chemotherapy if not previously collected

~Start of Order Panel~ Tumor Lysis Syndrome (TLS) Management - Inpatient

**Tumor Lysis Syndrome (TLS) Management – Inpatient

Day 1 of protocol if ordered within a protocol or on day of ordering if ordered independent of a protocol

Laboratory Investigations
REPEATING
☐ Unit to Collect ☐ Lab to Collect
Draw the following labs every 8 hours for 4 days
☑ Calcium (Ca)
☑ Creatinine
☑ LD
☑ Magnesium (Mg)
☑ Phosphate
☑ Potassium
☑ Urate (Uric Acid)

Tumor Lysis Syndrome Prophylaxis
Ensure patient is receiving tumor lysis prophylaxis prior to starting induction chemotherapy
☐ allopurinol 300 mg PO daily starting on Day 1; Authorized prescriber to reassess on Day 8

Intravenous Fluid (if required for tumor lysis or renal risk)
☐ 0.9% NaCl infusion at _____ mL/hour; Authorized prescriber to assess daily
☐ Other: _____ *(fluid)* with _____ *(electrolyte)* at _____ mL/hour; Authorized prescriber to assess daily

Provider Communication
☐ Provider Communication: Reassess need for further TLS management after 4 days of order panel

~End~

Diagnostic Investigations
☐ Chest X-ray, 2 Projections (GR Chest, 2 Projections): Once prior to starting chemotherapy
☐ Electrocardiogram – 12 lead: Pre-Anthracenedione Therapy; Once prior to starting chemotherapy

*Complete **ONE** of the following tests prior to starting chemotherapy:*
☐ MUGA (NM Rest Gated Blood Pool +Lab): Pre-Anthracenediones therapy; Once prior to starting chemotherapy
☐ Echo Transthoracic Complete (ECHO): Pre-Anthracenediones therapy; Once prior to starting chemotherapy
☐ MR Cardiac: Pre-Anthracenediones therapy; Once prior to starting chemotherapy

Nurse Communication
☐ Nurse Communication: Ensure HLA typing has been drawn prior to initiating treatment
☐ Nurse Communication: Ensure central venous access device (CVAD) is insitu and patent prior to initiating treatment protocol
☐ Nurse Communication: Initiate *Neurological Assessment for Cerebellar Dysfunction* while on high-dose cytarabine to screen for cerebellar toxicity; See internal Alberta Health Services webpage for assessment form

Supportive Medications

Only order for menstruating women

☐ norethindrone - ethinyl estradiol (Ortho 1/35®) 1 tab PO daily starting Day 1

Prophylactic Medications

☐ posaconazole 300 mg tab PO BID starting on Day 6 AND THEN posaconazole 300 mg tab PO daily starting on Day 7; Authorized prescriber to reassess when absolute neutrophil count (ANC) greater or equal to 0.5x109/L

☐ valACYclovir 500 mg PO daily starting on Day 1

Conjunctivitis Prophylaxis

Choose both:

☐ dexamethasone 0.1% eye drops 2 drops to each eye every 4 hours while awake on Days 6, 7, 8, 9; First dose to be given pre cytarabine on Day 6

AND

☐ dexamethasone 0.1% eye ointment to each eye at bedtime on Days 6, 7, 8, 9

OR choose:

☐ predniSOLone 1% eye drops 2 drops to each eye TID while awake on Days 6, 7, 8, 9; First dose to be given pre cytarabine on Day 6

Pre-Medications

☐ ondansetron 8 mg PO/IV every 8 hours on Days 1 to 7; First dose to be given 30 to 60 minutes pre chemotherapy on Day 1

☐ ondansetron 8 mg PO/IV every 8 hours PRN for nausea starting on Day 8

☐ metoclopramide 10 to 20 mg PO/IV every 6 hours PRN starting on Day 1

Systemic Therapy

Ensure patient is receiving tumor lysis prophylaxis prior to beginning induction chemotherapy

☐ mitoXANTRONE (10 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; Infuse over 15 to 30 minutes

☐ etoposide (100 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; infuse over 60 minutes; Use non-DEHP tubing for administration; At concentrations greater than 0.4mg/mL to less than 20mg/mL, filter through a 0.2 to 0.22 micron inline filter. No filter is required for other concentrations

