These Clinical Guidelines have been created using resources that were current as of the "Reviewed" date noted at the beginning of the document. Clinicians should refer to the manufacturer's Prescribing Information (or equivalent) for the most up-to-date information. While CarepathRx has published these Clinical Guidelines after a close review of available literature and a clinical review process, given the evolving nature and complexity of modern pharmaceutical products, CarepathRx does not and cannot warrant or guarantee that these Clinical Guidelines reflect the objectively best or highest standard of care at any given time.

Nothing within these Clinical Guidelines is intended to supersede or interfere with any individual clinician's decision-making or professional judgment with respect to either (1) prescribing or dispensing the drug or product in question or (2) the overall treatment plan for an individual patient.

Ibalizumba-uiyk (Trogarzo) Clinical Guideline for Home Intravenous Therapy

Section: Clinical Guideline
Compliance: ACHC Infusion Pharmacy
ACHC Standards: N/A
URAC Standards: N/A
Policy ID: CG024
Effective: 12/1/21
Reviewed: 5/1/22
Revised: 4/1/25
Approved by, Title and Date Approved: Kathleen Patrick, President, 12/1/21, 5/1/22, 4/1/25

I. BACKGROUND

Ibalizumab-uiyk (Trogarzo®) is a CD4-directed post-attachment HIV-1 inhibitor that is indicated in combination with other antiretroviral(s) for the treatment of human immunodeficiency virus type 1 (HIV-1) infection in heavily treatment-experienced adults with multidrug resistant HIV-1 infection failing their current antiretroviral regimen. Ibalizumab blocks HIV-1 from infecting the $CD4^+$ T cells by binding to domain 2 of CD4 and interfering with post-attachment steps required for the entry of HIV-1 virus particles into host cells and preventing the viral transmission that occurs via cell-cell fusion. In a phase 3 clinical trial, 43% of patients treated with Trogarzo® achieved an undetectable viral load after 25 weeks of treatment.

II. PATIENT ACCEPTANCE CRITERIA

A. All candidates for home care service must be evaluated by the clinician(s) and deemed appropriate to receive home care based upon the dispensing pharmacy's admission criteria.

B. The decision to administer a first dose in the home by a field nurse will be determined on a case-by-case basis and reviewed by nursing and pharmacy management. The following criteria will be evaluated:

1. Prescriber preference
2. Allergy profile
3. Age
4. Other relevant social and/or medical history

C. Physician orders for ibalizumab-uiyk must include:

1. Drug
2. Dose
3. Route of administration
4. Frequency of administration
5. Emergency medications per protocol
6. Orders for pre-medications
7. Line care protocol
8. Routine lab monitoring, if applicable

D. Baseline labs or tests prior to starting therapy.

E. Dispensing pharmacy treatment protocol for anaphylaxis will be instituted unless a more comprehensive patient-specific orders are provided by physician. See Appendix A (Nursing CarepathRx policy on *Management of Allergic/Anaphylactic Reactions*).

III. PHARMACOLOGY OVERVIEW

Refer to manufacturer's full Prescribing Information for most up to date information

A. Indication: Treatment of human immunodeficiency virus type 1 (HIV-1) infection in heavily treatment-experienced adults with multidrug resistant HIV-1 infection failing their current antiretroviral regimen.

B. Dosing:

1. Loading dose: 2,000 mg IV once.
2. Maintenance dose: 800 mg IV every 2 weeks. Dose must be infused within 3 days of the due date. If the patient does not receive the maintenance dose within a 3 day timeframe, a repeat loading dose of 2,000 mg must be administered followed by resumption of maintenance dosing 2 weeks later.

