Oscar Clinical Guideline: Oxbryta (voxelotor) (PG114, Ver. 3)

# Oxbryta (voxelotor)



## Summary

Sickle cell disease (SCD) is a group of inherited disorders that affect the structure and function of red blood cells. In SCD, the body produces an abnormal form of hemoglobin, the protein in red blood cells that carries oxygen to the body's tissues. The underlying cause of SCD is a specific mutation in the beta globin gene, known as HbS, which results in the production of abnormal hemoglobin. This abnormal hemoglobin causes red blood cells to become stiff and sticky, forming a sickle or crescent shape. These sickle-shaped cells can block blood flow in small blood vessels, causing pain, tissue damage, and a variety of complications.

In all forms of SCD, at least one copy of the beta globin gene has the HbS mutation. The most common form of SCD is sickle cell anemia (HbSS), where both copies of the beta-globin genes have the HbS mutation. Other forms of SCD can result from a combination of the HbS mutation with other mutations in hemoglobin genes. SCD is most commonly found in people of African descent, but it also occurs in people of Hispanic, Middle Eastern, and Mediterranean descent.

Symptoms of SCD can vary widely, but common complications include acute and chronic pain, infections, organ damage, and stroke. Treatment for SCD generally focuses on managing symptoms and

preventing complications. This can include medications to manage pain and prevent infections, blood transfusions to increase oxygen supply to tissues, and bone marrow transplants in severe cases.

There are several drugs available to treat SCD. These include:

- Hydroxyurea: This medication is an oral chemotherapy drug that can increase the production of fetal hemoglobin, a type of hemoglobin that is not affected by the sickle cell mutation. By increasing the amount of fetal hemoglobin, hydroxyurea can help prevent sickling and reduce complications of SCD. It is typically used for people with moderate to severe disease.
- L-glutamine oral powder: This medication is a prescription powder that is taken orally to reduce the acute complications of sickle cell disease. It is approved for use in people with SCD who are 5 years of age and older.
- Voxelotor: This medication is an oral medication that can increase the oxygen-carrying capacity of hemoglobin, reducing sickling and improving oxygen delivery to tissues. It is approved for use in people with SCD who are 4 years of age and older.
- Crizanlizumab: This medication is an intravenous infusion that can reduce the frequency of pain crises in people with SCD. It works by blocking a molecule called P-selectin, which is involved in the adhesion of sickle cells to blood vessel walls. It is approved for use in people with SCD who are 16 years of age and older.

## Definitions

**"Beta-globin gene"** is a subunit of hemoglobin that is essential for carrying oxygen to the body.

**"Beta-thalassemia trait"** is an inherited blood disorder in which the body does not make hemoglobin (hgb) normally.

**"Capillary beds"** are a network of tiny branching blood vessels that form between the arteries and veins.

**"Hemoglobin (Hgb)"** is a protein inside red blood cells that carries oxygen from the lungs to the rest of the body.

**"Red blood cells (RBCs)"** are blood cells that contain hemoglobin (Hgb).

**"Reticulocyte"** is a red blood cell that is still developing.

**"Sickle Cell Disease (SCD)"** is a group of inherited red blood cells (RBCs) disorders.

**"Sickled red blood cell"** is when a red blood cell (RBC) becomes hard and sticky and looks like a C-shape.

**"VOC or Vaso-occlusive crisis"** is when sickled blood cells block blood flow to the point that tissues become deprived of oxygen causing pain and/or organ dysfunction that requires urgent treatment.

## Medical Necessity Criteria for Initial Authorization

The Plan considers **Oxbryta (voxelotor)** medically necessary when **ALL** of the following criteria are met:

1. The medication is being prescribed by or in consultation with a specialist with expertise in the diagnosis and management of sickle cell disease; ***AND***
2. The member is 4 years of age or older; ***AND***
3. The member has a confirmed diagnosis of sickle cell disease AND BOTH of the following:
    a. The member has experienced 1 or more sickle cell-related vaso-occlusive crisis within the previous 12 months; ***and***
    b. The member has a baseline hemoglobin (Hgb) between 5.5 and 10.5 g/dL; ***AND***
4. The member has documentation of ONE of the following:
    a. is currently being treated with and will continue treatment with hydroxyurea in conjunction with Oxbryta (voxelotor); ***or***
    b. is unable to use, or has tried and failed hydroxyurea therapy; ***AND***
5. Oxbryta (voxelotor) will not be used concomitantly with Adakveo (crizanlizumab); ***AND***
6. Oxbryta (voxelotor) is being prescribed within the manufacturer's published dosing guidelines or falls within dosing guidelines found in a compendia of current literature; ***AND***
7. Chart documentation and supporting laboratory test results are provided for review to substantiate the above listed requirements.

**If the above prior authorization criteria are met, Oxbryta (voxelotor) will be approved for 12 months.**

## Medical Necessity Criteria for Reauthorization

Reauthorization for 12 months will be granted for members 4 years of age or older with a confirmed diagnosis of sickle cell disease when chart documentation is provided showing **ALL** of the following criteria are met:

1. The member's condition has improved on Oxbryta treatment as demonstrated by at least **ONE** of the following:
    a. The member has an increase in hemoglobin (Hgb) by ≥ 1 g/dL from baseline; ***or***

b. The member has a decrease in indirect bilirubin from baseline; ***or***
c. The member has a decrease in percent reticulocyte count from baseline; ***or***
d. The member has experienced a reduction in sickle cell-related vaso-occlusive crisis; ***AND***

2. The member is currently receiving hydroxyurea **OR** the member is unable to use or has tried and failed hydroxyurea therapy***; AND***
3. Oxbryta (voxelotor) will not be used concomitantly with Adakveo (crizanlizumab); ***AND***
4. Oxbryta (voxelotor) is being prescribed within the manufacturer's published dosing guidelines or falls within dosing guidelines found in a compendia of current literature.

**Table 1: Oxbryta (voxelotor) Recommended Dosage**

| Use in Specific Populations | 12 Years and Older | 4 Years to Less Than 12 Years | | |
|---|---|---|---|---|
| | | 10 kg to less than 20 kg | 20 kg to less than 40 kg | 40 kg or greater |
| **without severe hepatic impairment** | 1,500 mg orally once daily | 600 mg | 900 mg | 1,500 mg |
| **with severe hepatic impairment (Child Pugh C)** | 1,000 mg orally once daily | 1,000 mg (two 500 mg tablets) ***or*** 900 mg (three 300 mg tablets for oral suspension ***or*** three 300 mg tablets) | 600 mg | 300 mg |
| **Concomitant Use of Strong CYP3A4 Inducer** | 2,500 mg orally once daily | 900 mg | 1,500 mg | 2,500 mg (five 500 mg tablets) ***or*** 2,400 mg (eight 300 mg tablets for oral suspension or eight 300 mg tablets) |
| **Concomitant Use of Moderate CYP3A4 Inducers** | 2,000 mg orally once daily | 900 mg | 1,200 mg | 2,000 mg (four 500 mg tablets) ***or*** 2,100 mg (seven 300 mg tablets for oral suspension or seven 300 mg tablets) |

## Experimental or Investigational / Not Medically Necessary

Oxbryta (voxelotor) for any other indication is considered not medically necessary by the Plan, as it is deemed to be experimental, investigational, or unproven.

## References


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## Clinical Guideline Revision / History Information

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