- ❖ *Dosing adjustments: Dosage reduction may be required for renal impairment*

Choose ONE:

For adults age 60 or under

☐ cytarabine (1500 mg/m^2/dose) _____ mg IV every 12 hours on Days 6 and 7 for a total of 4 doses; Infuse over 3 hours

- ❖ *Dosing adjustments: Dosage reduction may be required for renal or hepatic impairment*

OR

For adults greater than 60 years if age

☐ cytarabine (1000 mg/m^2/dose) _____ mg IV every 12 hours on Days 6 and 7 for a total of 4 doses; Infuse over 3 hours

- ❖ *Dosing adjustments: Dosage reduction may be required for renal or hepatic impairment*

Alberta Health Services

Fludarabine Cytarabine Idarubicin (FLAG-Ida): AML, Adult Cancer Inpatient Order Set

Order Set Keywords: FLAG-Ida, AML, induction, re-induction, consolidation, Acute Myeloid Leukemia

Order Set Requirements:

Most Recent:

- Height ______ cm
- Weight
  - actual ______ kg
- BSA ______ m^2
- Estimated Creatinine Clearance (CrCl) ______
- Bilirubin and creatinine lab results
- Baseline MUGA/ECHO/cardiac MRI: left ventricular ejection fraction displayed

Link patient age with recommended dose of chemotherapy:

- For adults age 60 or under: cytarabine (2000 mg/m^2/dose)
- For adults age greater than 60 years: cytarabine (1000 mg/m^2/dose)

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Indication

Induction or Re-induction or Consolidation therapy for Acute Myeloid Leukemia (AML)

Treatment Phase:

Induction or Re-induction or Consolidation

Treatment Goal:

____

Treatment Cycle and Dates

Cycle __1__ *(current cycle number)* of __1__ *(total number of cycles to be administered)*

Cycle length __N/A__ *(days/weeks)*

Day 1 ______________ *(dd-Mon-yyyy)*

Protocol Description:

Protocol DAY 1 to 3

IDArubicin 8 mg/m^2/dose ***OR***

IDArubicin 10 mg/m^2/dose

Protocol DAY 1 to 5

fludarabine 30 mg/m^2/dose

cytarabine 2000 mg/m^2/dose (for 60 years old or less), ***OR***

cytarabine 1000 mg/m^2/dose (for more than 60 years old)

~Start of Order Panel~ Hematology Laboratory Investigations – ONCE - Inpatient

**Hematology Laboratory Investigations – ONCE – Inpatient
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ONCE - Day of admission or start of therapy

☐ Unit to Collect ☐ Lab to Collect

Hematology

☑ Complete Blood Count (CBC) with Differential
☑ PT (INR)
☑ PTT
☑ Fibrinogen
☑ Retic Count

Transfusion Medicine

☑ Type and Screen

Chemistry

☑ Electrolytes (Na, K, Cl, CO2)
☑ Creatinine
☑ Glucose (Random)
☑ Calcium (Ca)
☑ Magnesium (Mg)
☑ Phosphate
☑ Albumin
☐ AST
☑ ALT
☑ ALP
☑ GGT
☑ Bilirubin Total
☐ Bilirubin Direct
☑ LD
☐ Lipase
☑ Protein Total
☑ Urea
☑ Urate (Uric Acid)

Other Labs

Order for ALL women of childbearing age

☐ HCG Beta - serum

~End~

~Start of Order Panel~ Hematology Laboratory Investigations – REPEATING - Inpatient

**Hematology Laboratory Investigations – REPEATING – Inpatient

REPEATING - Starting on Day 2

☐ Unit to Collect ☐ Lab to Collect

Draw the following labs daily for 5 weeks

☑ Complete Blood Count (CBC) with Differential
☑ Creatinine
☑ Electrolytes (Na, K, Cl, CO_2)
☑ Glucose (Random)

Draw the following labs every Monday and Thursday for 5 weeks

Hematology

☑ PT (INR)
☑ PTT
☑ Fibrinogen
☐ Retic Count

Chemistry

☑ Calcium (Ca)
☑ Magnesium (Mg)
☑ Phosphate
☑ Albumin
☐ AST
☑ ALT
☑ ALP
☐ GGT
☑ Bilirubin Total
☐ Bilirubin Direct
☑ LD
☐ Lipase
☑ Protein Total
☐ Urea
☑ Urate (Uric Acid)

