Vyondys 53® (Golodirsen) (for Pennsylvania Only)

Policy Number: CSPA2023D0086D
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Instructions for Use

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Commercial Policy
• Vyondys 53™ Golodirsen

Application

This Medical Benefit Drug Policy only applies to the state of Pennsylvania.

Coverage Rationale

Vyondys 53 may be covered for the treatment of Duchenne muscular dystrophy (DMD) in patients who meet all of the following criteria:

- For initial therapy, all of the following:
  - Diagnosis of Duchenne muscular dystrophy by, or in consultation with, a neurologist with expertise in the diagnosis of DMD; and
  - Submission of medical records (e.g., chart notes, laboratory values) confirming the mutation of the DMD gene is amenable to exon 53 skipping;[1,2] and
  - Submission of medical records documenting a baseline evaluation, including a standardized assessment of motor function by a neurologist with experience in treating Duchenne muscular dystrophy, prior to beginning golodirsen therapy; and
  - Vyondys 53 is prescribed by, or in consultation with, a neurologist with expertise in the treatment of DMD; and
  - Vyondys 53 dosing for DMD is in accordance with the United States Food and Drug Administration approved labeling; and
  - Vyondys 53 is not used concomitantly with other exon skipping therapies for DMD; and
  - Initial authorization will be for 6 months
- For continuation therapy, all of the following:
  - Vyondys 53 is prescribed by, or in consultation with, a neurologist with expertise in the treatment of DMD; and
  - Documentation of an evaluation with an assessment of motor function ability by a neurologist with experience in treating Duchenne muscular dystrophy; and
  - Vyondys 53 dosing for DMD is in accordance with the United States Food and Drug Administration approved labeling; and
  - Vyondys 53 is not used concomitantly with other exon skipping therapies for DMD; and
  - Reauthorization will be for no more than 12 months

Vyondys 53 will not be covered for other forms of muscular dystrophy.

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by federal, state, or contractual requirements and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

HCPCS Code	Description
J1429	Injection, golodirsen, 10 mg

Diagnosis Code	Description
G71.01	Duchenne or Becker muscular dystrophy

Background

Duchenne muscular dystrophy (DMD) is an X-linked disease that affects 1 in 3,600 – 6,000 live male births. DMD occurs as a result of mutations (mainly deletions) in the dystrophin gene. These mutations lead to an absence or a defect of the protein, dystrophin, resulting in progressive muscle degeneration, leading to loss of ambulation and additional respiratory, orthopedic, and cardiac complications. If left untreated, mean age of death is approximately 19 years of age.[2-4]

Vyondys (golodirsen) is an antisense oligonucleotide of the phosphorodiamidate morpholino oligomer (PMO) subclass. PMOs are synthetic molecules in which the five-membered ribofuranosyl rings found in natural DNA and RNA are replaced by a six-membered morpholino ring. Each morpholino ring is linked through an uncharged phosphorodiamidate moiety rather than the negatively charged phosphate linkage that is present in natural DNA and RNA. Each phosphorodiamidate morpholino subunit contains one of the heterocyclic bases found in DNA (adenine, cytosine, guanine, or thymine).[1]

Golodirsen is designed to bind to exon 53 of dystrophin pre-mRNA, resulting in exclusion of this exon during mRNA processing in patients with genetic mutations that are amenable to exon 53 skipping. Approximately 8% of DMD patients have out-of-frame deletion mutations amenable to exon 53 skipping. Exon skipping is intended to allow for production of an internally truncated dystrophin protein.[1]

Eteplirsen (Exondys 51) is the first PMO approved by the US Food and Drug Administration for treatment of DMD patients with confirmed genetic mutations amenable to exon 51 skipping. Approximately 13% of DMD patients have out-of-frame deletion mutations amenable to exon 51 skipping. This indication was approved under accelerated approval based on an increase in dystrophin in skeletal muscle observed in some patients treated with eteplirsen A clinical benefit of eteplirsen has not been established. Continued approval for this indication may be contingent upon verification of a clinical benefit in confirmatory trials.[5]

Clinical Evidence

Vyondys 53 is indicated for the treatment of Duchenne muscular dystrophy (DMD) in patients who have a confirmed mutation of the DMD gene that is amenable to exon 53 skipping.[1]

