

November 10, 2020

Bamlanivimab (LY-CoV555)

- EMERGENCY USE AUTHORIZATION -

Mechanism of action¹: Bamlanivimab is a neutralizing IgG1 monoclonal antibody that binds to the receptor binding domain of the spike protein of SARS-CoV-2 to reduce viral load, ameliorate symptoms and prevent hospitalization.

Current Status^{1,2}: Bamlanivimab is an investigational drug and is not currently FDA-approved for any indication. On November 9th, 2020, the FDA issued an Emergency Use Authorization (EUA) for bamlanivimab for use in the outpatient setting to treat mild to moderate COVID-19 in adults and pediatric patients with positive results of direct SARS-CoV-2 viral testing who are 12 years of age and older weighing at least 40 kg, and who are at high risk for progressing to severe COVID-19 and/or hospitalization.

High risk is defined as patients who meet at least one of the following criteria:

- Have a body mass index (BMI) ≥ 35
- Have chronic kidney disease
- Have diabetes
- Have immunosuppressive disease
- Are currently receiving immunosuppressive treatment
- Are ≥ 65 years of age
- Are ≥ 55 years of age **AND** have: cardiovascular disease, OR hypertension, OR chronic obstructive pulmonary disease/other chronic respiratory disease.
- Are 12–17 years of age **AND** have: BMI ≥ 85 th percentile for their age and gender based on CDC growth charts, OR sickle cell disease, OR congenital or acquired heart disease, OR neurodevelopmental disorders, OR a medical-related technological dependence or positive pressure ventilation (not related to COVID-19), OR asthma, reactive airway or chronic respiratory disease requiring daily medication.

Benefit with bamlanivimab has not been observed in patients *hospitalized* due to COVID-19. Monoclonal antibodies, such as bamlanivimab, may be associated with worse clinical outcomes when administered to hospitalized patients with COVID-19 requiring high flow oxygen or mechanical ventilation.

Therefore, bamlanivimab is **not authorized** for use in the following patient populations:

- Adults or pediatric patients who are *hospitalized* due to COVID-19, or
- Adults or pediatric patients who *require oxygen therapy* due to COVID-19, or
- Adults or pediatric patients who *require an increase in baseline oxygen flow rate* due to COVID-19 in those patients on chronic oxygen therapy due to underlying non-COVID-19-related comorbidity.

Availability^{3,4}: The U.S. Department of Health and Human Services (DHHS) will allocate initial doses of bamlanivimab to state and territorial health departments and jurisdictions (including the Indian Health Service). More information is available on the DHHS [allocation dashboard](#).

Efficacy & Safety^{2,5}: Results derived from a planned interim analysis of the BLAZE-1 study (NCT04427501)

*SARS-CoV-2 Neutralizing Antibody LY-CoV555 in Outpatients with COVID-19 - BLAZE-1 Study

Design: Randomized, double-blind, placebo-controlled Phase 2 clinical trial of bamlanivimab vs placebo

Patients: 452 outpatients with recently diagnosed, mild to moderate COVID-19 at 41 centers in the U.S.

1^o Outcome: Change from baseline in viral load at Day 11; 700 mg dose was not different vs. placebo ($p=0.38$)

2^o Outcome: Hospital or ER visits within 28 days after treatment; 1 event (700 mg) vs. 9 events (placebo)

Dosing & Administration²: Bamlanivimab may only be administered in settings in which health care providers have immediate access to medications to treat a severe infusion reaction, such as anaphylaxis, and the ability to activate the emergency medical system, as necessary.

- A single IV infusion of 700 mg administered as soon as possible after positive viral test for SARS-CoV-2 and within 10 days of symptom onset.
- Bamlanivimab is available as concentrated solution and must be diluted prior to administration. Administer bamlanivimab 700 mg via IV infusion over at least 60 minutes via pump or gravity.
- Monitor patients during infusion and observe patients for at least 1 hour after infusion is complete.

Product Administration Logistics¹:

Staffing requirements may vary by state. Follow your local requirements when determining the staff needed for your infusion site of care. Infusion sites of care should have appropriately trained medical staff to administer infusion treatments and identify and manage potential adverse reactions.

To ensure the safest care environment for patients receiving bamlanivimab antibody infusion;

- Healthcare staff should utilize proper PPE in accordance with current CDC guidance.
- Drug infusion should be prepared by a healthcare professional trained in IV admixture preparation.
- Infusion administration/monitoring should be performed by a properly trained healthcare professional.
- Infusion monitoring and post-infusion observation should include vital sign monitoring as well as assessment for and treatment of infusion-related reactions.
- COVID-19 cleaning and disinfection should be performed by appropriately trained staff.

Warnings/Cautions²: Infusion-related reactions have been observed with administration of bamlanivimab (2%) and may include: fever, chills, nausea, headache, bronchospasm, hypotension, angioedema, throat irritation, rash including urticaria, pruritus, myalgia, and dizziness. If an infusion-related reaction occurs, consider slowing or stopping the infusion and administer appropriate medications and/or supportive care.

Adverse Drug Events^{2,5}: Dizziness (3%), headache (3%) and nausea (3%) were most commonly reported adverse events in the BLAZE-1 study (700 mg dose) and were not markedly different from placebo. Additionally, adverse events occurred in 23% bamlanivimab-treated subjects and 26% of placebo-treated subjects. Serious adverse events were rare and not significantly different between groups.

Mandatory Requirements for bamlanivimab use under the EUA²:

- Use bamlanivimab only in authorized patient populations described above.
- Communicate to patients or parents/caregivers, as age appropriate, information consistent with the “Fact Sheet for Patients, Parents and Caregivers” prior to the patient receiving bamlanivimab. Healthcare providers (to the extent practicable given the circumstances of the emergency) must document in the patient’s medical record that the patient/caregiver has been:
 - Given the “Fact Sheet for Patients, Parents and Caregivers,”
 - Informed of alternatives to receiving authorized bamlanivimab, and
 - Informed that bamlanivimab is an unapproved drug that is authorized for use under this EUA.
- Patients with known hypersensitivity to any ingredient of bamlanivimab must not receive bamlanivimab.
- The prescribing provider is responsible for mandatory reporting of all medication errors and serious adverse events potentially related to bamlanivimab treatment within 7 calendar days from onset of event.
 - *Should include the words “use of bamlanivimab was under an EUA” in the “Describe Event” section.*
 - *Should include the words “Indian Health Service” in the description or reporter section (section G).*
 - Information on the FDA MedWatch program can be found on the [IHS Pharmacovigilance website](#).

References:

1. U.S. Food and Drug Administration. Letter of Authorization. [Emergency Use Authorization \(EUA\) of bamlanivimab](#).
2. U.S. Food and Drug Administration. Fact Sheet for Health Care Providers. [Emergency Use Authorization \(EUA\) of bamlanivimab](#).
3. U.S. Department of Health and Human Services (DHHS). [HHS Press Release](#). November 10, 2020.
4. U.S. DHHS. Office of the Assistant Secretary for Preparedness and Response. Public Health Emergency. [Bamlanivimab](#). November 10, 2020.
5. Chen P, et al. [SARS-CoV-2 Neutralizing Antibody LY-CoV555 in Outpatients with COVID-19](#). *NEJM*. Oct 28, 2020. DOI: 10.1056/NELMoa2029849