~End~

Protocol Specific Laboratory Investigations

☐ Unit to Collect ☐ Lab to Collect

ONCE Pre-Chemotherapy Bloodwork on Day 1

☐ HLA ABC – DR Typing; Draw PRIOR to Day 1 chemotherapy if not previously collected

Only order Tumor Lysis Syndrome (TLS) Management if protocol is for induction

~Start of Order Panel~ Tumor Lysis Syndrome (TLS) Management - Inpatient

**Tumor Lysis Syndrome (TLS) Management – Inpatient

Day 1 of protocol if ordered within a protocol or on day of ordering if ordered independent of a protocol

Laboratory Investigations
REPEATING

☐ Unit to Collect ☐ Lab to Collect

Draw the following labs every 8 hours for 4 days

☑ Calcium (Ca)
☑ Creatinine
☑ LD
☑ Magnesium (Mg)
☑ Phosphate
☑ Potassium
☑ Urate (Uric Acid)

Tumor Lysis Syndrome Prophylaxis
Ensure patient is receiving tumor lysis prophylaxis prior to starting induction chemotherapy

☐ allopurinol 300 mg PO daily starting on Day 1; Authorized prescriber to reassess on Day 8

Intravenous Fluid (if required for tumor lysis or renal risk)

☐ 0.9% NaCl infusion at _____ mL/hour; Authorized prescriber to assess daily
☐ Other: _____ *(fluid)* with _____ *(electrolyte)* at _____ mL/hour; Authorized prescriber to assess daily

Provider Communication

☐ Provider Communication: Reassess need for further TLS management after 4 days of order panel

~End~

Diagnostic Investigations

☐ Chest X-ray, 2 Projections (GR Chest, 2 Projections): Once prior to starting chemotherapy
☐ Electrocardiogram – 12 lead: Pre-Anthracycline Therapy; Once prior to starting chemotherapy

*Complete **ONE** of the following tests prior to starting chemotherapy:*

☐ MUGA (NM Rest Gated Blood Pool +Lab): Pre-Anthracycline Therapy; Once prior to starting chemotherapy
☐ Echo Transthoracic Complete (ECHO): Pre-Anthracycline Therapy; Once prior to starting chemotherapy
☐ MR Cardiac: Pre-Anthracycline Therapy; Once prior to starting chemotherapy

Nurse Communication

☐ Nurse Communication: Ensure HLA typing has been drawn prior to initiating treatment

☐ Nurse Communication: Ensure central venous access device (CVAD) is insitu and patent prior to initiating treatment protocol
☐ Nurse Communication: Irradiated Blood Products only
☐ Nurse Communication: Initiate *Neurological Assessment for Cerebellar Dysfunction* while on high-dose cytarabine to screen for cerebellar toxicity; See internal Alberta Health Services webpage for assessment form

Supportive Medications

Only order for menstruating women

☐ norethindrone - ethinyl estradiol (Ortho 1/35®) 1 tab PO daily starting Day 1

Prophylactic Medications

☐ valACYclovir 500 mg PO daily starting on Day 1

For Induction:

☐ posaconazole 300 mg tab PO BID starting on Day 4 **AND THEN** posaconazole 300 mg tab PO daily starting on Day 5; Authorized prescriber to reassess when absolute neutrophil count (ANC) greater or equal to $0.5x10^9/L$

OR

For Consolidation:

☐ fluCONazole 400 mg PO daily starting Day 4; Authorized prescriber to reassess when absolute neutrophil count (ANC) greater or equal to $0.5x10^9/L$

☐ sulfamethoxazole - trimethoprim 400mg - 80mg 1 tab daily starting on Day 1

OR

If patient has allergy to sulfa or sulfamethoxazole-trimethoprim:

Consider sulfa desensitization

☐ dapsone 50 mg PO daily starting on Day 1

Conjunctivitis Prophylaxis

Choose both:

☐ dexamethasone 0.1% eye drops 2 drops to each eye every 4 hours while awake on Days 1 to 7; First dose to be given pre cytarabine on Day 1

