OCCLUSION MANAGEMENT of Central Vascular Access Devices in Adult Patients

- Competency Test
- Performance Criteria Checklist
- References

Score ________/36 =____%

Exam adapted from AHS Clinical Policy Occlusion Management Exam
February 2017
CVAD Occlusion Management Qualification Exam
Must obtain 80% prior to skills demonstration

1. The 4 types of thrombotic occlusions are intraluminal thrombus, mural thrombus, _________________ and _________________ - (2pts.)

2. Complications of catheter occlusions include:
   a. Interruption of therapy
   b. Infiltration or extravasation
   c. Infection
   d. Thrombosis of the blood vessel
   e. All of the above

3. When should the stop-cock method be used for occlusion management?
   a. Always
   b. For a complete occlusion when agent supplied in syringe smaller than 10mL
   c. For a withdrawal occlusion
   d. For a complete occlusion when agent supplied in a vial

4. Which of the following can cause catheter occlusions?
   a. Thrombus formation
   b. Lipid residue
   c. Drug or mineral precipitates
   d. Mechanical obstructions
   e. All of the above

5. Causes of mechanical obstruction include:
   a. Suture too tight
   b. Catheter tip malposition
   c. Clogged needleless connector
   d. Incorrect placement of needle in implanted port
   e. All of the above

6. Which of the following are indicators of catheter occlusion?
   a. Inability to infuse fluids
   b. Sluggish flow
   c. Lack of free-flowing blood return
   d. All of the above

7. Catheter occlusions:
   a. Can be complete and prevent infusions or aspirations
   b. Can be partial, allowing infusions but preventing aspirations
   c. Can occur in 1 out of 4 catheters
   d. All of the above
8. Questions to assist in determining if an occlusion should be managed or if the catheter should be removed include:
   a. Is the CVAD still required?
   b. Are there any other venous access options?
   c. Would alternate appropriate venous access be easily obtained?
   d. Is there a suspected or confirmed catheter related infection?
   e. All of the above

9. The inability to infuse solutions and the inability to aspirate blood is defined as a ________________.
   a. Complete occlusion
   b. Sluggish catheter
   c. Withdrawal occlusion
   d. Partial occlusion

10. In the COOL-2 clinical trial, Cathflo demonstrated ___ cumulative efficacy after up to 2 doses using a 2 hour dwell for each dose.
   a. 46%
   b. 61.3%
   c. 70.2%
   d. 87.2%

11. Occlusion management of a CVAD is Specialized Clinical Competency and may only be performed by a health professional qualified in this procedure.
   True or False

12. Match the type of occlusion with the description. (3 points)
   a. Withdrawal occlusion
   b. Complete occlusion
   c. Sluggish catheter
   i. catheter cannot be flushed or aspirated
   ii. increased resistance to flushing
   iii. the inability to flush but able to aspirate blood

13. In the Cathflo clinical trials, serious adverse events reported after treatment included sepsis, gastrointestinal bleeding, and venous thrombosis.
   True or False

14. If unable to flush or aspirate blood with an IVAD – the first step is to re-access to rule out needle malposition.
   True or False
15. Lipid occlusions make up the majority of all occlusions.  
   True or False

16. There is limited systemic exposure with Cathflo since it is instilled into the catheter in direct contact with the clot.  
   True or False

17. If signs and symptoms suggest a CVAD may be malpositioned, radiographic studies must be undertaken after instilling a catheter clearance agent  
   True or False

18. Catheter removal should be considered if catheter patency is not restored.  
   True or False

19. Drugs that are frequent causes of precipitate include:  
   a. Phenytoin  
   b. Heparin  
   c. Calcium and phosphate  
   d. All of the above

20. Signs and symptoms of catheter tip malposition may include:  
   a. Inability to infuse or withdraw  
   b. Change in length of external portion of catheter  
   c. Arm or shoulder discomfort  
   d. Arrhythmias  
   e. All of the above

21. A physician has ordered 1.3 mL of Cathflo to treat a complete occlusion for a patient with a hemostatic defect. To ensure accuracy, the cathflo is drawn up in a 3 mL syringe. What method of instillation should be used?  
   a. Direct instillation  
   b. Negative pressure with stop-cock  
   c. Negative pressure without stop-cock  
   d. Any of the above

22. Indicate whether the following instances require a direct instillation of a catheter clearance agent, or a negative pressure technique. (3 points)  
   You are able to infuse, but unable to withdraw blood  
   Direct / Negative pressure

   You feel increased resistance when flushing  
   Direct / Negative pressure

   You cannot infuse fluids or aspirate blood  
   Direct / Negative pressure
23. You have instilled alteplase 2 mg/2 mL into a PICC catheter and left the agent to dwell for 120 minutes. You return and attempt aspiration. There is no blood return. This is your first attempt at clearing the occlusion. What do you do now?
   a. Remove the PICC
   b. Use the lumens that are working
   c. Instill agent again. Consider overnight dwell time.
   d. None of the above

24. What is the maximum weekly dose of alteplase?
   ____________________

25. How is the dose divided for a 3 lumen catheter when all three lumens have withdrawal occlusion?
   ____________________

26. List one situation in where you would get a chest X-ray prior to restoring patency to the catheter.
   ____________________

27. What is written on the label when the agent is insitu?
   ____________________

28. List four items that must be documented. (4 points)
   a. ____________________
   b. ____________________
   c. ____________________
   d. ____________________
Occlusion Management of CVADs in Adult Patients Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Demonstrated Correctly</th>
<th>Requires Prompting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirms occlusion - Assesses for malposition, kinking, and broken catheter</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>Reviews patient specific contraindications for clearance agent</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>Confirms/obtains patient care order for clearance agent</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>Identifies patient using 2 identifiers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explains the procedure to the patient including possible adverse effects of the catheter clearance agent</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>Obtains baseline vital signs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleans the work surface with appropriate disinfectant. Allows to air dry</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>Performs hand hygiene</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepares the catheter clearance agent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigorously scrubs the needleless connector for minimum 15 seconds using an approved antiseptic solution. Allows to air dry</td>
<td>Yes / No</td>
<td></td>
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<tr>
<td>Attaches a 10mL syringe with NS to needleless connector</td>
<td></td>
<td></td>
</tr>
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<td>Unclamps catheter (if required)</td>
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<tr>
<td>Flushes lumen with 10 mLs NS</td>
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<td>Attaches a 10 mL syringe with catheter clearance agent to lumen</td>
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<td>Gently instills the agent in the lumen</td>
<td></td>
<td></td>
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<td>Removes syringe and clamps catheter if present</td>
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<td>Labels the lumen with a &quot;Medication Added&quot; label with the following:</td>
<td></td>
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<td>• DO NOT USE</td>
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<td>Reports to unit staff, identifying time they will return to aspirate</td>
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<td>Attempts to aspirate agent and minimum 4-5 mL of blood</td>
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<td>Flushes with at least 20 mL of normal saline</td>
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<td>If unable to clear needleless connector, replaces it with sterile connector</td>
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😊 May perform skill independently  ☑ Please repeat

Observer Name: ____________________________________________________

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<td>Gently withdraws plunger of syringe back to create negative pressure in the lumen of the catheter</td>
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<td>Slowly releases plunger to allow agent to be “pulled back into the lumen”</td>
<td>Yes</td>
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<td>Slowly instills the remaining agent in the catheter using a push-pull action. DOES NOT use force when pushing on the plunger</td>
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