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INDICATIONS:

- Acute status patients.
- Cardiopulmonary arrest.
- For hemodialysis fistula life-threatening condition requiring immediate vascular access.

Approved for Infusion:

- Locally approved intravenous fluids.
- Medications all medications approved for venous administration.

A pre-existing vascular access device (PVAD) is an indwelling catheter/device placed into one of the central veins to provide vascular access for patients requiring long term intravenous therapy or hemodialysis.

TYPE OF CATHETERS:

External Silastic Indwelling Catheter/Device:

- Broviac, Hickman and others: A tunneled silicone tube that is inserted into the distal superior vena cava, usually via the subclavian or jugular vein. The catheter enters the skin through an incision in the chest. The line may be saline or heparin locked and is protected by an injectable cap.
- Midline catheter: A long-term catheter that enters the arm via the basilic or cephalic veins near the
 antecubital area. The tip of this catheter is located distal to the axilla in the upper arm. The line may
 be saline or heparin locked and is protected by an injectable cap. Frequently used for long-term
 antibiotic administration. Does not require X-ray verification of placement.
- PICC Line: Peripherally Inserted Central Catheter (PICC) usually inserted into the superior vena cava via a peripheral arm vein (basilic or cephalic vein). The line may be saline or heparin locked and is protected by an injectable cap.
- Hemodialysis catheter: A large tube that is inserted into the distal superior vena cava via the subclavian vein. There is usually a higher concentration of heparin in the tube which must be aspirated prior to use.
- Internal Subcutaneous Infusion Ports: NOT approved for access by prehospital personnel.

HEMODIALYSIS FISTULA: A surgically created arteriovenous connection used for hemodialysis. A subcutaneous fistula may be accessed in critical patients requiring immediate medication administration in lifethreatening situations only.

Establish Patency:

- Discontinue any current IV solution.
- Use extreme caution when discontinuing a continuous IV infusion containing chemotherapy to minimize exposure or bolus of medication.
- Apply clean gloves.
- Prepare 10 mL syringe, IV administration set and IV solution.
- Prep injection port with alcohol swab.
- If clamped, unclamp catheter.
- Slowly inject 5 mL normal saline into the injection port. If resistance is met when trying to inject, reclamp catheter and do not use. (See specific directions for dialysis catheters.)
- Aspirate to obtain a blood return.
 - > For dialysis catheters only: Aspirate 3-5 mL blood and discard prior to injection of saline.
- If unable to get a blood return, reclamp catheter and do not use.
- If no resistance is met, inject remaining 5 mL of normal saline into catheter.
- If resistance is met, reclamp catheter and do not use.

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Orange County EMS Agency
Advanced Life Support Treatment Guidelines
ADMINISTRATION OF MEDICATION VIA A PRE-EXISTING

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Administration of IV Fluids/Medications:

VASCULAR ACCESS DEVICE (PVAD)

- Prepare IV solution, IV administration set.
- Prep injection port with alcohol swab.
- Puncture injectable cap with appropriate device.
 - Note: Most home care injection caps are needleless and syringes can be attached directly.
- Adjust IV flow.
- Tape needle to catheter.
- Administer medications IVP via main line.
- Flush well with normal saline following each medication administered.

Accessing Hemodialysis Fistula:

- · Prior to access, check site for bruits and thrills.
- Access fistula on venous side (side with weaker thrill in patient with a pulse).
- Inflate BP cuff around IV bag to just above patient's systolic BP to maintain flow of IV.
- If unsuccessful in accessing site, hold direct pressure over site for 10 minutes.

Complications:

- **Infection** due to the location of the catheter, strict adherence to aseptic technique is crucial when handling a PVAD.
 - Use clean gloves at all times.
 - Prep injection port with alcohol swab prior to attaching IV tubing.
 - Obtain new supplies if equipment becomes contaminated.
- **Air embolism -** the PVAD provides a direct line into the circulation, therefore, the introduction of air into these devices can be hazardous.
 - Do not remove injection cap from catheter.
 - Do not allow IV fluids to run dry.
 - Always expel air from preload/syringe prior to administration.
- **Thrombosis** a blood clot within the vascular system can be caused by improper handling and maintenance of the PVAD; dislodging a clot can cause a pulmonary embolus or vascular damage.
 - Follow medications with 10 mL normal saline.
 - Do not inject medications or fluids if resistance is met when establishing patency.
- Catheter damage should damage occur to the external catheter, clamp immediately between the skin exit site and the damaged area to prevent air embolism or blood loss.
 - Use patient's clamp or padded hemostats if available or fold and tape tubing to clamp.
 - Always use a minimum of a 10 mL syringe to prevent catheter damage from excess infusion pressure.

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