AND

☐ dexamethasone 0.1% eye ointment to each eye at bedtime on Days 1 to 7

OR *choose:*

☐ predniSOLone 1% eye drops 2 drops to each eye TID while awake on Days 1 to 7; First dose to be given pre cytarabine on Day 1

Pre-Medications

☐ ondansetron 8 mg PO/IV every 8 hours on Days 1 to 5; First dose to be given 30 to 60 minutes pre chemotherapy on Day 1

☐ ondansetron 8 mg PO/IV every 8 hours PRN starting on Day 6
☐ metoclopramide 10 to 20 mg PO/IV every 6 hours PRN starting on Day 1

Systemic Therapy

Choose ONE:

☐ IDArubicin (**8** mg/m^2/dose) _____ mg IV daily on Days 1, 2, 3 for a total of 3 doses; Infuse over 10 to 15 minutes or give direct IV over 5 to 10 minutes
- ❖ *Dosing adjustments: Dosage reduction may be required for renal or hepatic impairment*

OR

☐ IDArubicin (**10** mg/m^2/dose) _____ mg IV daily on Days 1, 2, 3 for a total of 3 doses; Infuse over 10 to 15 minutes or give direct IV over 5 to 10 minutes
- ❖ *Dosing adjustments: Dosage reduction may be required for renal or hepatic impairment*

☐ fludarabine (30 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; Infuse over 30 minutes
- ❖ *Dosing adjustments: Dosage reduction may be required for renal impairment*

Choose ONE:

For adults age 60 or under

☐ cytarabine (2000 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; Infuse over 4 hours; Start infusion 4 hours after completion of fludarabine
- ❖ *Dosing adjustments: Dosage reduction may be required for renal or hepatic impairment*

OR

For adults greater than 60 years of age

☐ cytarabine (1000 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; Infuse over 4 hours; Start infusion 4 hours after completion of fludarabine
- ❖ *Dosing adjustments: Dosage reduction may be required for renal or hepatic impairment*

Filgrastim

☐ filgrastim (Neupogen®) 300 micrograms SUBCUTANEOUSLY daily starting on Day 1 to 5 for a total 5 doses; Give dose prior to chemotherapy; May be given intravenously
☐ filgrastim (Neupogen®) 480 micrograms SUBCUTANEOUSLY daily starting on Day 1 to 5 for a total of 5 doses; Give dose prior to chemotherapy; May be given intravenously

Fludarabine Cytarabine (FLAG): AML, Adult Cancer Inpatient Order Set

Order Set Keywords: FLAG, AML, induction, re-induction, consolidation, Acute Myeloid Leukemia

Order Set Requirements:

Most Recent:

- Height ______ cm
- Weight
  - actual ______ kg
- BSA ______ m^2
- Estimated Creatinine Clearance (CrCl) ______
- Bilirubin and creatinine lab results

Link patient age with recommended dose of chemotherapy:

- For adults age 60 or under: cytarabine (2000 mg/m^2/dose)
- For adults age greater than 60 years: cytarabine (1000 mg/m^2/dose)

~~~~~~

Indication

Induction, Re-induction or Consolidation therapy for Acute Myeloid Leukemia (AML)

Treatment Phase:

Induction or Re-induction or Consolidation

Treatment Goal:

____

Treatment Cycle and Dates

Cycle __1__ *(current cycle number)* of ___ *(total number of cycles to be administered)*

Cycle length _____ *(days/weeks)*

Day 1 _______________ *(dd-Mon-yyyy)*

Protocol Description:

Protocol DAY 1 to 5

fludarabine 30 mg/m^2/dose

cytarabine 2000 mg/m^2/dose (for 60 years old or less), ***OR***

cytarabine 1000 mg/m^2/dose (for more than 60 years old)

~Start of Order Panel~ Hematology Laboratory Investigations – ONCE - Inpatient

**Hematology Laboratory Investigations – ONCE – Inpatient

ONCE - Day of admission or start of therapy

☐ Unit to Collect ☐ Lab to Collect

Hematology

☑ Complete Blood Count (CBC) with Differential ☑ Fibrinogen
~~~~~~

