SUBJECT:	GUIDELINES FOR USE OF INTRAVENOUS ACTIVASE WHEN DECLOTTING CENTRAL VENOUS CATHETERS	Policy No.: C122.17 Effective Date: 11/2011 Page: 1 of 4

Purpose of Procedure: To delineate the policy and procedure for declotting central venous catheters using Activase (Cathflo™).

Physician Order Required: Yes

Performed by: Registered Nurses who have received training in the administration of this medication.

Policy Statement:

Description: Activase (e.g.,Cathflo™) a form of recombinant tissue plasminogen activator (t-PA) is used to reestablish patency of central venous catheters (CVCs) obstructed with an intraluminal or extra luminal thrombus or fibrin sheath that may cause partial or full occlusions evidenced by the inability to withdraw blood. Activase (Cathflo™) dissolves clots and fibrin by triggering fibrinolysis.

1. Notify the MD for suspected central line catheter occlusion and obtain an order for Activase.

2. The central venous access devices that are appropriate for Activase include but are not limited to CVCs (tunneled and non-tunneled), implanted venous ports, and peripherally inserted central catheters (PICC).

   Key Point: This guideline does not apply to dialysis catheters.

3. Activase should not be administered to patients with known hypersensitivity to alteplase or any component of the formulation.

4. Definitions
   a. Complete occlusion: Neither infusion nor aspiration is possible through the catheter.
   b. Partial occlusion: Infusion is possible, but aspiration is not.

A. Rule Out Other Causes of Catheter Obstruction:
Activase should be used only by order of the physician, and only after all the other appropriate methods of ruling out catheter obstruction have been tried:

1. Rule out any external mechanical obstruction. Ensure that:
   - IV tubing is not clamped or kinked.
   - All connections are tight and that there are no air leaks.
   - Sutures are not too tight at the catheter exit site.
   - Catheter is not kinked, twisted, or slipped out of place.
   - The end cap is not obstructed with precipitates, old blood, etc., by checking for blood return directly from the lumen hub.

2. Ask the patient to change positions. Instruct the patient to lift arms overhead or forward to "lift" clavicle off the subclavian vein.
   a. If blood return occurs with change in position, flush catheter with 10ml NS.

b. Discuss with MD the possible need of a chest x-ray to assess for internal catheter pinch-off kinking.

3. Ask the patient to take a deep breath and cough forcefully while you attempt to irrigate and withdraw blood.

4. If the catheter device is an implanted port, remove non-coring needle and replace with a new primed non-coring needle to ensure correct placement (see Policy C122.16 Attachment B – *Accessing Implanted Vascular Access Ports*). Reassess catheter patency after changing non-coring needle.

5. If no other cause for obstruction can be identified, consider whether it may be due to lipid or drug precipitate.

B. Exceptions/Clinical Alerts: Not for use with dialysis catheters

C. Refer to Policy C122.17 Attachment A for ACTIVASE (Cathflo™) PROCEDURE

D. Documentation:

1. Record each dosage of Activase (Cathflo™) in the Medication Administration Record (MAR).

2. Document results

Author / Reviewer: Angelica S. Lopez MSN, RN, AGCNS-BC, CRRN, CCRN, CNRN /
Julie Villalobos, MSN, RN, PHN, AMB-BC

References:

Cathflo® Activase® (Alteplase) package insert. Manufactured by Genetech, Inc. 1 DNA Way South San Francisco, CA 94080-4990 (February 2005). Revised 2/2019.

Genentech. (2021). *Cathflo Activase (alteplase) Administration.* Retrieved from Genentech USA: https://www.cathflo.com/dosing-administration/cathflo-administration.html

Lippincott® solutions. (2023). Lippincott® Solutions. https://procedures.lww.com/lnp/view.do?pId=6607313&hits=activase&a=true&ad=false&q=activase

UpToDate. (2022). Evidence-Based Clinical Decision Support System| UpToDate | Wolters Kluwer. https://www.uptodate.com/contents/catheter-related-upper-extremity-venous-thrombosis-in-adults?search=catheter%20related%20thrombosis&source=search_result&selectedTitle=1~69&usage_type=default&display_rank=1

New – 11/2011
Revised – 04/2013
Revised – 02/2016
Revised – 02/2018
Reviewed – 02/2021
Reviewed – 02/2024

