Gene Therapy Treatments for Beta Thalassemia

Humana

Medicaid Medical Coverage Policy

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Description

Beta thalassemia (also known as β-thalassemia or Cooley's anemia) is a type of inherited blood disorder that causes a reduction of normal hemoglobin and red blood cells in the blood, through mutations in the beta-globin subunit, leading to insufficient delivery of oxygen in the body. The reduced levels of red blood cells (RBC) can lead to several health issues including dizziness, weakness, fatigue, bone abnormalities and more serious complications.

Transfusion-dependent thalassemia (TDT), the most severe form of the condition, generally requires life-long red blood cell transfusions as the standard course of treatment. These regular transfusions can be associated with multiple health complications including problems in the heart, liver and other organs due to an excessive build-up of iron in the body.

Treatment options for beta thalassemia are limited. Allogeneic hematopoietic stem cell transplantation (HSCT) is the only curative treatment for beta thalassemia; cure rates are achieved in 80% to 90% of individuals. However, matched donors are scarcely available, and some are not optimal candidates for allogeneic HSCT due to age or iron-related complications. In addition, HSCT carries a risk of serious complications, such as graft-versus-host disease.[9]

Casgevy (exagamglogene autotemcel) is one-time gene therapy used to treat individuals 12 years of age and older with β-thalassemia who need regular blood transfusions. In individuals with TDT, γ-globin

production improves the α-globin to non-α-globin imbalance thereby reducing ineffective RBC production (erythropoiesis) and destruction (hemolysis) and increasing total hemoglobin levels, addressing the underlying cause of disease and eliminating the dependence on regular RBC transfusions.[15]

Zynteglo (betibeglogene autotemcel) is a one-time gene therapy product administered as a single dose. Each dose of Zynteglo is a customized treatment created using an individual's own cells (bone marrow stem cells) that are genetically modified to produce functional beta-globin (a hemoglobin component). This autologous hematopoietic stem cell-based gene therapy is indicated for the treatment of adult and pediatric individuals with β-thalassemia who require regular RBC transfusions.[16]

Requests for Casgevy (exagamglogene autotemcel) AND Zynteglo (betibeglogene autotemcel) *require review by a medical director*.

Coverage Determination

Refer all requests or questions regarding gene therapy treatments for beta thalassemia to the Corporate Transplant Department.

Phone	Fax	Email
1-866-421-5663	502-508-9300	transplant@humana.com

Casgevy (exagamglogene autotemcel) will be considered medically reasonable and necessary when the following indications are met[14]:

- Absence of limitations; **AND**
- Individual diagnosed with TDT, requiring at least 10 or more packed RBC transfusions per year in the previous 2 years; **AND**
- Individual is 12 through 65 years of age; **AND**
- Individual is a candidate for an allogeneic hematopoietic cell transplantation, but lack an available matched donor; **AND**
- Failure or intolerance of hydroxyurea (HU)

Zynteglo (betibeglogene autotemcel) will be considered medically reasonable and necessary when the following indications are met[16]:

- Absence of limitations**; AND**

- Individual diagnosed with TDT, requiring at least eight or more packed RBC transfusions per year in the previous 2 years; **AND**
- Individual is 4 through 65 years of age; **AND**
- Individual is a candidate for an allogeneic hematopoietic cell transplantation, but lack an available matched donor; **AND**
- Karnofsky performance status of greater than or equal to 80 (greater than or equal to 16 years of age) **OR** a Lansky performance status of greater than or equal to 80 (less than 16 years of age); **AND**
- Individual will receive 1 dose per lifetime; **AND**
- Individual will receive Zynteglo (betibeglogene autotemcel) at a certified treatment center

Coverage Limitations

Casgevy (exagamglogene autotemcel) AND Zynteglo (betibeglogene autotemcel) will not be considered medically reasonable and necessary if the following are present [15,16]:

- Clinically significant and active bacterial, fungal, parasitic or viral infection including hepatitis B or C (HBV, HCV) or human immunodeficiency virus (HIV); **OR**
- Inadequate bone marrow function defined by an absolute neutrophil count of less than 1000/µL (less than 500/µL for subjects on HU treatment) OR a platelet count less than 100,000/µL; **OR**
- Individual has desire to become pregnant/reproduce OR unwilling to use effective contraception; **OR**
- Individual is pregnant or breastfeeding; **OR**
- Renal impairment; **OR**
- Hepatic impairment; **OR**
- Severe iron overload affecting heart/liver function; **OR**
- Prior or current malignancy or immunodeficiency disorder (except previously treated, non-life threatening, cured tumors such as squamous cell carcinoma of the skin); **OR**
- Prior HSC transplant; **OR**
- Prior receipt of **ANY** gene therapy

These are considered experimental/investigational as they are not identified as widely used and generally accepted for any other proposed uses as reported in nationally recognized peer-reviewed medical literature published in the English language.

Coding Information

Any codes listed on this policy are for informational purposes only. Do not rely on the accuracy and inclusion of specific codes. Inclusion of a code does not guarantee coverage and/or reimbursement for a service or procedure.

CPT® Code(s)	Description	Comments
No code(s) identified		
CPT® Category III Code(s)	**Description**	**Comments**
No code(s) identified		
HCPCS Code(s)	**Description**	**Comments**
C9399	Unclassified drugs or biologicals	
J3490	Unclassified drugs	
J3590	Unclassified biologics	
ICD-10-PCS Code(s)	**Description**	**Comments**
XW133J8	Transfusion of Exagamglogene Autotemcel into Peripheral Vein, Percutaneous Approach, New Technology Group 8	
XW143J8	Transfusion of Exagamglogene Autotemcel into Central Vein, Percutaneous Approach, New Technology Group 8	

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Appendix

Appendix A - Karnofsky/Lansky Performance Status Scale Definitions Rating (%) Criteria

Karnofsky Scale (*greater than or equal to* 16 years of age)		**Lansky Scale** (*less than* 16 years of age)
Able to carry on normal activity; no special care is needed		
Normal health	100	Fully active
Minor symptoms	90	Minor restriction in physically strenuous play
Normal activity with some effort	80	Restricted in strenuous play, tires more easily, otherwise active
Unable to work, able to live at home, cares for most personal needs, a varying amount of assistance is needed		**Mild to moderate restriction**
Cares for self, unable to carry on normal activity or to do active work	70	Both greater restrictions of, and less time spent in active play
Requires occasional help with personal needs	60	Ambulatory up to 50% of time, limited active play with assistance/supervision
Requires considerable assistance and frequent medical care	50	Considerable assistance required for any active play, fully able to engage in quiet play
Unable to care for self, requires equivalent of institutional or hospital care, disease may be progressing rapidly		**Moderate to severe restriction**
Requires considerable assistance and medical care	40	Able to initiate quite activities
Severely disabled, in hospital	30	Needs considerable assistance for quiet activity
Very sick, active support needed	20	Limited to very passive activity initiated by others (e.g., television)
Moribund (near death)	10	Completely disabled, not even passive play

Change Summary

01/01/2025 New Policy