Critical Elements in Declotting a Central Venous Line

Considerations:

- Be familiar with your organization’s standard/policy, which may include management of other causes of catheter occlusions besides clot/thrombus.
- Standard/policy should be evidence-based and reflect established standards and best practice (such as Standards of Practice and Policies/Procedures from the Infusion Nurses Society).
- For specific agents, also consult manufacturer’s instructions for use
- Do not leave a central line with an occlusion untreated
- Thrombi in/around a central line facilitate adhesion of bacteria. Use of alteplase for declotting of catheters should trigger heightened awareness of infection risk.

Lines suitable for “declotting”:
- PICC
- Non-tunneled
- Tunneled
- Implanted port (includes volume of reservoir, catheter, and needle infusion set)

When occlusion is suspected, assess for:
- patency (ability to flush catheter without resistance and to yield a blood return)
- potential causes of occlusion (thrombotic, medication/solution precipitate, external or internal mechanical)

“Declotting” Central Venous Lines:
- Performed when cause is thought to be a clot or an occluding thrombus
- Alteplase is only effective with clot/thrombotic occlusions.
- Other agents are indicated for occlusions caused by drug or solution precipitates.
- Alteplase may not be recommended when infection suspected d/t degradation of clot and potential release of bacteria into circulation

Technique for instillation depends on partial versus complete occlusion:
- Complete occlusion: single syringe or stopcock method (creates negative pressure in catheter allowing solution to be drawn into catheter)
- Partial occlusion: direct instillation (able to instill solution under positive pressure)
General Alteplase Guidelines:

- Low dose Alteplase in a concentration of 2mg/2mLs; no more than 4mg/4mLs
- Instilled and left to dwell in catheter. Attempt to withdraw after 30 minutes.
- If unsuccessful, allow to dwell for additional 90 minutes.
- If continued occlusion, instill additional dose, and follow same procedure.
- If patency not restored after 2 doses, cap catheter and allow to dwell 24 hours.
- Specific to Pediatrics: determine fill or priming volume. Manufacturer recommends instilling 110% of fill volume for children less than 30 kg. Important to ensure alteplase completely fills catheter.

Manufacturer Resources with priming/fill volume references:

- Bard: http://www.bardaccess.com/
  Broviac, Hickman, Leonard, Hohn, PICCs, ports, Powerline

- Medcomp: http://www.medcomp.net/
  Dignity ports, Proline

- Teleflex (Arrow): http://www.arrowintl.com/
  Non-tunneled CVCs

- Cook: http://www.cookmedical.com/home.do
  Tunneled and non-tunneled CVCs (ports)

Resources:

Cathflo Manufacturer website:
https://www.cathflo.com/dosing/index.jsp

Includes: videos with administration techniques for partial and complete occlusions; information about mechanism of action; and other tools and educational resources

References:


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