



Nursing Management Of Venous Access Devices (VADs): *Introduction & Overview*

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Why Do We Care?

- Beginning October 1, 2008, the Federal Centers for Medicare and Medicaid Services (CMS) no longer reimburses hospitals for the treatment of a “reasonably-preventable” hospital-acquired catheter-related bloodstream infection (C-RBSI).
- CDC estimates for C-RBSI treatment are \$34,000-\$56,000 per infection (CDC Guidelines, 2002).
- Infection, phlebitis, and less often bacteremia remain a major problem with intravascular catheters (McGee, 2003).
- The majority of serious C-RBSIs are associated with central venous catheters, particularly those placed in an intensive care unit.

An Ounce of Prevention.....

- Adherence to hand hygiene recommendations and the use of aseptic techniques during insertion and dressing changes remain the most important measures for the prevention of catheter-associated infections (O'Grady, 2003).
- Other measures:
 - Choosing appropriate sites for catheter insertion.
 - Using the appropriate type and gauge of catheter, for example, using the smallest gauge to meet patient needs.
 - Use of maximum barrier precautions during insertion.
 - Changing catheters and administration sets at appropriate intervals.

An Ounce of Prevention....other measures (cont.)

- Ensuring proper catheter-site care and maintenance.
- Prompt removal of catheters when no longer essential:
 - Is CT scan completed?
 - Is patient now on a regular diet with IV regimen?
 - Two 'large-bore' IVs ordered for GI bleed, patient has had a cauterization, and the hematocrit is now stable. Are two venous access devices still needed?
- Emergent line insertions, or those placed by EMS "in the field" should be changed as soon as conditions/patient stability permits

Standards of IV Care

- Standards published by the Infusion Nurses Society (INS) and the Centers for Disease Control (CDC) set the bar for intravenous therapy practices.
- MGH Policies, Procedures, and Practices reflect current CDC and INS Standards.
- Documentation of an IV placement at MGH should include:
 - type and gauge of the catheter inserted
 - date and time of insertion
 - location of the vein
 - was ultrasound used?
 - number of attempts to establish IV access
 - name and licensure of person inserting the device

General Care of VADs

- HAND HYGIENE
 - BEFORE and AFTER patient contact
- NEEDLELESS CONNECTOR DISINFECTION: “Scrub the Hub!”
 - VIGOROUSLY scrub needleless connector with alcohol for **15** seconds
 - Include threads on luer-locking needleless connectors/catheter hubs
- Saline lock orders:
 - Insert saline lock order written as ‘once’ is a one-time order
 - Saline lock order written ‘until discontinued’ is valid for entire admission
 - Separate saline lock order required for each saline lock needed

Flushing Techniques for all VADs

- SALINE FLUSHES
 - use prefilled preservative-free 0.9% saline syringes
 - ONE-TIME use only
 - Supplied in 3ml and 10ml syringes
- Use push-pause & pulsatile method of flushing
 - Use a push-pause technique when instilling flush solution (i.e. give 2-3 ml of flush, pause, give another 2-3 mls of flush, pause...repeat until done)
 - Pulsatile/push-pause action creates 'turbulence' within needleless connector and catheter for more thorough flushing

Flushing Techniques

Type of catheter cap	Flushing technique
Needleless system cap with positive pressure feature (e.g. Max-Plus).	Flush using push-pause technique. Remove syringe, and <i>only then</i> may you clamp the catheter.
Needleless system cap without positive pressure feature (e.g. blue MicroClave)	Flush using push-pause technique. Maintain positive pressure by clamping line while injecting last ml of fluid.
None- Flushing when using a direct connection (e.g. during monthly maintenance flush of port).	Flush using push-pause technique. Maintain positive pressure by clamping line while injecting last ml of fluid.

Administration Set Changes

- Blood/Blood Components
 - Tubing and filters used to administer blood or blood products are changed within 8 hours of initiating infusion per MGH policy
 - Administration sets must be changed AT LEAST within 24 hours per CDC guidelines
 - Note that tubing is often changed after each unit in many clinical areas (e.g. with single use blood administration sets)
- Intravenous Solutions
 - Primary continuous and intermittent IV sets (tubing) every 96 hours
 - Change of add-on devices such as filters, should coincide with administration set changes
 - Tubing used to infuse lipid-containing emulsions is changed every 24 hours
 - Tubing for propofol infusions should be changed every 6-12 hours per manufacturer's recommendations
- Parenteral Nutrition/TPN/Hyperalimentation
 - TPN tubing and filter every 24 hours

Types of Venous Access Devices

- Peripheral IV Devices
 - Peripheral IV Catheters
 - Midlines
 - Extended-dwell catheters
 - “Short” Jugular Lines
- Central Venous Access Devices
 - Peripherally Inserted Central Catheters (PICCs)
 - Non-tunneled Subclavian/Jugular/Femoral Lines
 - Implanted ports: Portacaths, Passports, Power Ports
 - Tunneled catheters: Hickmans, Broviacs, Groshongs, Small Bore

PLEASE NOTE...

- All information provided is subject to review and revision. Please continue to refer to MGH Policies and Procedures in Ellucid as your primary resource

References

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