Medical Drug Clinical Criteria

Subject:	Nulibry (fosdenopterin)		
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Overview

This document addresses the use of Nulibry (fosdenopterin), approved by the Food and Drug Administration (FDA) to reduce the risk of mortality in individuals with molybdenum cofactor deficiency (MoCD) Type A.

Molybdenum cofactor deficiency (MoCD) is a rare condition characterized by a genetic defect in the molybdenum cofactor biosynthetic pathway. There are several forms of MoCD which have the same presentation but are distinguished by their genetic cause. Type A is the most common form and is caused by a mutation in the molybdenum cofactor synthesis gene 1 (*MOCS1)*, leading to the inability to synthesize cyclic pyranopterin monophosphate (cPMP) and the accumulation of sulfites in blood and urine. Individuals present with symptoms during the first few days of life including seizures, exaggerated startle response, axial hypotonia, limb hypertonia and lethargy. MoCD usually leads to severe disability and early death.

Nulibry is cPMP substrate replacement therapy administered by daily intravenous infusion. Based on unpublished data from the FDA label, the efficacy of Nulibry was assessed in a combined analysis of 13 patients from 3 clinical studies. These studies confirm diagnosis of MoCD type A via genetic testing along with clinical and biochemical signs and symptoms.

Clinical Criteria

When a drug is being reviewed for coverage under a member's medical benefit plan or is otherwise subject to clinical review (including prior authorization), the following criteria will be used to determine whether the drug meets any applicable medical necessity requirements for the intended/prescribed purpose.

Nulibry (fosdenopterin)

Initial requests for Nulibry (fosdenopterin) may be approved if the following criteria are met:

I. Individual has a diagnosis of molybdenum cofactor deficiency (MoCD) type A;

AND

II. Documentation is provided that diagnosis has been verified by *MOCS1* gene mutation;
OR
III. Genetic testing is in process and presumptive diagnosis has been verified by (NCT02629393):
   A. Clinical signs and symptoms (including but not limited to seizures, exaggerated startle response, axial hypotonia, limb hypertonia, feeding difficulties); **AND**
   B. Biochemical signs and symptoms (including elevated urinary sulfite or S-sulphocysteine (SSC), elevated xanthine in urine or blood, decreased uric acid in urine or blood).

Continuation requests for Nulibry (fosdenopterin) may be approved if the following criteria are met:

I. Documentation is provided that individual has a diagnosis of molybdenum cofactor deficiency (MoCD) type A verified by *MOCS1* gene mutation; **AND**
II. There is clinically significant improvement in clinical and biochemical signs and symptoms of disease (including but not limited to decrease in seizure activity, improvement in alertness/responsiveness,

improvement in feeding, decreased urinary sulfite or S-sulphocysteine (SSC), decreased xanthine in urine or blood, increased uric acid in urine or blood).

Nulibry (fosdenopterin) may not be approved for the following:

I. Individual with molybdenum cofactor deficiency (MoCD) type B or type C; **OR**
II. May not be approved when the above criteria are not met and for all other indications.

Initial Approval Duration: 4 months
Continuation Approval Duration: 1 year

Quantity Limits

Nulibry (fosdenopterin) Quantity Limit

Drug	Limit
Nulibry (fosdenopterin) 9.5 mg vial	Up to 0.9 mg/kg once daily

Coding

The following codes for treatments and procedures applicable to this document are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

HCPCS

J3490	Unclassified drugs (when specified as (fosdenopterin) [Nulibry]
J3590	Unclassified biologics (when specified as (fosdenopterin) [Nulibry]
C9399	Unclassified drugs or biologicals (when specified as (fosdenopterin) [Nulibry] (HOSPITAL OUTPATIENT ONLY)

ICD-10 Diagnosis

All diagnosis pend

Document History

Revised: 12/11/2023
Document History:

- 12/11/2023 – Annual Review: Wording and formatting changes. Coding Reviewed: No changes.
- 12/12/2022 – Annual Review: Wording and formatting changes. Coding Reviewed: No changes.
- 12/13/2021 – Annual Review: Clarify diagnosis criteria. Coding Reviewed: No changes.
- 3/2/2021 – Select Review: Add new criteria and quantity limit for Nulibry. Coding Reviewed: Added J3490, J3590, C9399. All diagnosis pend.

References

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2. DrugPoints® System [electronic version]. Truven Health Analytics, Greenwood Village, CO. Updated periodically.
3. Lexi-Comp ONLINE™ with AHFS™, Hudson, Ohio: Lexi-Comp, Inc. Updated periodically.
4. Origin Biosciences. Study of ORGN001 (Formerly ALXN1101) in Neonates, Infants and Children With Molybdenum Cofactor Deficiency (MOCD) Type A. NLM Identifier: NCT02629393. Last updated: October 17, 2023. Available at: https://www.clinicaltrials.gov/ct2/show/NCT02629393?term=02629393&draw=2&rank=1. Accessed: December 2, 2023.
5. Schwahn BC, Van Spronsen FJ, Belaidi AA, et al. Efficacy and safety of cyclic pyranopterin monophosphate substitution in severe molybdenum cofactor deficiency type A: a prospective cohort study. *Lancet*. 2015 Nov 14;386(10007):1955-63.

6. Shellhaas R. Etiology and prognosis of neonatal seizures. Last updated: July 29, 2022. In: UpToDate, Post TW (d), UpToDate, Waltham, MA. Accessed: December 2, 2023.

Federal and state laws or requirements, contract language, and Plan utilization management programs or polices may take precedence over the application of this clinical criteria.