Regimen Monograph

A - Regimen Name

NELA Regimen

Nelarabine

Disease Site

Hematologic
Leukemia - Acute Lymphoblastic (ALL)

Intent

Curative

Regimen Category

evidence-informed :

Regimen is considered appropriate as part of the standard care of patients; meaningfully improves outcomes (survival, quality of life), tolerability or costs compared to alternatives (recommended by the Disease Site Team and national consensus body e.g. pan-Canadian Oncology Drug Review, pCODR). Recommendation is based on an appropriately conducted phase III clinical trial relevant to the Canadian context OR (where phase III trials are not feasible) an appropriately sized phase II trial. Regimens where one or more drugs are not approved by Health Canada for any indication will be identified under Rationale and Use.

This **Regimen Abstract** is an **abbreviated** version of a Regimen Monograph and contains only top level information on usage, dosing, schedule, cycle length and special notes (if available). Information in regimen abstracts is accurate to the extent of the ST-QBP regimen master listings, and has not undergone the full review process of a regimen monograph. Full regimen monographs will be published for each ST-QBP regimen as they are developed.

The information provided in this document is intended for use only in the management of adults with leukemia, and for cancer centres with expertise in treating acute leukemia.

Rationale and Uses

For the treatment of patients with relapsed or refractory T-cell ALL and T-cell lymphoblastic lymphoma.

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B - Drug Regimen

nelarabine	1500 mg /m²	IV	Days 1, 3, 5

(This drug is not currently publicly funded for this regimen and intent)

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C - Cycle Frequency

REPEAT EVERY 21 DAYS

Until evidence of disease progression, unacceptable toxicity, or until the patient becomes a candidate for bone marrow transplant

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D - Premedication and Supportive Measures

Antiemetic Regimen: Minimal

- Also refer to CCO Antiemetic Recommendations.

Other Supportive Care:

- **Screen for hepatitis B virus in all cancer patients starting systemic treatment.** Refer to the hepatitis B virus screening and management guideline.
- Prophylaxis for tumour lysis syndrome is recommended.
- Consider antiviral and other prophylaxis for infection based on institutional guidelines.

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E - Dose Modifications

Doses should be modified according to the protocol by which the patient is being treated.

Dosage with toxicity

The following are suggested modifications:

Toxicity / Grade	Action
Platelets < 100 x 10^9/L and/or ANC < 1.5 x 10^9/L OR Febrile neutropenia	Hold until recovery
Grade 3 non-hematologic toxicity (NOT including neurotoxicity)	Hold until recovery
Grade 4 non-hematologic toxicity OR Grade 2 or greater neurotoxicity OR rhabdomyolysis, drug-related increases in CPK	Discontinue

Hepatic Impairment

Nelarabine has not been studied in hepatic impairment. Patients with hepatic impairment should be monitored closely for toxicities.

Renal Impairment

Nelarabine has not been studied in renal impairment.

Nelarabine and ara-G are partially renally excreted. No dosage adjustment is recommended for CrCl ≥ 50 ml/min. No dosing data available for CrCl < 50 ml/min; monitor these patients closely as there may be an increased risk of adverse effects.

Dosage in the Elderly

No dosage adjustment is recommended in the elderly; however, these patients may have reduced renal function (see dosage with renal impairment). Patients over age 65 had increased rates of neurologic adverse effects.

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F - Adverse Effects

Refer to nelarabine drug monograph(s) for additional details of adverse effects.

The following adverse effects were observed in adults treated with single-agent nelarabine.

Very common (≥ 50%)	Common (25-49%)	Less common (10-24%)	Uncommon (< 10%), but may be severe or life-threatening
• Myelosuppression ± infection, bleeding (may be severe; including opportunistic infections) • Fatigue	• Nausea, vomiting • Cough, dyspnea	• Neurologic effects* (may be severe) • Diarrhea • Constipation • Edema • Headache • Musculoskeletal pain	• ↑ LFTs • Tumour lysis syndrome • Rhabdomyolysis • Reduced vision/ blindness • Leukoencephalopathy • Pleural effusion • Tachycardia

*Signs and symptoms may include somnolence, confusion, altered level of consciousness, seizures, ataxia, paresthesias and hypoesthesia. Severe effects may include coma, status epilepticus, myelopathy, craniospinal demyelination or ascending neuropathy resembling Guillain-Barre syndrome.

