VASCULAR ACCESS

Monitoring and Prevention of CVC Dysfunction
Checklists for CVC complications

Monitoring/Surveillance of CVC Complications

At each dialysis session:

☐ Perform a basic medical history focused on signs and symptoms of CVC-related complications (e.g., dysfunction, infection)

☐ Perform a physical examination or check of the dialysis catheter, exit site, tunnel, and surrounding area at each catheter dressing change or dialysis session.

Catheter Dysfunction

☐ Assess for CVC dysfunction during each HD session

☐ Note the updated definition of CVC dysfunction: failure to maintain the prescribed extracorporeal blood flow required for adequate hemodialysis without lengthening the prescribed HD treatment.

CPG 20.1

CPG 21.1
Prevention of CVC Complications: Monitoring of CVC Complications

Dialysis Care team to perform a basic medical history focusing on signs and symptoms of CVC complications (dysfunction and/or infection) at each dialysis session

- Is there evidence of catheter cuff migration placing patient at risk for infection and/or catheter loss?
- Does exit site demonstrate erythema, swelling, tenderness and/or purulent discharge?
- Does catheter tunnel exhibit swelling, erythema, fluctuance, or tenderness central or proximal to the cuff?
- Does CVC fail to deliver adequate blood flow rate to permit adequate dialysis?

Yes

(+ ) Catheter cuff migration noted

Discuss with Nephrologist re: next steps to secure vs replace CVC

No

Exit site or CVC tunnel infection suspected

Prescribe systemic antibiotics per CPG 25

CVC failing to deliver adequate blood flow

Is this the 1st dialysis session since CVC placement?

Yes

Discuss with interventionalist re: possible central venous stenosis or mechanical damage to CVC (e.g. tight suture, kinking, perforation etc.)

No

Consider: Intraluminal or pericatheter thrombosis; fibrin sheath formation; mural thrombus against CVC or new central venous stenosis

CPG 20.1, 21.1

Perform a check of the dialysis catheter, exit site, tunnel, and area surrounding catheter at each catheter dressing change or dialysis session

• Leave catheter in place
• Continue monitoring at each dialysis session and dressing change
If you notice any of these signs during your daily catheter check, follow these instructions immediately:

CVC Contact Template

- **Contact:** ____________________________
- **During regular facility hours:** ____________________________
- **After hours:** ____________________________

*Note: CVC refers to tunneled hemodialysis CVCs unless otherwise specified.*

Prevention of CVC related Dysfunction

Non-Pharmacologic Intraluminal Prevention of CVC Dysfunction
- Consider closed-system connector device that is changed weekly to potentially minimize system contact with microorganisms and potentially reduce risk of dysfunction and infection.

Pharmacologic Intraluminal Prevention of CVC Dysfunction
- Use citrate (<5%) or heparin catheter locking solution.
- Consider Thrombolytic-Lock to decrease likelihood of Catheter Dysfunction.
- TPA lock once weekly + Heparin (5000 unit/ml) lock twice weekly preferred over Heparin 5000 units/ml thrice weekly.

Systemic Therapy Prevention of CVC Dysfunction
- Avoid systemic oral anticoagulants such as Warfarin for the sole purpose of improving CVC patency due to lack of efficacy and potential risks.
- Low-dose aspirin may be used to maintain tunneled CVC patency in patients with low bleeding risk.

CPG 21.2, 21.3
CPG 21.4, 21.5
CPG 21.6
CPG 21.8, 21.9
CPG 21.8, 21.9