The SKIP-NMD trial of golodirsen is a US-based, blinded, placebo-controlled, dose-escalation two-part Phase I/II RCT of male patients aged six to 15 years with a DMD diagnosis and DMD gene amenable to exon 53 skipping. Patients age 6 to 15 years with stable cardiac and pulmonary function, and on a stable dose of corticosteroids for at least six months were included. Additional inclusion criteria included a baseline six-minute walk test (6MWT) of greater than 250m, a North Star Ambulatory Assessment (NSAA) score of greater than 17 or a rise time of less than 7 seconds. In part one, 12 patients were randomized to receive once-weekly intravenous infusions at escalating doses of 4, 10, 20, 30 mg/kg of golodirsen or matching placebo for 12

weeks. Part two consists of an open-label period of all patients from part one and 13 newly recruited patients who are receiving once-weekly infusions of 30 mg/kg of golodirsen for up to 168 weeks.

Part one of the SKIP-NMD trial assessed safety and tolerability. In part two, the primary endpoints are change from baseline in 6MWT at 144 weeks and change in dystrophin protein levels at 48 weeks. Secondary endpoints include drug pharmacokinetics, change from baseline in FVC percent predicted, and change from baseline in dystrophin intensity at 144 weeks.

At the time of pre-planned interim analysis, data from baseline and Week 48 muscle biopsies, exon 53 skipping, and dystrophin localization were available for 25 patients on golodirsen. Mean 6MWT distance at baseline was 405.8 m for golodirsen-treated patients and declined by 26.1, 64.6, and 99.0 m at weeks 48, 96, and 144, respectively. Per a post hoc ambulation analysis, control patients' 6MWT distance declined by a mean of 181.4 m [standard deviation (SD), 151.6; range, −401 to 56] after 3 years compared with baseline. In contrast, golodirsen-treated patients had a mean decline from baseline of 99.0 m (SD, 123.8; range, −368 to 144) after 3 years ($p = 0.067$ between groups). This difference emerged over time, as no difference between treated and untreated patients was observed at the time points before year 3. Among natural history controls, 5 of 19 patients (26%) had lost ambulation over 3 years, compared with 2 of 25 (9%) of those who received golodirsen ($p = 0.21$). Mean baseline of dystrophin in the trial was reported to be 0.095% of normal. At 48 weeks, the mean level of dystrophin had increased to 1.019% of normal resulting in an absolute increase of 0.918% of normal ($p < 0.001$). A clinically meaningful change in level of dystrophin has not yet been established in humans. As such, the clinical significance of these results is not clear. Among individual patients, dystrophin levels at Week 48 ranged from 0.09% to 4.30%.[6-8]

ESSENCE is an ongoing 96-week, Phase 3, double-blind, placebo controlled, randomized clinical trial that will evaluate the efficacy of golodirsen and casimersen in DMD patients with out-of-frame deletion mutations amenable to skipping exon 53 and exon 45, respectively. The study will enroll 222 boys from 7 to 13 years of age with genotypically confirmed DMD and 6MWT ≥ 300 m and ≤ 450 m. The primary endpoint is the change from baseline to Week 96 in 6MWT.

Golodirsen has not been studied in DMD that is not amenable to exon 53 skipping, nor in other forms of muscular dystrophy (e.g., Becker muscular dystrophy).[1]

U.S. Food and Drug Administration (FDA)

This section is to be used for informational purposes only. FDA approval alone is not a basis for coverage.

Vyondys 53 is indicated for the treatment of Duchenne muscular dystrophy (DMD) in patients who have a confirmed mutation of the DMD gene that is amenable to exon 53 skipping. This indication is approved under accelerated approval based on an increase in dystrophin in skeletal muscle observed in some patients treated with Vyondys 53. Continued approval for this indication may be contingent upon verification of a clinical benefit in confirmatory trials.[1]

