VASOPRESSOR INFUSION – ICU/ED

PURPOSE: To outline the management of the patient receiving vasopressors.

SUPPORTIVE DATA: Vasopressors are used to increase systemic vascular resistance (SVR) and BP. The vasopressors included in this standard are angiotensin II (Giapreza), dopamine, epinephrine, norepinephrine (Levophed), phenylephrine (Neosynephrine) and vasopressin. Prior to initiation of these agents, fluid resuscitation and correction of acid-base abnormalities should be attempted. Inotropic support may be considered.

Refer to Inotrope-ICU Nursing Clinical Standard for vasoactive infusions given for inotropic effect.

Central lines are recommended for vasopressors, but peripheral lines may be used ***temporarily*** for Norepinephrine, Epinephrine, and Phenylephrine. If using a peripheral line, recommend a large bore angiocath in a proximal vein. This reduces the chance of extravasation.

**Duration: Until vasopressor weaned or 24 hours completed, whichever occurs first. If greater than 24 hours, patient requires multiple pressors higher than recommended rates (see table below) or higher than standard concentration drips required, then a central line should be placed.
Exception to duration limit: Active process for central line access occurring or end-of-life scenarios in which patient is pending transition to comfort measures in near future.

ASSESSMENT:

1. Assess vital signs including hemodynamics (if applicable) prior to initiating drug, 5-10 minutes post rate change then a minimum of every 2 hours when stable.
2. Determine concentration and verify dosage with IV bag changes and within one hour of assuming care of the patient or earlier as clinically appropriate. In addition, verify accurate dosage with every rate change.
3. Assess IV site hourly for the following signs of extravasation if infused via a peripheral line:
   - Burning or tingling at infusion site
   - Mild erythema
   - Pruritus
   - Swelling
4. Assess peripheral perfusion a minimum of q4h including:
   - Pulses
   - Capillary refill
   - Skin temperature
   - Skin Color
5. Monitor blood glucose as drawn.

ADMINISTRATION:

6. Ensure order is complete. Order to include:
7. Vasopressor
8. Initial infusion rate
9. Titration parameters, including maximum dose
10. If on multiple vasopressors; review provider order for order of vasopressors to be weaned off first

11. Administer vasopressor through a central line whenever possible. If using peripheral line, recommend a large bore angiocath in a proximal vein. This reduces the chance of extravasation.

12. If using a peripheral line, check for extravasation hourly.

13. Infuse medications as ordered. See table for recommended adult dosages. NICU- refer to Neofax; PICU -refer to the Pediatric Drug Dosage Handbook.

14. Titrate within ordered parameters to achieve the desired effect while continuously monitoring vital signs and hemodynamic parameters.

SAFETY:

15. Ensure the following:
    - Patent IV access
    - Use IV tubing without Y site connectors for all vasoactive medication infusions.
      (IV sets without additional access ports).
    - Infusion pump with Guardrails is used for administration
    - Drug concentration and dosage are correct and within prescribed parameter(s)
    - Drug compatibility

REPORTABLE CONDITIONS:

16. Notify the provider immediately for:
    - Inability to achieve/maintain desired effect within ordered dosage parameter(s)
    - Dysrhythmias
    - IV infiltration
    - Decreasing/worsening peripheral perfusion

PATIENT/CAREGIVER EDUCATION:

17. Instruct on the following:
    - Rationale for vasopressor
    - Need for frequent monitoring

ADDITIONAL STANDARDS:

18. Refer to the following as indicated:
    - Arterial Line - ICU
    - Central Venous Catheter
    - Pulmonary Artery Catheter - ICU

DOCUMENTATION:

19. Document in accordance with documentation standards.

USUAL ADULT DOSAGES
(Administer per Provider Order)

Medication	Usual initial Dose	Dose Related Effects	Usual Maximum Dose	Comments
Angiotensin II (Giapreza)	10-20 ng/kg/minute		Maximum dose during first 3 hours: 80 ng/kg/minute Max maintenance dose: 40 ng/kg/minute	Restricted to patients in septic shock who are vasopressor refractory
Dopamine	5-8 mcg/kg/minute for hypotension	β-adrenergic: 5-10 mcg/kg/min α-adrenergic > 10 mcg/kg/min	20 mcg/kg/min	
Epinephrine	1-2 mcg/min	β-adrenergic: < 6 mcg/min α -adrenergic: >6 mcg/min	10 mcg/min (central and peripheral)	
Norepinephrine (Levophed)	1-2 mcg/min	-	Central: 50 mcg/min Peripheral: 20 mcg/min	
Phenylephrine (Neosynephrine)	50-180 mcg/minute	-	Central: 200 mcg/min Peripheral: 100 mcg/min	
Vasopressin	0.03 or 0.04 units/minute	-	0.04 units/minute	Does not require titration

Initial date approved:	Reviewed and approved by:	Revision Date:
08/03	Critical Care Committee Professional Practice Committee Nurse Executive Council Attending Staff Association Executive Committee	05/11,10/15, 07/19, 03/24

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