C. Dose adjustments: No dose adjustments for hepatic or renal impairment.

D. Duration of therapy is dependent on patient response and adverse reactions.

E. Contraindications: prior hypersensitivity reaction to ibalizumab-uiyk or any component of the product.

F. Warnings and Precautions:

1. Immune Reconstitution Inflammatory Syndrome (IRIS) has been reported in one when using ibalizumab-uiyk in combination with other antiretroviral agents. During initial response, some patients may develop to indolent or residual opportunistic infections.
2. Hypersensitivity reactions including anaphylaxis and infusion-related reaction have been reported. Symptoms observed during post-approval use include dyspnea, angioedema, wheezing, chest pain, chest tightness, cough, hot flush, nausea, and vomiting. Discontinue if symptoms occur and initiate appropriate treatment.
3. Pregnancy and lactation: based on animal data, infants exposed to ibalizumab-uiyk in utero may cause reversible immunosuppression. Monitoring and management by an expert consult is recommended. Administration of live or live-attenuated vaccines to infants of exposed mothers is unknown. There is a pregnancy exposure registry that monitors pregnancy outcomes in women exposed to ibalizumab-uiyk during pregnancy. Healthcare providers are encouraged to register patients by calling the Antiretroviral Pregnancy Registry (APR) at 1-800-258-4263.
4. No data are available regarding the presence of ibalizumab-uiyk in human milk, the effects on the breastfed child, or the effects on milk production. There is a potential for HIV-1 transmission through breast milk, so mothers should be instructed not to breastfeed while on ibalizumab-uiyk treatment.

G. Pharmacokinetics:

1. Volume of distribution: 4.8 L
2. Clearance: 0.36 to 9.54 mL/h/kg (dependent on dose)
3. Elimination half-life: 2.7 to 64 hours (dependent on dose)

H. Adverse Reactions:

1. Dermatologic: rash (5%)
2. Endocrine and metabolic: increased serum glucose (3%), increased uric acid (3%)
3. GI: diarrhea (8%), increased serum lipase (5%), nausea (5%)
4. Hematologic and oncologic: decreased hemoglobin (3%), decreased neutrophils (5%), decreased platelet count (3%), leukopenia (5%)
5. Hepatic: increased direct serum bilirubin (3%), increased serum bilirubin (5%)
6. Nervous system: Dizziness (8%)
7. Renal: increase serum creatinine (10%)
8. Immunologic: hypersensitivity reaction, immune reconstitution syndrome (<1%)

I. Drug Interactions: drug-drug interactions may exist. Consult interaction database for patient specific assessment.

IV. ADMINISTRATIVE GUIDELINES

A. Administration: IV infusions should be given immediately after reconstitution and dilution. Begin infusion within 4 hours of preparation per current USP Immediate-Use Guidelines.

B. DO not co-administer with other products in the same IV line.

V. NURSING PROCEDURE

A. Supplies may include but are not limited to:

1. Alcohol Swabs
2. Gloves
3. Tape
4. IV access supplies as applicable

    a. Peripheral IV access supplies for patients requiring peripheral IV access:
        1) IV start Kit
        2) Peripheral IV catheter (ex. 22 Gauge x1" and 24 Gauge x ¾")
        3) Extension set 8" with needless connector

    b. Port access supplies for patients with a port
        1) Port needle (ex. 22 Gauge x ¾ to 1" safe step)
        2) Needless connector
        3) Central line dressing change kit

5. Syringe (10 or 20 mL) with needle (20 G x 1")

6. IV administration set, if administration via gravity is required
7. Sharps container

B. Prescription items: (examples below)

1. Drug vials
2. 0.9% NaCl 250 mL bag, if administration via gravity is required
3. Standard flushes per protocol

C. How Supplied: sterile, colorless to slightly opalescent 200 mg/1.33 mL (150 mg/mL) solution in a vial.

D. Storage and Handling: store vials under refrigeration (2 to 8ºC). Protect from the light.

E. Compatibility: Compatible in 0.9% sodium chloride solution.

F. Procedures:

1. Explain the reasoning for the visit and use of ibalizumab-uiyk.
2. Don gloves.
3. Assess for signs and symptoms of infection prior to establishing venous access and preparing medication. Notify the ordering physician and pharmacist if signs or symptoms are present.
4. Establish venous access prior to preparation of drug.
5. Counsel patient on warnings, precautions, and potential side effects including but not limited to diarrhea, dizziness, rash and hypersensitivity reactions.
6. Prepare Product:

a. Allow vials to stand at room temperature for five minutes.
b. Using syringe with needle, withdraw dose from required number of vials per prescriptions label. If further diluting for administration via gravity, inject into provided diluent bag.

