

## Clinical Policy: Leucovorin Injection

Reference Number: LA.PHAR.393

Effective Date: 03.16.23

Last Review Date: ~~04.28.24~~12.10.24

Line of Business: Medicaid

[Coding Implications](#)

[Revision Log](#)

See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

**\*\*Please note: This policy is for medical benefit\*\***

### Description

Leucovorin is a reduced folate.

### FDA Approved Indication(s)

Leucovorin injection is indicated:

- After high-dose methotrexate (MTX) therapy in osteosarcoma.
- To diminish the toxicity and counteract the effects of impaired MTX elimination and of inadvertent overdoses of folic acid antagonists.
- For the treatment of megaloblastic anemias due to folic acid deficiency when oral therapy is not feasible.
- For use in combination with 5-fluorouracil to prolong survival in the palliative treatment of patients with advanced colorectal cancer

### Policy/Criteria

*Provider must submit documentation (such as office chart notes, lab results or other clinical information) supporting that member has met all approval criteria.*

It is the policy of Louisiana Healthcare Connections that leucovorin injection is **medically necessary** when the following criteria are met:

#### I. Initial Approval Criteria

##### A. Methotrexate/Folic Acid Antagonist Toxicity Prophylaxis (must meet all):

1. Prescribed for one of the following uses (a, b, or c):
  - a. Rescue after MTX therapy for osteosarcoma or an NCCN-recommended cancer (*see Appendix D*);
  - b. Antidote for impaired MTX elimination;
  - c. Antidote for accidental overdose of folic acid antagonists (including MTX);
2. Request meets one of the following (a or b):\*
  - a. Dose is appropriate and will be adjusted as necessary per section V;
  - b. Dose is supported by practice guidelines or peer-reviewed literature for the relevant use (*prescriber must submit supporting evidence*).

*\*Prescribed regimen must be FDA-approved or recommended by NCCN*

##### Approval duration:

**Impaired elimination/accidental overdose: 1 month**

**High-dose MTX therapy rescue: 6 months**

**B. Megaloblastic Anemia** (must meet all):

1. Diagnosis of megaloblastic anemia due to folic acid deficiency;
2. Member is not a candidate for oral folic acid therapy;
3. Dose does not exceed 1 mg per day.

**Approval duration:** 6 months

**C. Combination Chemotherapy with 5-FU** (must meet all):

1. Prescribed for use in a fluorouracil-based chemotherapy treatment regimen for colorectal cancer or an NCCN-recommended cancer (*see Appendix D*);
2. Prescribed by or in consultation with an oncologist;
3. Prescribed in combination with 5-FU;
4. Request meets one of the following (a or b):\*
  - a. Colorectal cancer: dose does not exceed regimen in section V;
  - b. Dose is supported by practice guidelines or peer-reviewed literature for the relevant use (*prescriber must submit supporting evidence*).

*\*Prescribed regimen must be FDA-approved or recommended by NCCN*

**Approval duration:** 6 months

**D. Other diagnoses/indications** (must meet 1 or 2):

1. If this drug has recently (within the last 6 months) undergone a label change (e.g., newly approved indication, age expansion, new dosing regimen) that is not yet reflected in this policy, refer to If the requested use (e.g., diagnosis, age, dosing regimen) is NOT specifically listed under section III (Diagnoses/Indications for which coverage is NOT authorized) AND criterion 1 above does not apply, refer to the off-label use policy LA.PMN.53

**II. Continued Therapy**

**A. Megaloblastic Anemia** (must meet all):

- a. Currently receiving medication via Louisiana Healthcare Connections benefit or member has previously met initial approval criteria;
2. Member is not a candidate for oral folic acid therapy;
  3. Member is responding positively to therapy;
  4. If request is for a dose increase, new dose does not exceed 1 mg per day.

**Approval duration:** 12 months

**B. All Other Indications in Section I** (must meet all):

- a. Currently receiving medication via Louisiana Healthcare Connections benefit or member has previously met initial approval criteria;
2. Member is responding positively to therapy;
  3. If request is for a dose increase, request meets any of the following (a or b):\*
    - a. New dose does not exceed regimen in section V;
    - b. New dose is supported by practice guidelines or peer-reviewed literature for the relevant use (*prescriber must submit supporting evidence*).