☑ PT (INR)
☑ PTT
☑ Retic Count

Transfusion Medicine
☑ Type and Screen

Chemistry
☑ Electrolytes (Na, K, Cl, CO2)
☑ Creatinine
☑ Glucose (Random)
☑ Calcium (Ca)
☑ Magnesium (Mg)
☑ Phosphate
☑ Albumin
☐ AST
☑ ALT
☑ ALP
☑ GGT
☑ Bilirubin Total
☐ Bilirubin Direct
☑ LD
☐ Lipase
☑ Protein Total
☑ Urea
☑ Urate (Uric Acid)

Other Labs
Order for ALL women of childbearing age
☐ HCG Beta - serum

~End~

~Start of Order Panel~ Hematology Laboratory Investigations – REPEATING - Inpatient

**Hematology Laboratory Investigations – REPEATING – Inpatient

REPEATING - Starting on Day 2
☐ Unit to Collect ☐ Lab to Collect

Draw the following labs daily for 5 weeks
☑ Complete Blood Count (CBC) with Differential
☑ Creatinine
☑ Electrolytes (Na, K, Cl, CO_2)
☑ Glucose (Random)

Draw the following labs every Monday and Thursday for 5 weeks

Hematology
☑ PT (INR)
☑ PTT
☑ Fibrinogen
☐ Retic Count

Chemistry
☑ Calcium (Ca)
☑ Magnesium (Mg)
☑ Phosphate
☑ Albumin
☐ AST
☑ ALT
☑ ALP
☐ GGT
☑ Bilirubin Total
☐ Bilirubin Direct
☑ LD
☐ Lipase
☑ Protein Total
☐ Urea
☑ Urate (Uric Acid)

~End~

Protocol Specific Laboratory Investigations

☐ Unit to Collect ☐ Lab to Collect

ONCE Pre-Chemotherapy Bloodwork on Day 1
☐ HLA ABC – DR Typing; Draw PRIOR to Day 1 chemotherapy if not previously collected

Only order Tumor Lysis Syndrome (TLS) Management if protocol is for induction

~Start of Order Panel~ Tumor Lysis Syndrome (TLS) Management - Inpatient

**Tumor Lysis Syndrome (TLS) Management – Inpatient

Day 1 of protocol if ordered within a protocol or on day of ordering if ordered independent of a protocol

Laboratory Investigations
REPEATING

☐ Unit to Collect ☐ Lab to Collect

Draw the following labs every 8 hours for 4 days

☑ Calcium (Ca)
☑ Creatinine
☑ LD
☑ Magnesium (Mg)
☑ Phosphate
☑ Potassium
☑ Urate (Uric Acid)

Tumor Lysis Syndrome Prophylaxis
Ensure patient is receiving tumor lysis prophylaxis prior to starting induction chemotherapy

☐ allopurinol 300 mg PO daily starting on Day 1; Authorized prescriber to reassess on Day 8

Intravenous Fluid (if required for tumor lysis or renal risk)

☐ 0.9% NaCl infusion at _____ mL/hour; Authorized prescriber to assess daily
☐ Other: _____ *(fluid)* with _____ *(electrolyte)* at _____ mL/hour; Authorized prescriber to assess daily

Provider Communication

☐ Provider Communication: Reassess need for further TLS management after 4 days of order panel

~End~

Diagnostic Investigations

☐ Chest X-ray, 2 Projections (GR Chest, 2 Projections): Once prior to starting chemotherapy
☐ Electrocardiogram – 12 lead: Once prior to starting chemotherapy

Nurse Communication

☐ Nurse Communication: Ensure HLA typing has been drawn prior to initiating treatment
☐ Nurse Communication: Ensure central venous access device (CVAD) is insitu and patent prior to initiating treatment protocol
☐ Nurse Communication: Irradiated Blood Products only
☐ Nurse Communication: Initiate *Neurological Assessment for Cerebellar Dysfunction* while on high-dose cytarabine to screen for cerebellar toxicity; See internal Alberta Health Services webpage for form

Supportive Medications

Only order for menstruating women

☐ norethindrone - ethinyl estradiol (Ortho 1/35®) 1 tab PO daily starting Day 1

Prophylactic Medications

☐ valACYclovir 500 mg PO daily starting on Day 1

Choose ONE:

