CARECONTINUUM™

UTILIZATION MANAGEMENT MEDICAL POLICY

POLICY: Enzyme Replacement Therapy – Revcovi Utilization Management Medical Policy
- Revcovi® (elapegademase-lvlr intramuscular injection – Chiesi)

REVIEW DATE: 12/03/2025

OVERVIEW

Revcovi, a recombinant adenosine deaminase, is indicated for the treatment of **adenosine deaminase severe combined immune deficiency (ADA-SCID)** in pediatric and adult patients.[1]

Disease Overview

ADA-SCID is an ultra-rare, autosomal recessive genetic disorder of purine metabolism affecting lymphocyte development, viability, and function.[1,2] It is estimated to occur in 1:200,000 to 1:1,000,000 live births. ADA is a purine salvage enzyme which metabolizes deoxyadenosine (dAdo) and adenosine (Ado) into deoxyinosine and inosine, respectively.[3] When ADA is deficient, dAdo accumulates in intracellular and extracellular compartments, along with its metabolite, deoxyadenosinetriphosphate (dATP). The buildup of both dAdo and dATP negatively impacts lymphocyte development and function by impeding DNA replication and repair, inducing apoptosis, and inhibiting lymphocyte activation.

There are a variety of phenotypes of ADA deficiency; ADA-SCID is the most severe and typically diagnosed before 1 year of age.[2] Infants with typical ADA-SCID have failure to thrive and opportunistic infections associated with marked depletion of B, T, and NK lymphocytes. Manifestations include persistent diarrhea, extensive dermatitis, recurrent pneumonia, and other life-threatening illnesses caused by opportunistic infections. Growth failure and other physical manifestations, including hepatic and neurologic abnormalities, may also be present. Without treatment, patients with ADA-SCID rarely survive beyond 1 to 2 years of age.

Guidelines

According to a consensus statement for management of ADA-SCID (2018) and updated guidelines in 2023, diagnosis is usually established by demonstrating absent or very low (< 1 % of normal) ADA catalytic activity, accompanied by elevated Ado or dAdo in plasma, urine, or dried blood spots.[3,4] This should be followed by genetic testing to confirm bi-allelic mutations in the *ADA* gene. Enzyme replacement therapy (ERT) is recommended by the consensus panel for all patients newly diagnosed with ADA-SCID as an immediate stabilizing measure. The ideal duration of ERT has not been established. The consensus recommends that most patients use ERT as a "bridge" for a few months to approximately 2 years, prior to undergoing curative therapy with a hematopoietic stem cell transplant (HSCT) or hematopoietic stem cell gene therapy. Long-term use of ERT has declined in the past 30 years and has not been systematically studied. Lymphocyte counts and function may deteriorate over time, contributing to increased risk of infections and malignancy. Therefore, ERT longer than 5 to 8 years should be avoided and employed on a continuous basis only when neither HSCT nor gene therapy have been available or effective. The consensus also suggests ERT use for patients with later-onset phenotypes who may not be ideal candidates for curative processes.

Dosing Considerations

Dosing is provided in the Prescribing Information for patients who are naïve to Adagen® (pegademase bovine injection for intramuscular use), as well as for patients who are Adagen-experienced.[1] For Adagen-naïve patients, the starting weekly dose of Revcovi is 0.4 mg/kg (divided into two doses) by the

intramuscular route. This dose is continued for at least 12 to 24 weeks until immune reconstitution is achieved. Thereafter, the dose may be gradually adjusted down for maintenance (adjusted based on laboratory values). Lower starting doses are generally recommended for Adagen-experienced patients; the Prescribing Information provides a conversion factor for calculating the Revcovi dose based on the prior Adagen dose. The Prescribing Information notes that the optimal long-term dose and schedule of administration are individualized; total weekly doses may be divided into multiple intramuscular injections during a week. The dosing provided in this policy is intended to provide a sufficient maximum weekly dose for the majority of patients; exceptions will be reviewed by a clinician on a case-by-case basis.

POLICY STATEMENT

Prior Authorization is recommended for medical benefit coverage of Revcovi. Approval is recommended for those who meet the **Criteria** and **Dosing** for the listed indication. Extended approvals are allowed if the patient continues to meet the Criteria and Dosing. Requests for doses outside of the established dosing documented in this policy will be considered on a case-by-case basis by a clinician (i.e., Medical Director or Pharmacist). All approvals are provided for the duration noted below. Because of the specialized skills required for evaluation and diagnosis of patients treated with Revcovi, approval requires it to be prescribed by or in consultation with a physician who specializes in the condition being treated.

Automation: None.

RECOMMENDED AUTHORIZATION CRITERIA

Coverage of Revcovi is recommended in those who meet the following criteria:

FDA-Approved Indication

1. **Adenosine Deaminase Severe Combined Immunodeficiency (ADA-SCID).** Approve for 1 year if the patient meets BOTH of the following (A and B):
   - **A)** Patient has a diagnosis of ADA-SCID confirmed by ONE of the following (i or ii):
     - **i.** At baseline (i.e., prior to initiating enzyme replacement therapy), the patient has had absent or very low (< 1% of normal) adenosine deaminase (ADA) catalytic activity; OR
     - **ii.** Patient has had molecular genetic testing confirming bi-allelic pathogenic variants in the *ADA* gene; AND
   - **B)** The medication is prescribed by or in consultation with an immunologist, hematologist/oncologist, or physician who specializes in ADA-SCID or related disorders.

   Dosing. Approve up to a maximum weekly dose of 0.4 mg/kg by the intramuscular route.
   Note: Doses may be divided into multiple injections as long as weekly cumulative maximum of 0.4 mg/kg is not exceeded.

CONDITIONS NOT RECOMMENDED FOR APPROVAL

Coverage of Revcovi is not recommended in the following situations:

1. Coverage is not recommended for circumstances not listed in the Recommended Authorization Criteria. Criteria will be updated as new published data are available.

REFERENCES

1. Revcovi® injection [prescribing information]. Cary, NC: Chiesi; August 2022.
2. Hershfield M. GeneReviews [Internet]. Updated March 7, 2024. Available at: https://www.ncbi.nlm.nih.gov/books/NBK1483/. Accessed on November 26, 2025.
3. Kohn DB, Hershfield MS, Puck JM, et al. Consensus approach for the management of severe combined immune deficiency caused by adenosine deaminase deficiency. *J Allergy Clin Immunol*. 2019;143(3):852-863.
4. Grunebaum E, Booth C, Cuvelier GDE, et al. Updated Management Guidelines for Adenosine Deaminase Deficiency. *J Allergy Clin Immunol Pract.* 2023 Jun;11(6):1665-1675.

HISTORY

Type of Revision	Summary of Changes	Review Date
Annual Revision	No criteria changes.	12/13/2023
Annual Revision	**Adenosine Deaminase Severe Combined Immunodeficiency (ADA-SCID)**: For diagnosis established by genetic testing, the term "mutation" was rephrased to "pathogenic variant."	12/11/2024
Annual Revision	No criteria changes.	12/03/2025