

## CATHETER-RELATED BLOODSTREAM INFECTION

### Risk factors for CRBSI

#### Modifiable

- Insertion site
- Technical skill
- Maintenance of asepsis
- Catheter material
- Use of venous cutdown
- Emergent catheter insertion

#### Nonmodifiable

- Severity of illness
- Age
- Gender
- Remote infection
- Sepsis

### Prevention strategies

- Use maximum barrier precautions
  - Wash hands before insertion
  - Wear mask, cap, sterile gown and gloves
  - Use a large fenestrated drape that entirely cover the patient (our unit still uses 4 small drapes – but things will hopefully change)
- Use alcohol-based chlorhexidine preparation for site – available in ICU
- Choose subclavian site preferably (unless contraindicated\_
- Insertion by skilled, experienced operators – as our unit is a teaching unit, trainees should learn how to insert central lines – ensure that procedure is supervised by senior
- Preferable to use single-lumen CVC – but in the critically ill, line access is a problem. We usually use 3-lumen. 4-lumen also available for TPN. However, change CVC to peripheral lines as soon as not required
- Do not remove or exchange catheters on a routine basis unless clinically indicated
- Avoid transparent dressings that are impermeable to moisture – use sterile gauze or expose to air. Our unit still uses transparent dressings; but the nurses will change them whenever the insertion site looks wet
- Our IV administration sets are changed no more frequently than every 72 hours

- Antibiotic-coated catheters have been shown to be beneficial, but much more expensive. Do not use unless advised by senior. We stock minocycline-rifampicin coated catheters

#### Notes on catheter management in ICU

- Peripheral and central lines inserted in emergency and ward settings should be considered as contaminated and should be removed as soon as possible

Site care – refer to our Unit's infection control guidelines for more details

Catheter change is necessary if

1. positive blood culture
2. skin site infection
3. sepsis without a likely source

Send line tip and peripheral blood for culture

Do not exchange catheter over guidewire unless no choice eg no available sites.

Send tip for culture and if significant CFU growth occurs, remove the new catheter

If CRBSI has occurred

- treat with systemic antibiotics according to sensitivity testing
- If Staph aureus, look for endocarditis – TEE
- If persistent bloodstream infection – consider septic thrombosis, infective endocarditis, metastatic infection
- Duration of antibiotic therapy
  - No metastatic infection: 7-14 days
  - Metastatic infection or persistent fever: 4-6 weeks
  - Candidemia: 14 days