G. Infusion Rates:

1. Loading dose: administer undiluted via IV push over at least 90 seconds or diluted via gravity over at least 30 minutes.
2. Maintenance dose: administer undiluted via IV push over at least 30 seconds or diluted via gravity over at least 15 minutes.

H. Post infusion monitoring: monitor patient and vital signs periodically during the infusion and 60 minutes after the first infusion is complete, or 15 minutes after subsequent infusions.

VI. CLINICAL MONITORING

A. Prior to therapy: viral load.

B. During therapy:

1. Monitor for signs and symptoms of infusion-related reaction after administration such as flushing, sweating, itching, rash, and anaphylaxis.

2. Monitor for signs and symptoms of Immune reconstitution inflammatory syndrome (IRIS) as patients that are taking ibalizumab-uiyk with other antiretrovirals may develop an inflammatory response to indolent or residual opportunistic infections. A patient may have IRIS if a preexisting infection suddenly worsens or if they develop a new infection or disease after beginning therapy with ibalizumab-uiyk. Contact patient's provider if this occurs as it may necessitate further evaluation and treatment.
3. Monitor disease severity including:

    a. Viral load

        1) 2-4 weeks after treatment initiation
        2) 4–8-week intervals until levels are undetectable

    b. CD4 Count: every 3 months until CD4 count increases above 200

Please refer to the package insert for the most up to date guidance on this medication.

REFERENCES:

Trogarzo (ibalizumab-uiyk) [package insert]. Irvine, California: TaiMed Biologics USA Corp; 2018.

Emu B, Fessel J, Schrader S, et al. Phase 3 Study of Ibalizumab for Multidrug-Resistant HIV-1. N Engl J Med 2018; 379:645-654.

Centers for Disease Control and Prevention. HIV Treatment and Care. www.cdc.gov/hiv/clinicians/treatment

United States Pharmacopeia (USP). General Chapter, <797> Pharmaceutical Compounding—Sterile Preparations. (2023) USP-NF. Rockville, MD: United States Pharmacopeia. Accessed November 29, 2023.

APPENDIX A: ANAPHYLAXIS KIT INTRUCTIONS

Emergency Medication After Your Infusion

Please call your pharmacy if you have any questions or concerns. In the event of an emergency, always call 911.

Your nurse will tell you when you need to use Emergency Medications.
The epinephrine dose will be noted on the Anaphylaxis Protocol included with your kit.

Start with a clean work surface and clean hands.

Open the supply bag labeled Anaphylaxis Kit Contents.

You will need:

1. **Bag containing Pills** (2 Acetaminophen and 2 Diphenhydramine)
2. **Bag containing Alcohol Prep Pads**
3. **Bag labeled IM Epinephrine**

All other contents will not be needed.

Open the IM Epinephrine Bag

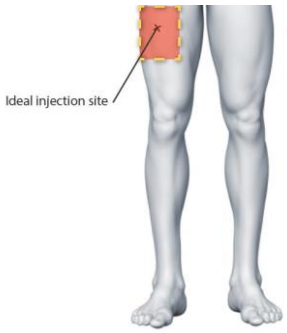
1. **Remove 1 of each item**
    a. 1 -syringe
    b. 1 – brown labeled filter needle (BD Filter Needle)- **for ampule use only**
    c. 1 – black labeled safety needle (Magellan Hypodermic Safety Needle 22G x 1”)
    d. 1 ampule of epinephrine

Prepare IM (intramuscular) injection of Epinephrine:

1. **Attach the brown filtered needle to syringe**
    a. Be careful to not touch the tip of the syringe or the needle.
2. Using an **alcohol swab, wipe the neck of the epinephrine ampule.**
3. Holding the ampule upright, **swirl and flick the ampule until all fluid flows to the bottom chamber** (the top chamber should be empty).
4. Using a new alcohol wipe, grasp the neck of the ampule and with your other hand grasp the bottom chamber of the ampule. **Quickly snap the top of the ampule off, directing the snap way from you.**