ACTIVASE (CATHFLO™) Procedure

For De-clotting of Central Venous Catheters

Performance Measures/Criteria:
Catheter Obstruction
1. Wash hands and don clean gloves. Scrub hub and connectors with alcohol for 15 seconds.
2. Assess VAD (vascular access device) for patency before instilling declotting agent, evaluate medications administered for precipitation potential to determine type of occlusion.
3. Verify/obtain MD order for Activase (Cathflo™). Check patient's allergies.
4. Equipment and supplies needed: a. Activase (Cathflo™) and Sterile Water, USP for reconstitution b. 1 – 12 ml pre-filled NS syringe per lumen c. 1 – 12 ml luer lock syringe and blunt needle adapter per lumen d. Sterile positive pressure valves e. Sterile end caps
5. Verify patient identification by utilizing 2 patient identifiers.
6. Explain procedure to the patient.
Reconstitution of Activase (Cathflo™)
1. Perform hand hygiene and don gloves.
2. Aseptically withdraw 2.2 ml of Sterile Water for Injection, USP. **Do Not Use Bacteriostatic Water.**
3. Inject 2.2 ml Sterile Water for Injection, USP, into Activase vial. Slight foaming is not unusual; let stand undisturbed to allow large bubbles to dissipate.
4. Mix by gently swirling until the contents are completely dissolved. Complete dissolution should occur within 3 minutes. **DO NOT SHAKE.**
5. Activase should be reconstituted immediately before use. Solution may be stored for 8 hours following reconstitution when stored at 2-30°C (36-86°F).
6. Instillation of Activase into the Catheter: a. Inspect product prior to administration for foreign matter and discoloration. b. Withdraw appropriate dose of Activase 1. Patients weighing ≥ 30 kg or 66 lbs - give 2 mg in 2 ml 2. Patients weighing < 30 kg or 66 lbs give appropriate dose as ordered
Partial Occlusion
1. Instill Activase directly into the hub of the indicated lumen utilizing a 12 ml syringe. **Never force** Activase into the lumen of the catheter. Once complete, discard syringe and place an end cap at lumen hub and label "Do Not Use / Do Not Flush" and the initial dwell time.
2. Allow Activase to dwell for 30 minutes.
3. Check blood return after 30 minutes utilizing a 12 ml syringe and unclamp if indicated. If blood return is noted, aspirate 5 ml and discard; flush with 20 ml NS.
4. If no blood return, place a sterile end cap to lumen hub and allow Activase to dwell for another 90 minutes (120 minutes total dwell time).
5. At end of 120 minutes, remove end cap and attach a 12 ml syringe to lumen and unclamp if indicated. If blood return is noted, aspirate 5 ml and discard; flush with 20 ml NS.
6. If no blood return is noted, a second dose may be instilled by repeating steps 1-5 above. If no blood return is noted at the end of the 2nd 120 minute time interval, notify provider.
Full Occlusion of Cath. using "One-Syringe Method"
1. If catheter has clamp, clamp the catheter. Remove the PPV. Attach an Activase (Cathflo™) 12 ml syringe to the catheter hub.

ACTIVASE (CATHFLO™) Procedure

For De-clotting of Central Venous Catheters

2. Hold Activase (Cathflo™) filled syringe vertically with the plunger end up.
3. Unclamp catheter. Gently aspirate Activase filled syringe until the plunger reaches the 8-9 ml mark and hold it to create negative pressure in the catheter.
4. Slowly release plunger and the negative pressure on syringe. This will allow Activase (Cathflo™) to be drawn into the catheter to the exact amount required to come in contact with the clot formation. This process may be repeated prn to infuse Activase (Cathflo™) into catheter lumen.
5. Clamp the catheter, remove the syringe and discard. Place a sterile end cap to lumen hub. Label the site "Do Not Use/ Do Not Flush" and the initial dwell time.
6. Allow Activase (Cathflo™) to dwell for 30 minutes.
7. After 30 minutes, check for blood return by removing the end cap and attaching a 12 ml syringe to the lumen hub, unclamp if indicated. If blood return is noted, aspirate 5 ml and discard; flush with 20 ml NS.
8. If no blood return, place sterile end cap to lumen hub allowing Activase to dwell for another 90 minutes (120 minutes from start of original dwell time to completion of dwell time).
9. At the end of 120 minutes, remove end cap and attach a 12 ml syringe to lumen and unclamp if indicated. If blood return is noted, aspirate 5 ml and discard; flush with 20 ml NS.
10. If no blood return noted, a second dose may be instilled by repeating above steps. If blood return is not achieved at the end of the 2nd 120 minute time interval, notify provider.
Documentation
1. Document each dose of Activase on the Medication Administration Record (MAR).
2. Document in the patient's medical record: a. Indication(s) for de-clotting b. Date and time of procedure c. Catheter brand, Fr. Size, number of lumens, lumen(s) de-clotted d. Amount /volume of Activase instilled e. Dwell time f. Repeat dose g. Results