References

1. Vyondys 53 [package insert]. Cambridge, MA: Sarepta Therapeutics, Inc. February 2021.
2. Bushby K, Finkel R, Birnkrant DJ, Case LE, Clemens PR, Cripe L, et al. Diagnosis and management of Duchenne muscular dystrophy, part 1: diagnosis, and pharmacological and psychosocial management. Lancet Neurol; 2010 Jan; 9(1):77 93.
3. Bushby K, Finkel R, Birnkrant DJ, et al. (2010) Diagnosis and management of Duchenne muscular dystrophy, part 2: implementation of multidisciplinary care. Lancet Neurol; 2010 Jan; 9(2):177-189.
4. Birnkrant DJ, Bushby K, Bann CM, et al. Diagnosis and management of Duchenne muscular dystrophy, part 1: diagnosis, and neuromuscular, rehabilitation, endocrine, and gastrointestinal and nutritional management. Lancet Neurol. 2018;17(3):251-267. doi: 10.1016/S1474-4422(18)30024.
5. Exondys 51 [package insert]. Cambridge, MA: Sarepta Therapeutics, Inc, January 2022.
6. Frank DE, Mercuri E, Servais, L, et al. Golodirsen induces exon skipping leading to sarcolemmal dystrophin expression in patients with genetic mutations amenable to exon 53 skipping. Poster presented at: Annual Clinical Genetics Meeting of the American College of Medical Genetics and Genomics; April 2-6, 2019; Seattle, WA.

7. Muntoni F, Frank DE, Morgan J, et al. Golodirsen induces exon skipping leading to sarcolemmal dystrophin expression in patients with genetic mutations amenable to exon 53 skipping [abstract]. Neuromuscul Disord. 2018;28:S5. Abstract D01.
8. Muntoni F, Frank DE, Sardone V, et al. SRP-4053 induces exon skipping leading to sarcolemmal dystrophin expression in Duchenne muscular dystrophy patients amenable to exon 53 skipping. Poster presented at: 22nd International Annual Congress of the World Muscle Society; October 3-7 2017; Saint Malo, France. https://clinicaltrials.gov/ct2/show/NCT02500381?term=golodirsen&cond=Duchenne+Muscular+Dystrophy&rank=3. Accessed February 1, 2022.
9. Study of SRP-4045 and SRP-4053 in DMD Patients (ESSENCE). https://clinicaltrials.gov/ct2/show/NCT02500381?term=golodirsen&cond=Duchenne+Muscular+Dystrophy&rank=3. Accessed February 4, 2023.
10. Institute for Clinical and Economic Review (ICER). Deflazacort, eteplirsen, and golodirsen for Duchenne muscular dystrophy: Effectiveness and value: Evidence Report. ICER_DMD-Final-Report_081519-2.pdf. July 11, 2019. Accessed February 4, 2023.
11. Servais L, Mercuri E, Straub V, et al. Long-Term Safety and Efficacy Data of Golodirsen in Ambulatory Patients with Duchenne Muscular Dystrophy Amenable to Exon 53 Skipping: A First-in-human, Multicenter, Two-Part, Open-Label, Phase 1/2 Trial. Nucleic Acid Ther. 2022;32(1):29-39. doi:10.1089/nat.2021.0043.

Policy History/Revision Information

Date	Summary of Changes
06/01/2023	**Coverage Rationale** • Revised coverage criteria for continuation of therapy; removed criterion requiring serial monitoring of renal function (e.g., serum creatinine, proteinuria, serum cystatin C, 24-hour urine collection, etc.) has failed to identify evidence of renal toxicity with Vyondys 53 **Supporting Information** • Updated *Background*, *Clinical Evidence*, and *References* sections to reflect the most current information • Archived previous policy version CSPA2022D0086C

Instructions for Use

This Medical Benefit Drug Policy provides assistance in interpreting UnitedHealthcare standard benefit plans. When deciding coverage, the federal, state or contractual requirements for benefit plan coverage must be referenced as the terms of the federal, state or contractual requirements for benefit plan coverage may differ from the standard benefit plan. In the event of a conflict, the federal, state or contractual requirements for benefit plan coverage govern. Before using this policy, please check the federal, state or contractual requirements for benefit plan coverage. UnitedHealthcare reserves the right to modify its Policies and Guidelines as necessary. This Medical Benefit Drug Policy is provided for informational purposes. It does not constitute medical advice.

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