For Induction:

☐ posaconazole 300 mg tab PO BID starting on Day 1 **AND THEN** posaconazole 300 mg tab PO daily starting on Day 2; Authorized prescriber to reassess when absolute neutrophil count (ANC) greater or equal to $0.5x10^9/L$

OR

For Consolidation:

☐ fluCONazole 400 mg PO daily starting Day 1; Authorized prescriber to reassess when absolute neutrophil count (ANC) greater or equal to $0.5x10^9/L$

☐ sulfamethoxazole - trimethoprim 400mg - 80mg 1 tab daily starting on Day 1

OR

If patient has allergy to sulfa or sulfamethoxazole-trimethoprim:

Consider sulfa desensitization

☐ dapsone 50 mg PO daily starting on Day 1

Conjunctivitis Prophylaxis

Choose both:

☐ dexamethasone 0.1% eye drops 2 drops to each eye every 4 hours while awake on Days 1 to 7; First dose to be given pre cytarabine on Day 1

AND

☐ dexamethasone 0.1% eye ointment to each eye at bedtime on Days 1 to 7

OR

☐ predniSOLone 1% eye drops 2 drops to each eye TID while awake on Days 1 to 7; First dose to be given pre cytarabine on Day 1

Pre-Medications

☐ ondansetron 8 mg PO/IV every 8 hours on Days 1 to 5; First dose to be given 30 to 60 minutes pre chemotherapy on Day 1

☐ ondansetron 8 mg PO/IV every 8 hours PRN starting on Day 6

☐ metoclopramide 10 to 20 mg PO/IV every 6 hours PRN starting on Day 1

Systemic Therapy

☐ fludarabine (30 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; Infuse over 30 minutes
- ❖ *Dosing adjustments: Dosage reduction may be required for renal impairment*

Choose ONE:

For adults age 60 or under

☐ cytarabine (2000 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; Infuse over 4 hours; Start infusion 4 hours after completion of fludarabine
- ❖ *Dosing adjustments: Dosage reduction may be required for renal or hepatic impairment*

OR

For adults greater than 60 years of age

☐ cytarabine (1000 mg/m^2/dose) _____ mg IV daily on Days 1 to 5 for a total of 5 doses; Infuse over 4 hours; Start infusion 4 hours after completion of fludarabine
- ❖ *Dosing adjustments: Dosage reduction may be required for renal or hepatic impairment*

Filgrastim

☐ filgrastim (Neupogen®) 300 micrograms SUBCUTANEOUSLY daily starting on Day 1 to 5 for a total 5 doses; Give dose prior to chemotherapy; May be given intravenously

☐ filgrastim (Neupogen®) 480 micrograms SUBCUTANEOUSLY daily starting on Day 1 to 5 for a total of 5 doses; Give dose prior to chemotherapy; May be given intravenously

High Dose Etoposide Cyclophosphamide (VP/Cy): AML, Adult Cancer Inpatient Order Set

Order Set Keywords: VP/Cy, AML, re-induction, Acute Myeloid Leukemia
Order Set Requirements:
Most Recent:
- Height ______ cm
- Weight
  - actual ______ kg
- BSA ______ m^2
- Estimated Creatinine Clearance (CrCl) ______
- Bilirubin and creatinine lab results

~~~~~~

Indication
Re-induction therapy for Acute Myeloid Leukemia (AML)
Treatment Phase:
Re-induction
Treatment Goal:
____
Treatment Cycle and Dates
Cycle __1__ *(current cycle number)* of __1__ *(total number of cycles to be administered)*
Cycle length __N/A__ *(days/weeks)*
Day 1 ______________ *(dd-Mon-yyyy)*

Protocol Description:
Protocol DAY 1
etoposide 2400 mg/m^2/dose
Protocol DAY 3, 4, 5
cyclophosphamide 2000 mg/m^2/dose
mesna 2000 mg/m^2/dose

~Start of Order Panel~ Hematology Laboratory Investigations – ONCE - Inpatient

**Hematology Laboratory Investigations – ONCE – Inpatient

ONCE - Day of admission or start of therapy
☐ Unit to Collect ☐ Lab to Collect
Hematology
☑ Complete Blood Count (CBC) with Differential
☑ PT (INR)
☑ PTT
☑ Fibrinogen
☑ Retic Count
Transfusion Medicine
~~~~~~

