Clinical Policy: Sargramostim (Leukine)
Reference Number: CP.CPA.262
Effective Date: 11.16.16
Last Review Date: 08.18
Line of Business: Commercial

See Important Reminder at the end of this policy for important regulatory and legal information.

Description
Sargramostim (Leukine®) is a recombinant human granulocyte-macrophage colony stimulating factor (GM-CSF).

FDA Approved Indication(s)
Leukine is indicated:
- To shorten time to neutrophil recovery and to reduce the incidence of severe and life-threatening infections and infections resulting in death following induction chemotherapy in adult patients 55 years and older with acute myeloid leukemia (AML);
- For the mobilization of hematopoietic progenitor cells into peripheral blood for collection by leukapheresis and autologous transplantation in adult patients;
- For the acceleration of myeloid reconstitution following autologous peripheral blood progenitor cell (PBPC) or bone marrow transplantation in adult and pediatric patients 2 years of age and older with non-Hodgkin's lymphoma (NHL), acute lymphoblastic leukemia (ALL) and Hodgkin's lymphoma (HL);
- For the acceleration of myeloid reconstitution following allogeneic bone marrow transplantation in adult and pediatric patients 2 years of age and older;
- For treatment of delayed neutrophil recovery or graft failure after autologous or allogeneic bone marrow transplantation in adult and pediatric patients 2 years of age and older;
- To increase survival in adult and pediatric patients from birth to 17 years of age acutely exposed to myelosuppressive doses of radiation (Hematopoietic Syndrome of Acute Radiation Syndrome [H-ARS]).

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 health plans affiliated with Centene Corporation® that Leukine is medically necessary when the following criteria are met:

I. Initial Approval Criteria
A. Acute Myelogenous Leukemia (must meet all):
   1. Diagnosis of AML;
   2. Prescribed for use following induction therapy for AML;
   3. Age ≥ 55 years;
   4. Failure of Neupogen® or Zarxio®, unless contraindicated or clinically significant adverse effects are experienced;
Prior authorization is (or may be) required for Neupogen and Zarxio

D. Dose does not exceed 250 mcg/m² IV daily.

Approval duration: 6 months or to the member’s renewal date, whichever is longer

B. Peripheral Blood Progenitor Cell Collection and Transplantation (must meet all):
   1. Prescribed for one of the following (a or b):
      a. Mobilization of hematopoietic progenitor cells into peripheral blood for collection
         by leukapheresis and autologous transplantation;
      b. Following autologous PBPC transplantation in members with NHL, ALL, HL for
         acceleration of myeloid reconstitution;
   2. Age ≥ 2 years;
   3. Failure of Neupogen or Zarxio, unless contraindicated or clinically significant
      adverse effects are experienced;
      *Prior authorization is (or may be) required for Neupogen and Zarxio
   4. Dose does not exceed 250 mcg/m² daily.

Approval duration: 6 months or to the member’s renewal date, whichever is longer

C. Bone Marrow Transplantation (must meet all):
   1. Prescribed for use in one of the following settings (a, b, or c):
      a. Following autologous BMT in members with NHL, ALL, HL for acceleration of
         myeloid reconstitution;
      b. Following allogeneic BMT for acceleration of myeloid reconstitution;
      c. Following BMT where engraftment is delayed or has failed;
   2. Age ≥ 2 years;
   3. Failure of Neupogen or Zarxio, unless contraindicated or clinically significant
      adverse effects are experienced;
      *Prior authorization is (or may be) required for Neupogen and Zarxio
   4. Dose does not exceed 500 mcg/m² IV daily.

Approval duration: 6 months or to the member’s renewal date, whichever is longer

D. Acute Radiation Syndrome (must meet all):
   1. Prescribed for use following suspected or confirmed acute exposure to
      myelosuppressive doses of radiation;
   2. Failure of Neupogen or Zarxio, unless contraindicated or clinically significant
      adverse effects are experienced;
      *Prior authorization is (or may be) required for Neupogen and Zarxio
   3. Dose does not exceed 12 mcg/kg daily (See Section V for specific weight-based
      dosing).

Approval duration: 6 months or to the member’s renewal date, whichever is longer

E. Other diagnoses/indications
   1. Refer to the off-label use policy for the relevant line of business if diagnosis is NOT
      specifically listed under section III (Diagnoses/Indications for which coverage is
      NOT authorized): CP.CPA.09 for commercial.

II. Continued Therapy
   A. All Indications in Section I (must meet all):
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1. Currently receiving medication via Centene benefit or member has previously met initial approval criteria.
2. Member is responding positively to therapy;
3. Dose does not exceed the FDA-approved maximum recommended dose for the relevant indication.

Approval duration: 6 months or to the member’s renewal date, whichever is longer

B. Other diagnoses/indications (must meet 1 or 2):
1. Currently receiving medication via Centene benefit and documentation supports positive response to therapy.
   Approval duration: Duration of request or 6 months (whichever is less); or
2. Refer to the off-label use policy for the relevant line of business if diagnosis is NOT specifically listed under section III (Diagnoses/Indications for which coverage is NOT authorized): CP.CPA.09 for commercial.