5. **Place the tip of the brown filter needle inside the ampule**. Tilting the ampule, **withdraw dose of medication into the syringe** by gently pulling back on the plunger. Be careful to not pull the plunger out of the syringe.
6. Remove the needle from the ampule and h**old the syringe upright** with the needle pointing upward. **Gently tap the side of the syringe to bring any air to the top of the syringe.**
7. **Push the air out of the syringe by gently pushing on the plunger**.
8. Replace the cap on the brown filter needle. Discard remainder in ampule.
9. **Remove the brown filter needle and place the black safety needle onto the syringe.**

Give your IM Epinephrine injection



1. **Grasp your leg muscle at the outer mid-thigh** and **cleanse the area** with a new alcohol wipe.
2. **Push the needle into your leg muscle straight** in at a 90-degree angle.
3. **Inject the medication** by depressing the plunger in a slow and steady motion.
4. **Remove the needle** and wipe the site with the alcohol wipe.
5. May repeat dose every 5 minutes (**maximum 3 doses**) if ordered per protocol.

Take the pills by mouth.

a. 2 – Acetaminophen
b. 2 – Diphenhydramine

Place all trash in the bag the pills came in and take with you when you seek medical care. **Give the bag to the nurse or EMT**, so your doctor will know what medication you already took. They will properly dispose of the syringe and needles.
Call 911 or have someone drive you to the emergency department.

APPENDIX B: EPINEPRINE KIT INSTRUCTIONS FOR IM INJECTION

Emergency Medication After Your Infusion

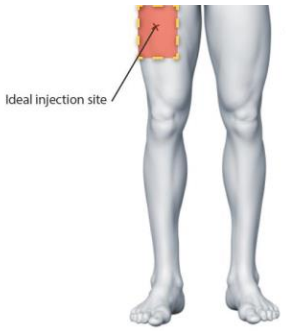
Please call 1-800-755-4704 if you have any questions or concerns. We are available 24 hours a day, 7 days a week. In the event of an emergency, always call 911.
Your nurse will tell you when you need to use Emergency Medications.
Start with a clean work surface and clean hands.
Open the supply bag labeled Epinephrine Kit Contents.

1. **Remove 1 of each item**
    a. 1 -syringe
    b. 1 – brown labeled filter needle (BD Filter Needle)
    c. 1 – black labeled safety needle (Magellan Hypodermic Safety Needle 22G x 1”)
    d. 1 ampule of epinephrine

Prepare IM (intramuscular) injection of Epinephrine:

2. **Attach the brown filtered needle to syringe**
    a. Be careful to not touch the tip of the syringe or the needle.
3. Using an **alcohol swab, wipe the neck of the epinephrine ampule**
4. Holding the ampule upright, **swirl and flick the ampule until all fluid flows to the bottom chamber** (the top chamber should be empty).
5. Using a new alcohol wipe, grasp the neck of the ampule and with your other hand grasp the bottom chamber of the ampule. **Quickly snap the top of the ampule off, directing the snap way from you.**
6. **Place the tip of the brown filter needle inside the ampule**. Tilting the ampule, **withdrawal all the medication into the syringe** by gently pulling back on the plunger. Be careful to not pull the plunger out of the syringe.
7. Remove the needle from the ampule and h**old the syringe upright** with the needle pointing upward. **Gently tap the side of the syringe to bring any air to the top of the syringe.**
8. **Push the air out of the syringe by gently pushing on the plunger**.
9. Replace the cap on the brown filter needle.
10. **Remove the brown filter needle and place the black safety needle onto the syringe.**

Give your IM Epinephrine injection



2. **Grasp your leg muscle at the outer mid-thigh** and **cleanse the area** with a new alcohol wipe.
3. **Push the needle into your leg muscle straight** in at a 90-degree angle.
4. **Inject the medication** by depressing the plunger in a slow and steady motion.
5. **Remove the needle** and wipe the site with the alcohol wipe.

Place all trash in the bag and take with you when you seek medical care. **Give the bag to the nurse or EMT**, so your doctor will know what medication you already took. They will properly dispose of the syringe and needles.

Call 911 or have someone drive you to the emergency department.