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G - Interactions

Refer to nelarabine drug monograph(s) for additional details

- Avoid concomitant use with adenosine deaminase inhibitors (pentostatin) as it can reduce conversion of nelarabine pro-drug to its active form
- Avoid concomitant intrathecal chemotherapy; cases of fatal neurotoxicity have been reported.

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H - Drug Administration and Special Precautions

Refer to nelarabine drug monograph(s) for additional details

Administration

- Should not be diluted prior to administration
- Compatible with PVC infusion bags and glass containers.
- Infuse each dose IV over 2 hours.
- Visually inspect for particulates and discolouration prior to administration.
- Store unopened vials at 25°C with excursions permitted between 15-30°C

Contraindications

- Patients who have a hypersensitivity to this drug or any of its components
- Concurrent intrathecal chemotherapy or craniospinal radiation

Warnings/Precautions

- Patients who have had prior craniospinal irradiation, pre-existing CNS disease, or prior intrathecal therapy may be at increased risk of severe neurologic adverse effects
- Use caution with driving or using machinery as drowsiness, dizziness, or other neurologic effects may occur with treatment
- Avoid live vaccines, since they may result in serious or fatal infections in immunocompromised patients

Pregnancy/Lactation

- This treatment is not recommended for use in pregnancy. Adequate contraception should be used by patients and their partners while on treatment and after the last treatment dose. Recommended methods and duration of contraception may differ depending on the treatment. Refer to the drug monograph(s) for more information.
- Breastfeeding is not recommended during this treatment and after the last treatment dose. Refer to the drug monograph(s) for recommendations after the last treatment dose (if available).
- Fertility effects: Unknown

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I - Recommended Clinical Monitoring

Treating physicians may decide to monitor more or less frequently for individual patients but should always consider recommendations from the product monograph.

Refer to the hepatitis B virus screening and management guideline for monitoring during and after treatment.

Recommended Clinical Monitoring

- CBC; Baseline and before each cycle
- Liver function tests; Baseline and before each cycle
- Renal function tests; Baseline and before each cycle
- Clinical toxicity assessment for neurotoxicity, infections and bleeding, tumour lysis syndrome, GI, musculoskeletal and respiratory effects; At each visit

- Grade toxicity using the current NCI-CTCAE (Common Terminology Criteria for Adverse Events) version

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J - Administrative Information

Approximate Patient Visit	2.5 hours
Pharmacy Workload (average time per visit)	44.7 minutes
Nursing Workload (average time per visit)	80 minutes

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K - References

DeAngelo DJ, Yu D, Johnson JL, et al. Nelarabine induces complete remissions in adults with relapsed or refractory T-lineage acute lymphoblastic leukemia or lymphoblastic lymphoma: Cancer and Leukemia Group B study 19801. Blood 2007;109(12):5136-42.

Nelarabine drug monograph. Ontario Health (Cancer Care Ontario).

February 2024 Expanded into full regimen monograph

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M - Disclaimer

Regimen Abstracts

A Regimen Abstract is an abbreviated version of a Regimen Monograph and contains only top level information on usage, dosing, schedule, cycle length and special notes (if available). It is intended for healthcare providers and is to be used for informational purposes only. It is not intended to constitute or be a substitute for medical advice, and all uses of the Regimen Abstract are subject to clinical judgment. Such information is provided on an "as-is" basis, without any representation, warranty, or condition, whether express, or implied, statutory or otherwise, as to the information's quality, accuracy, currency, completeness, or reliability, and Cancer Care Ontario disclaims all liability for the use of this information, and for any claims, actions, demands or suits that arise from such use.

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Regimen Monographs

Refer to the New Drug Funding Program or Ontario Public Drug Programs websites for the most up-to-date public funding information.

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Some Formulary documents, such as the medication information sheets, regimen information sheets and symptom management information (for patients), are intended for patients. Patients should always consult with their healthcare provider if they have questions regarding any information set out in the Formulary documents.

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