Reference number(s)
6293-A

STANDARD MEDICARE PART B MANAGEMENT

LYFGENIA (lovotibeglogene autotemcel)

POLICY

I. INDICATIONS

The indications below including FDA-approved indications and compendial uses are considered a covered benefit provided that all the approval criteria are met and the member has no exclusions to the prescribed therapy.

FDA-Approved Indication
Lyfgenia is indicated for the treatment of patients 12 years of age or older with sickle cell disease and a history of vaso-occlusive events.

Limitations of Use:
Following treatment with Lyfgenia, patients with α-thalassemia trait (-α3.7/-α3.7) may experience anemia with erythroid dysplasia that may require chronic red blood cell transfusions. Lyfgenia has not been studied in patients with more than two α-globin gene deletions.

All other indications will be assessed on an individual basis. Submissions for indications other than those enumerated in this policy should be accompanied by supporting evidence from Medicare approved compendia.

II. DOCUMENTATION

The following documentation must be available, upon request, for all submissions:
A. Molecular or genetic testing results documenting sickle cell disease genotype
B. Chart notes or medical records documenting history of severe vaso-occlusive episodes

III. CRITERIA FOR INITIAL APPROVAL

Sickle Cell Disease
Authorization of one dose total may be granted for sickle cell disease when all of the following criteria are met:
A. Member is 12 years of age or older.
B. Member has a diagnosis of sickle cell disease with one of the following genotypes confirmed by molecular or genetic testing:
   1. β^s/β^s
   2. β^s/β^0
   3. β^s/β^+
C. Member has a documented history of at least 2 severe vaso-occlusive episodes per year during the previous two years (see Appendix for examples).
D. Member is eligible for a hematopoietic stem cell transplant (HSCT) but is unable to find a human leukocyte antigen (HLA)-matched related donor.
E. Member has not received a prior hematopoietic stem cell transplant (HSCT).
F. Member has not received Lyfgenia or any other gene therapy previously.
G. Member does not have more than two α-globin gene deletions.

IV. APPENDIX

Examples of Severe Vaso-Occlusive Events

1. Acute pain event requiring a visit to a medical facility and administration of pain medications (opioids or intravenous [IV] non-steroidal anti-inflammatory drugs [NSAIDs]) or RBC transfusions
2. Acute chest syndrome
3. Priapism lasting > 2 hours and requiring a visit to a medical facility
4. Splenic sequestration
5. Hepatic sequestration

V. SUMMARY OF EVIDENCE

The contents of this policy were created after examining the following resources:

1. The prescribing information for Lyfgenia.
2. The available compendium
    a. National Comprehensive Cancer Network (NCCN) Drugs and Biologics Compendium
    b. Micromedex DrugDex
    c. American Hospital Formulary Service- Drug Information (AHFS-DI)
    d. Lexi-Drugs
    e. Clinical Pharmacology
3. Evidence-Based Management of Sickle Cell Disease: Expert Panel Report, 2014. National Institutes of Health.

After reviewing the information in the above resources, the FDA-approved indications listed in the prescribing information for Lyfgenia are covered.

VI. EXPLANATION OF RATIONALE

Support for FDA-approved indications can be found in the manufacturer's prescribing information.

Support for the list of examples of severe vaso-occlusive events can be found in both the clinical trials of Casgevy and Lyfgenia. In addition, the list is further supported by the Evidence-Based Management of Sickle Cell Disease: Expert Panel Report, 2014.

VII. REFERENCES

1. Lyfgenia [package insert]. Somerville, MA: bluebird bio, Inc.; December 2023.
2. Walters JK, Krishnamurti L, Mapara MY, et al. Biologic and clinical efficacy of LentiGlobin for sickle cell disease. NEJM. 2022;386(7):617-628.
3. Evidence-Based Management of Sickle Cell Disease: Expert Panel Report, 2014. National Institutes of Health. Available at https://www.nhlbi.nih.gov/sites/default/files/media/docs/sickle-cell-disease-report%20020816_0.pdf. Accessed December 13, 2023.