Norepinephrine Bitartrate in 5% Dextrose

1.0 Classification

- Sympathomimetic

2.0 Mechanism of Action

- Acts as an alpha- and $beta_1$- adrenergic agonist causing vasoconstriction and increased myocardial contractility.

3.0 Indications

- Septic shock
- Neurogenic shock
- Cardiogenic shock

4.0 Contraindications

- Hypovolemia (hemorrhage, dehydration)

5.0 Precautions

- Extravasation of norepinephrine may lead to tissue necrosis.
- Ensure vascular access in a large vein when possible (18 gauge in the antecubital fossa preferred) to avoid irritation.
- Norepinephrine should not be administered with sodium bicarbonate simultaneously as norepinephrine is inactivated in alkaline solutions.
- Norepinephrine should be used with extreme caution for patients receiving monoamine oxidase (MAO) inhibitors.
- Norepinephrine should be used with extreme caution for patients receiving triptyline or imipramine antidepressants.

6.0 Route

- May be given IV/IO

7.0 Dosage

Adult

- Initiate an infusion **via infusion pump** at 0.05 to 0.1 mcg/kg/min. Adjust infusion rate in increments of 0.05 to 0.1 mcg/kg/min as frequently as q1-5 min to achieve/maintain target blood pressure. The usual max dose is 1 mcg/kg/min.

8.0 Supplied

- 8 mg premixed in a 250 mL 5% dextrose bag (32 mcg/mL)

9.0 May Be Given By

- ACP/CCP

10.0 Adverse Effects

- Arrhythmias
- Tachycardia

- Reflex bradycardia
- Angina
- Hypertension
- Vasoconstriction (observe extremities, lips, and earlobes)
- Anxiety
- Headache
- Extravasation at the injection site

11.0 Special Notes

- Norepinephrine must be given through an infusion pump.
- Most shock states require fluid administration prior to vasopressors therefore normal saline should be initiated prior to norepinephrine administration.
- It is recommended to administer a normal saline infusion by gravity with any norepinephrine infusion. To do this:
    - Initiate a normal saline infusion at a rate appropriate to patient condition via gravity (i.e., not through the pump)
    - Connect the norepinephrine infusion (via the pump) to the access port of the normal saline infusion line proximal to the patient
    - This will help as a driver when volumes of medication being infused are small
- Focus on fluid administration in patients with hypovolemic shock.
- Epinephrine is the vasopressor of choice within the EHS ground ambulance system for pediatric patients ≤ 16 years of age.
- May cause fetal anoxia when used in pregnancy.
- Pregnancy category D [potential benefits may warrant use of the drug in pregnant women despite potential risks (e.g., if it is required in a life-threatening situation)]

12.0 References

- Sepsis Syndrome Clinical Practice Guideline
- Shock Clinical Practice Guideline
- Cardiac Arrest Adult Cardiac Arrhythmia Clinical Practice Guideline
- Baxter.ca

*Electronically Signed