☑ Type and Screen

Chemistry

☑ Electrolytes (Na, K, Cl, CO2)	☑ Albumin	☐ Bilirubin Direct
☑ Creatinine	☐ AST	☑ LD
☑ Glucose (Random)	☑ ALT	☐ Lipase
☑ Calcium (Ca)	☑ ALP	☑ Protein Total
☑ Magnesium (Mg)	☑ GGT	☑ Urea
☑ Phosphate	☑ Bilirubin Total	☑ Urate (Uric Acid)

Other Labs

Order for ALL women of childbearing age

☐ HCG Beta - serum

~End~

~Start of Order Panel~ Hematology Laboratory Investigations – REPEATING - Inpatient

**Hematology Laboratory Investigations – REPEATING – Inpatient

REPEATING - Starting on Day 2

☐ Unit to Collect ☐ Lab to Collect

Draw the following labs daily for 5 weeks

☑ Complete Blood Count (CBC) with Differential ☑ Electrolytes (Na, K, Cl, CO_2)

☑ Creatinine ☑ Glucose (Random)

Draw the following labs every Monday and Thursday for 5 weeks

Hematology

☑ PT (INR)

☑ PTT

☑ Fibrinogen

☐ Retic Count

Chemistry

☑ Calcium (Ca)	☑ ALT	☑ LD
☑ Magnesium (Mg)	☑ ALP	☐ Lipase
☑ Phosphate	☐ GGT	☑ Protein Total
☑ Albumin	☑ Bilirubin Total	☐ Urea
☐ AST	☐ Bilirubin Direct	☑ Urate (Uric Acid)

~End~

Protocol Specific Laboratory Investigations

☐ Unit to Collect ☐ Lab to Collect

ONCE Pre-Chemotherapy Bloodwork on Day 1

☐ HLA ABC – DR Typing; Draw PRIOR to Day 1 chemotherapy if not previously collected

~Start of Order Panel~ Tumor Lysis Syndrome (TLS) Management - Inpatient

**Tumor Lysis Syndrome (TLS) Management – Inpatient

Day 1 of protocol if ordered within a protocol or on day of ordering if ordered independent of a protocol

Laboratory Investigations
REPEATING
☐ Unit to Collect ☐ Lab to Collect
Draw the following labs every 8 hours for 4 days
☑ Calcium (Ca)
☑ Creatinine
☑ LD
☑ Magnesium (Mg)
☑ Phosphate
☑ Potassium
☑ Urate (Uric Acid)

Tumor Lysis Syndrome Prophylaxis
Ensure patient is receiving tumor lysis prophylaxis prior to starting induction chemotherapy
☐ allopurinol 300 mg PO daily starting on Day 1; Authorized prescriber to reassess on Day 8

Intravenous Fluid (if required for tumor lysis or renal risk)
☐ 0.9% NaCl infusion at _____ mL/hour; Authorized prescriber to assess daily
☐ Other: _____ *(fluid)* with _____ *(electrolyte)* at _____ mL/hour; Authorized prescriber to assess daily

Provider Communication
☐ Provider Communication: Reassess need for further TLS management after 4 days of order panel

~End~

Diagnostic Investigations
☐ Chest X-ray, 2 Projections (GR Chest, 2 Projections): Once prior to starting chemotherapy

*Complete **ONE** of the following tests prior to starting chemotherapy:*
☐ MUGA (NM Rest Gated Blood Pool +Lab): Once prior to starting chemotherapy
☐ Echo Transthoracic Complete (ECHO): Once prior to starting chemotherapy
☐ MR Cardiac: Once prior to starting chemotherapy

Nurse Communication
☐ Nurse Communication: Ensure HLA typing has been drawn prior to initiating treatment
☐ Nurse Communication: Ensure central venous access device (CVAD) is insitu and patent prior to initiating treatment protocol

Patient Care
☐ Intake and Output - Measure ins/outs every 4 hours while receiving Etoposide; If output less than 400 mL during a 4 hour period, give PRN furosemide and notify MD
☐ Urine Dipstick Testing – POCT: for blood – every shift starting on Day 3 to Day 6