*\*Prescribed regimen must be FDA-approved or recommended by NCCN*

**Approval duration:**

**Impaired elimination/accidental overdose: 1 month**

**All other indications:** 12 months

**C. Other diagnoses/indications** (must meet 1 or 2):

1. If this drug has recently (within the last 6 months) undergone a label change (e.g., newly approved indication, age expansion, new dosing regimen) that is not yet reflected in this policy, refer to LA.PMN.255
2. If the requested use (e.g., diagnosis, age, dosing regimen) is NOT specifically listed under section III (Diagnoses/Indications for which coverage is NOT authorized) AND criterion 1 above does not apply, refer to the off-label use policy: LA.PMN.53

**III. Diagnoses/Indications for which coverage is NOT authorized:**

- A.** Non-FDA approved indications, which are not addressed in this policy, unless there is sufficient documentation of efficacy and safety according to the off label use policies – LA.PMN.53 for Medicaid, or evidence of coverage documents.

**IV. Appendices/General Information**

*Appendix A: Abbreviation/Acronym Key*

5-FU: 5-fluorouracil

FDA: Food and Drug Administration

MTX: methotrexate

NCCN: National Comprehensive Cancer  
Network

*Appendix B: Therapeutic Alternatives*

Not applicable

*Appendix C: Contraindications/Boxed Warnings*

- Contraindication(s): improper therapy for pernicious anemia and other megaloblastic anemias secondary to the lack of vitamin B<sub>12</sub>. A hematologic remission may occur while neurologic manifestations continue to progress.
- Boxed warning(s): none reported

*Appendix D: General Information*

- The NCCN guidelines recommend the combination use of leucovorin with MTX as a rescue for the following cancers (2A recommendation):
  - (Pediatric) acute lymphoblastic leukemia
  - T-cell lymphomas (including peripheral T-cell lymphomas, adult T-cell leukemia/lymphoma, extranodal NK/T-cell lymphoma, hepatosplenic T-Cell lymphoma)
  - Bone cancer (including osteosarcoma, dedifferentiated chondrosarcoma, high-grade undifferentiated pleomorphic sarcoma)
  - CNS cancer (including primary CNS lymphoma, brain metastases, leptomeningeal metastases)
  - B-cell lymphomas (including mantle cell lymphoma, HIV-related B-cell lymphoma, Burkitt lymphoma, high grade B-cell lymphomas, diffuse large B-cell lymphoma, primary mediastinal large B-cell lymphoma, post-transplant lymphoproliferative disorders)
  - Gestational trophoblastic neoplasia

- Chronic lymphocytic leukemia and small lymphocytic lymphoma
- Blastic plasmacytoid dendritic cell neoplasm
- The NCCN guidelines recommend the combination use of leucovorin with fluorouracil-based regimens for the following cancers (2A recommendation):
  - Thymomas and thymic carcinomas
  - Occult primary adenocarcinoma, squamous cell carcinoma, or carcinoma not otherwise specified
  - Mucinous carcinoma of the ovary
  - Vaginal cancer
  - Colon cancer (including appendiceal adenocarcinoma)
  - Gastric cancer
  - Esophageal and esophagogastric junction cancers
  - Anal carcinoma
  - Extrapulmonary poorly differentiated neuroendocrine carcinoma/large or small cell carcinoma, mixed neuroendocrine-non-neuroendocrine neoplasm
  - Neuroendocrine tumors of the pancreas (well-differentiated Grade 1/2)
  - Well-differentiated Grade 3 neuroendocrine tumors
  - Cervical cancer
  - Rectal cancer
  - Pancreatic adenocarcinoma
  - Bladder cancer (non-urothelial and urothelial with variant histology)
  - Small bowel adenocarcinoma
  - Ampullary adenocarcinoma
  - Biliary tract cancers (gallbladder cancer, intrahepatic or extrahepatic cholangiocarcinoma)
- The NCCN guidelines recommend the combination use of leucovorin with MTX for the management of symptomatic Bing-Neel syndrome (2A recommendation) in Waldenström macroglobulinemia / lymphoplasmacytic lymphoma.

## V. Dosage and Administration

Indication	Dosing Regimen	Maximum Dose
Rescue after high-dose MTX therapy	<p>Administer 15 mg (approximately 10 mg/m<sup>2</sup>) PO, IV, or IM every 6 hours for 10 doses starting 24 hours after beginning of MTX infusion. Continue leucovorin administration until the MTX level is below 5 x 10<sup>-8</sup> M (or 0.05 µM).</p> <p>Adjust or extend rescue based on clinical situation and laboratory findings:  <u>Normal MTX elimination (serum MTX 10 µM at 24 hours, 1 µM at 48 hours, and &lt; 0.2 µM at 72 hours after administration):</u> 15 mg PO, IV, or IM every 6 hours for 60 hours (10 doses starting 24 hours after start of MTX infusion)</p>	See regimen

