Targeting Zero Infections: Preventing Outpatient Dialysis Infections As A Team

A micro-webinar series for fellows: section 1

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Speakers

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Objectives

• Discuss the structure of outpatient dialysis unit

• Discuss the approach to access infection prevention and its management in the outpatient dialysis units
Let’s Begin

What is the typical set up of an outpatient dialysis unit, and how is it being run?
Key Dialysis Staff To Know

**Designated Leader**
- Medical Director

**Situational Leaders**
- Clinical Manager or Facility Administrator
- Staff Nephrologists/Advanced Practice Providers
- Charge Nurse
- Dialysis nurses
- Dialysis technicians

The Authority for Certain Clinical Tasks (annanurse.org)
Other Important Dialysis Staff

- Social Worker
- Dietician
- Reception / Billing
- Bio-medical Staff
- Coordinator Roles
  - Access
  - Clinical
  - Operations

Any dialysis staff can act as a situational leader to prevent infections!
Do national regulations require dialysis facilities to have a designated infection prevention specialist in the facility?
Infection Prevention and Control
HD Staffing Requirements

• No national regulation for designated infection prevention staff
• If overseen by an acute care facility, infection prevention oversight may exist
• If not overseen by an acute care facility, infection prevention oversight may not exist

• Why is this important?
• Typically, a dedicated infection prevention staff is NOT present in the facility
• Significant variability in the education for staff, policies and in auditing practices
• Lack of robustness compared to inpatient infection prevention
Question?

• So what can we do as rounding nephrologists to assess access for infection?
Checklist: Assessment for Access Infection

• Ask patient about symptoms of infection like fevers, chills, rigors or malaise
• Examine to assess for localized erythema and cellulitis
• Assess for an abscess or localized collection with an arteriovenous access
• Assess for purulence at the exit site/tunnel for a tunneled central venous catheter

Case Study

During dialysis rounds, Mr. Z mentions that he has been having low grade fever at home. He is a 56-year-old male with past medical history of type 2 diabetes mellitus, hypertension, end stage kidney disease who has been on hemodialysis on a Monday, Wednesday and Friday schedule for the last three months.

Vitals: 37.8 C, BP 142/90mm Hg, pulse 85/min
Chest: Clear to auscultation
Heart: Regular rate and rhythm no murmur
Access: Right internal jugular tunneled catheter with redness at the exit site, extending around the catheter tract for about 3 cm with scant purulent drainage

Source: renalfellow.org
Case Study Continued..

• The patient denies any fevers, chills at home
• However, he is very concerned because he noticed that during his treatment last week, one of the dialysis technicians did not disinfect the exit site after removing the dressing
Case Study - Initial Plan

I would discuss the case with the charge nurse and ask

• How infection prevention practices are being monitored?
• How often are staff trained?
• What is the compliance when auditing?

Source: shutterstock.com
Case Study - Initial Plan

Then arrange a workshop for the staff to review catheter care practices for a tunneled HD catheter

Source: shutterstock.com
Points to Discuss During Workshop

• Hand hygiene before handling the catheter
• Aseptic technique
• Recommendations to perform exit site care
  • Disinfection of exit site and limbs using an appropriate antiseptic
  • Dressing care
• Steps for catheter connection, including scrub the hub protocol
  • Disinfection of hubs prior to any connections at the beginning of treatment
  • Disinfection after disconnecting from bloodlines and before replacing a new cap at the end of a treatment
• Reporting signs and symptoms of infection
Key Points

• Treat each infection as a quality improvement opportunity
• Discuss with the person in charge of infection prevention
• Review what education is provided regarding infection prevention and how frequently that happens
• How is compliance monitored in a facility?
Coming back to the case...
Which are the next steps in management?

Select ALL that apply:

a) Draw blood cultures
b) Culture the purulent drainage
c) Prescribe oral levofloxacin
d) Give 1 gram of vancomycin
e) Give 1 gram of ceftazidime
f) Admit the patient to the hospital
• Admit the patient if immediate removal of the tunneled catheter is required, as in the setting of hemodynamic instability or if the patient appears sick i.e. meets criteria for SIRS or has mental status changes
Coming back to the case...
Which are the next steps in management?

Select ALL that apply:

a) Draw blood cultures
b) Culture the purulent drainage
c) Prescribe oral levofloxacin
d) Give 1 gram of vancomycin
e) Give 1 gram of ceftazidime
f) Admit the patient to the hospital
Case Study Continued

- You draw two set of blood cultures and administer 1 gram of vancomycin and 1 gram of ceftazidime
Case Continued..

- Two days later, patient is seen again on dialysis
- Blood cultures negative
- Cultures from purulent drainage is growing methicillin-sensitive *Staphylococcus aureus*
- Redness and drainage at the catheter exit site have improved
How Should the Catheter be Managed?

a) Nothing further to be done about the catheter
b) Start antimicrobial lock therapy for catheter salvage
c) Arrange catheter exchange over a guidewire
d) Removal of catheter with simultaneous placement of catheter at an alternate site
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Case Continued…

• You change antibiotics to cefazolin with dialysis treatments to complete a 10-14-day course.

Take-Home Points

• There is no national regulation requiring outpatient dialysis facilities to have a designated IP role on staff in the facility, but state requirements may be different

• Each staff member of the dialysis unit is responsible for adhering to infection control practices

• Periodic training and auditing of the staff in dialysis units can promote safe practices that decrease infections
Additional Resources


Thank you!