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 – CP.CPA.09 for commercial or evidence of coverage documents.

IV. Appendices/General Information

Appendix A: Abbreviation/Acronym Key
ALL: acute lymphoblastic leukemia
AML: acute myelogenous leukemia
BMT: bone marrow transplantation
FDA: Food and Drug Administration
GM-CSF: granulocyte-macrophage colony stimulating factor
H-A RS: hematopoietic syndrome of acute radiation syndrome
NHL: non-Hodgkin's lymphoma
PBPC: peripheral blood progenitor cell

Appendix B: Therapeutic Alternatives

This table provides a listing of preferred alternative therapy recommended in the approval criteria. The drugs listed here may not be a formulary agent for all relevant lines of business and may require prior authorization.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosing Regimen</th>
<th>Dose Limit/Maximum Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neupogen® (filgrastim), Zarxio® (filgrastim-sndz)</td>
<td>AML: 5 mcg/kg SC or IV QD</td>
<td>AML: 30 mcg/kg/day [IV] or 24 mcg/kg/day [SC]</td>
</tr>
<tr>
<td></td>
<td>BMT: 10 mcg/kg IV or SC infusion QD</td>
<td>BMT, PBPC collection, Acute Radiation Syndrome: 10 mcg/kg/day</td>
</tr>
<tr>
<td></td>
<td>PBPC collection: 10 mcg/kg SC bolus or continuous infusion QD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute Radiation Syndrome:</td>
<td></td>
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</tbody>
</table>
**Clinical Policy**

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<table>
<thead>
<tr>
<th>Drug</th>
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<th>Dose Limit/Maximum Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10 mcg/kg SC QD</td>
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</table>

*Therapeutic alternatives are listed as Brand name® (generic) when the drug is available by brand name only and generic (Brand name®) when the drug is available by both brand and generic.*

**Appendix C: Contraindications**

Not applicable

**Appendix D: General Information**

- Because of potential sensitivity of rapidly dividing hematopoietic progenitor cells, Leukine should not be administered simultaneously with cytotoxic chemotherapy or radiotherapy or within 24 hours preceding or following chemotherapy or radiotherapy.
- Use Leukine with caution in patients with pre-existing fluid retention, pulmonary infiltrates, or congestive heart failure.

V. **Dosage and Administration**

<table>
<thead>
<tr>
<th>Indication</th>
<th>Dosing Regimen</th>
<th>Maximum Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>AML</td>
<td>250 mcg/m²/day IV over a 4 hour period approximately on day 11 or four days following the completion of induction chemotherapy</td>
<td>250 mcg/m² IV daily</td>
</tr>
<tr>
<td>Peripheral blood progenitor cell collection and transplantation</td>
<td>250 mcg/m²/day administered IV over 24 hours or SC once daily</td>
<td>250 mcg/m² IV or SC daily</td>
</tr>
<tr>
<td>Myeloid reconstitution after autologous or allogeneic BMT</td>
<td>250 mcg/m²/day IV over a 2 hour period beginning two to four hours after bone marrow infusion, and not less than 24 hours after the last dose of chemotherapy or radiotherapy</td>
<td>500 mcg/m² IV daily</td>
</tr>
<tr>
<td>BMT failure or engraftment delay</td>
<td>250 mcg/m²/day for 14 days as a 2 hour IV infusion</td>
<td>500 mcg/m² IV daily</td>
</tr>
<tr>
<td>Acute Radiation Syndrome</td>
<td>Weight-based dose SC QD: &gt;40 kg: 7 mcg/kg</td>
<td>See dosing regimen</td>
</tr>
<tr>
<td></td>
<td>15 to 40 kg: 10 mcg/kg</td>
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<td></td>
<td>&lt;15 kg: 12 mcg/kg</td>
<td></td>
</tr>
</tbody>
</table>

VI. **Product Availability**

Lyophilized powder: 250 mcg single-dose vial
Solution: 500 mcg/mL multiple-dose vial

VII. **References**


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.

<table>
<thead>
<tr>
<th>HCPCS Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J2820</td>
<td>Injection, sargramostim (GM-CSF), 50 mcg</td>
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Reviews, Revisions, and Approvals

<table>
<thead>
<tr>
<th></th>
<th>Date</th>
<th>P&amp;T Approval Date</th>
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<tbody>
<tr>
<td>Converted to new template. Minor changes to verbiage and grammar. References updated.</td>
<td>06.16.17</td>
<td>11.17</td>
</tr>
<tr>
<td>3Q 2018 annual review: added new indication for acute radiation syndrome; added criteria sets for each FDA indication to align with other lines of business; references reviewed and updated.</td>
<td>05.02.18</td>
<td>08.18</td>
</tr>
</tbody>
</table>

**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. The Health Plan 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. “Health Plan” means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan’s affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.
This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of members. This clinical policy is not intended to recommend treatment for members. Members should consult with their treating physician in connection with diagnosis and treatment decisions.

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