Protocol for Skysona® (elivaldogene autotemcel)

Approved January 2023

Background: *Adrenoleukodystrophy (ALD) is a rare, X-linked, metabolic disorder caused by a mutation in the ABCD1 gene which results in the toxic buildup of very long-chain fatty acids (VLCFA) in the brain and spinal cord. CALD is the most severe and neurodegenerative form of this condition.*

Skysona *is indicated to slow the progression of neurologic dysfunction in boys 4-17 years of age with early, active cerebral adrenoleukodystrophy (CALD).*
This indication is approved under accelerated approval based on 24-month Major Functional Disability (MFD)-free survival. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial(s)

Criteria for approval:

1. Patient is male, and 4 -17 years of age
2. CALD diagnosis is confirmed by genetic testing (showing ABCD1 gene mutation); **AND**
3. There is evidence of early active CALD defined by **ALL** of the following:
    a) Elevated very long chain fatty acids (VLCFA) values
    b) Loes score between 0.5 and 9 (inclusive) on the 34-point scale
    c) Gadolinium enhancement (GdE+) on MRI of demyelinating lesions
    d) Neurologic function score (NFS) ≤1; **AND**
4. Patient is a candidate for hematopoietic stem cell transplantation (HSCT), but does NOT have access to a known and available human leukocyte antigen (HLA)-matched sibling donor; **AND**
5. Medication is prescribed by or in consultation with a neurologist, endocrinologist, hematologist and/or oncologist with expertise in the treatment of CALD; **AND**
6. Patient will undergo hematopoietic stem cell (HSC) mobilization followed by apheresis to obtain CD34+ cells for Skysona manufacturing; **AND**
7. Patient has not received prior allogeneic HSCT for CALD; **AND**
8. Patient is not on anti-retroviral medications for at least one month prior to initiating medications for stem cell mobilization and for the expected duration for elimination of the medications, and until all cycles of apheresis are completed

9. Perform screening for hepatitis B virus (HBV), hepatitis C virus (HCV), human immunodeficiency virus 1 & 2 (HIV-1/HIV-2) and Human T-lymphotropic virus 1 & 2 (HTLV-1/HTLV-2) in accordance with clinical guidelines before collection of cells for manufacturing
10. Patient has been counselled regarding need for lifelong monitoring for hematological malignancies
11. Medication will only be approved for a single one-time dose
12. Medication is prescribed in accordance with Food and Drug Administration (FDA) established indication and dosing regimens or in accordance with medically appropriate off-label indication and dosing according to American Hospital Formulary Service, Micromedex, Clinical Pharmacology, Wolters Kluwer Lexi-Drugs (Lexicomp), national guidelines, or other peer-reviewed evidence

Approval Duration: one-time dose

References:

1. Skysona (elivaldogene autotemcel) [prescribing information]. Somerville, MA: bluebird bio. September 2022.
2. National Organization for Rare Disorders (NORD). X-linked adrenoleukodystrophy. Last updated November 13, 2019. Accessed October 16,2022. https://rarediseases.org/rarediseases/adrenoleukodystrophy/
3. Clinical Pharmacology® Gold Standard Series [Internet database]. Tampa FL. Elsevier 2019. Updated periodically