Indication	Dosing Regimen	Maximum Dose
	<p><u>Delayed late MTX elimination (serum MTX <math>&gt; 0.2 \mu\text{M}</math> at 72 hours and <math>&gt; 0.05 \mu\text{M}</math> at 96 hours after administration): 15 mg PO, IV, or IM every 6 hours until MTX <math>&lt; 0.05 \mu\text{M}</math></u></p> <p><u>Delayed early MTX elimination and/or evidence of acute renal injury (serum MTX <math>\geq 50 \mu\text{M}</math> at 24 hours, <math>\geq 5 \mu\text{M}</math> at 48 hours, or <math>\geq 100\%</math> increase in serum creatinine at 24 hours after MTX administration): 150 mg IV every 3 hours until MTX <math>&lt; 1 \mu\text{M}</math>; then 15 mg IV every 3 hours until MTX <math>&lt; 0.05 \mu\text{M}</math></u></p>	
Inadvertent MTX overdosage	<p>Administer as soon as possible after overdose and within 24 hours of MTX administration if there is delayed excretion: 10 mg/m<sup>2</sup> PO, IV, or IM every 6 hours until serum MTX is <math>&lt; 10^{-8} \text{ M}</math>.</p> <p>Increase to 100 mg/m<sup>2</sup> IV every 3 hours if 24 hour serum creatinine has increased 50% over baseline or if the 24 hour MTX level is <math>&gt; 5 \times 10^{-6} \text{ M}</math> or the 48 hour level is <math>&gt; 9 \times 10^{-7} \text{ M}</math> until the MTX level is less than <math>10^{-8} \text{ M}</math></p>	See regimen
Megaloblastic anemia	Up to 1 mg, IV or IM, once a day	1 mg/day
Advanced colorectal cancer	<p>Either of the following two regimens is recommended:</p> <ul style="list-style-type: none"> <li>Leucovorin is administered at 200 mg/m<sup>2</sup> by slow IV injection over a minimum of 3 minutes, followed by 5-fluorouracil at 370 mg/m<sup>2</sup> by IV injection.</li> <li>Leucovorin is administered at 20 mg/m<sup>2</sup> by IV injection followed by 5-fluorouracil at 425<sup>2</sup> mg/m by IV injection.</li> </ul> <p>Treatment is repeated daily for five days. This five-day treatment course may be repeated at 4 week (28-day) intervals, for 2 courses and then repeated at 4 to 5 week (28 to 35 day) intervals provided that the patient has completely recovered from the toxic effects of the prior treatment course.</p>	See regimen

## VI. Product Availability

Single-dose vial for injection: 50 mg, 100 mg, 200 mg, 350 mg, 500 mg

## VII. References

1. Leucovorin Prescribing Information. Schaumburg, IL: Sagent Pharmaceuticals, Inc.; ~~September 2019.~~ November 2022. Available at: [https://www.sagentpharma.com/wp-content/uploads/2020/12/Leucovorin\\_50-100-200-350mg\\_PI\\_September-2019.pdf](https://www.sagentpharma.com/wp-content/uploads/2020/12/Leucovorin_50-100-200-350mg_PI_September-2019.pdf); [dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=9d0e5356-ff39-4a8e-944c-e808a21ef4b2](https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=9d0e5356-ff39-4a8e-944c-e808a21ef4b2). Accessed July 10, 2023; 15, 2024.

2. Leucovorin. In: National Comprehensive Cancer Network Drugs and Biologics Compendium. Available at NCCN.org. Accessed August ~~9, 2023~~ 23, 2024.
3. Devalia V, Hamilton MS, Molloy AM. Guidelines for the diagnosis and treatment of cobalamin and folate disorders. British Journal of Hematology, 2014. 166:496-513. Doi: 10.1111/bjh.12959.

### **Coding Implications**

Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

HCPCS Codes	Description
J0640	Injection, leucovorin calcium, per 50 mg

Reviews, Revisions, and Approvals	Date	LDH Approval Date
Converted corporate to local policy	02.23	03.16.23
Updated criteria for other diagnoses/indications	06.25.23	10.05.23
Annual review; updated Appendix D per NCCN Compendium; template changes applied to other diagnoses/indications and continued therapy section.	04.28.24	<u>07.10.24</u>
<u>No significant changes; references reviewed and updated.</u>	<u>12.10.24</u>	

### **Important Reminder**

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. LHCC makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved.

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