Supportive Medications

Only order for menstruating women

☐ norethindrone - ethinyl estradiol (Ortho 1/35®) 1 tab PO daily starting Day 1

Choose BOTH:

☐ furosemide 20 mg IV daily on Days 3, 4, 5; After each dose of cyclophosphamide
☐ furosemide 20 mg IV every 4 hours PRN starting on Day 1 to 7 for a total of 7 days; Give if urine output is less than 400 mL during a 4 hour period

Prophylactic Medications

☐ posaconazole 300 mg tab PO BID starting on Day 3 AND THEN posaconazole 300 mg tab PO daily starting on Day 4; Authorized prescriber to reassess when absolute neutrophil count (ANC) greater or equal to 0.5x109/L
☐ valACYclovir 500 mg PO daily starting on Day 1

Pre-Medications

☐ ondansetron 8 mg PO/IV every 8 hours on Days 1 to 5; First dose to be given 30 to 60 minutes pre-chemotherapy on Day 1
☐ dexamethasone 4 mg PO daily on Day 1 to 5 for a total of 5 doses; Give morning dose pre-chemotherapy
☐ aprepitant 125 mg PO once on Day 3 for a total of 1 dose AND THEN aprepitant 80 mg PO daily on Days 4 and 5 for a total of 2 doses; Give dose 1 hour pre-chemotherapy

☐ ondansetron 8 mg PO/IV every 8 hours PRN for nausea starting on Day 6
☐ metoclopramide 10 to 20 mg PO/IV every 6 hours PRN starting on Day 1

Intravenous Fluids

☐ D5W - 0.45% sodium chloride with _____ mmol/L KCL + $MgSO_4$ _____ g/L at _____ mL/hr starting on Day _____ for a total of _____ days
☐ Other: _____ *(fluid)* with _____ *(electrolyte)* at _____ mL/hour; Authorized prescriber to assess daily

Systemic Therapy

Use ideal body weight if less than actual body weight for dosing calculations

☐ etoposide (2400 mg/m^2/dose) _____ mg IV daily on Day 1 for a total of 1 dose; Infuse over 34 hours; Use non-DEHP tubing for administration; At concentrations greater than 0.4mg/mL to less than 20mg/mL, filter through a 0.2 to 0.22 micron inline filter. No filter is required for other concentrations
  ❖ *Dosing adjustments: Dosage reduction may be required for renal impairment*

Use ideal body weight if less than actual body weight for dosing calculations

☐ cyclophosphamide (2000 mg/m^2/dose) _____ mg IV daily on Days 3, 4, 5 for a total of 3 doses; Infuse each dose over 2 hours
☐ mesna (2000 mg/m^2/dose) _____ mg IV daily on Days 3, 4, 5 for a total of 3 doses; Infuse each dose over 2 hours

Transition Planning

Patient and Family Education

MyHealth.Alberta.ca

- Cancer Resources
- Leukemia

Alberta Health Services Website (Internal)

- Leukemia Resources - Please see *Patient and Family Education Resources: Disease Specific* on the CancerControl Alberta: Alberta Health Services Internal website

YouTube: AHS Channel

- CancerControl Alberta Playlist

Transitions to Primary Care

Alberta Health Services Website (External)

- Cancer: Provider and Patient Resources

Patient Medication Teaching Sheets

MyHealth.Alberta.ca

- Idarubicin
- Cyclophosphamide
- Mesna
- Cytarabine
- Cytarabine (Low Dose)
- Fludarabine
- Mitoxantrone
- Etoposide
- Ondansetron
- Filgrastim
- Dexamethasone 0.1% Eye Ointment
- Prednisolone 1% Eye Drops
- Posaconazole
- Valacyclovir
- Fluconazole
- Furosemide
- Norethindrone - Ethinyl Estradiol
- Sulfamethoxazole - Trimethoprim
- Dapsone

Alberta Health Services Website (Internal)

- Metoclopramide - Please see *Patient Medication Teaching Sheets* on the CancerControl Alberta AHS Internal website

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Additional Readings and General References

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For questions or feedback related to this knowledge topic please contact Clinical Knowledge Topics by emailing ClinicalKnowledgeTopics@albertahealthservices.ca