

Protocol 9-13

SECTION: Pediatric General Medical Emergencies

PROTOCOL TITLE: Medical – Hypotension/Shock (Non-trauma)

REVISED: 06/2017

OVERVIEW:

Shock is defined as a state of inadequate tissue perfusion. This may result in acidosis, derangements of cellular metabolism, potential end-organ damage, and death. Early in the shock process, patients are able to compensate for decreased perfusion by increased stimulation of the sympathetic nervous system, leading to tachycardia and tachypnea. Later, compensatory mechanisms fail, causing a decreased mental status, hypotension, and death. Early cellular injury may be reversible if definitive therapy is delivered promptly.

HPI	Signs and Symptoms	Considerations
<ul style="list-style-type: none"> Blood loss (vaginal or gastrointestinal) Fluid loss (vomiting, diarrhea) Fever Infection Medications Allergic Reaction Pregnancy, ectopic Trauma 	<ul style="list-style-type: none"> Restlessness, confusion Weakness, dizziness Weak, rapid pulse Pale, cool, clammy skin Delayed capillary refill Hypotension Coffee-ground emesis Tarry stools 	<ul style="list-style-type: none"> Hypovolemic Cardiogenic Septic Neurogenic Anaphylactic Ectopic pregnancy Dysrhythmia Pulmonary embolus Tension pneumothorax Medication effect / overdose Vaso-vagal Trauma

	EMR	EMT	A	I	P
1. Perform general patient management.	•	•	•	•	•
2. Support life-threatening problems associated with airway, breathing, and circulation.	•	•	•	•	•
3. Assess for signs of shock including, but not limited to: <ul style="list-style-type: none"> Restlessness, altered mental status, hypoperfusion (cool, pale, moist skin), tachypnea (rapid breathing), rapid, weak pulse, orthostatic hypotension (blood pressure suddenly drops on standing up), nausea and thirst. 	•	•	•	•	•
4. Administer oxygen to maintain SpO_2 94 - 99%. Support respirations as necessary with a BVM.	•	•	•	•	•
5. Transport as soon as possible.		•	•	•	•
6. Control external bleeding with direct pressure, then <u>tourniquet</u> if direct pressure is inadequate.	•	•	•	•	•
7. Establish a large bore IV or IO of Normal Saline. If time permits, establish second access. <ul style="list-style-type: none"> Do not delay transport to establish vascular access 			•	•	•

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Continued

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	EMR	EMT	A	I	P
8. Maintain systolic BP appropriate for patient: a. Birth to 1 month - 60 mmHg b. 1 month to 1 year - > 70 mmHg c. Greater than 1 year - 70 + [2 x Age (years)]			•	•	•
9. Give a 20 mL / kg bolus. If no improvement after first 20 mL / kg bolus, may repeat once. While administering a fluid bolus, frequently reassess perfusion for improvement. If perfusion improves, slow the IV to KVO and monitor closely. If patient develops fluid overload respiratory distress (dyspnea, crackles, rhonchi, decreasing SpO ₂), slow the IV to KVO.			•	•	•
10. Place the patient on the cardiac monitor.				•	•
11. Transport and perform ongoing assessment as indicated.		•	•	•	•

Classes of Shock

Hypovolemic	Distributive	Cardiogenic	Obstructive
Caused by hemorrhage, burns, or dehydration.	Maldistribution of blood, caused by poor vasomotor tone in neurogenic shock, sepsis, anaphylaxis, severe hypoxia, or metabolic shock.	Caused by necrosis of the myocardial tissue, or by arrhythmias.	Caused by impairment of cardiac filling, found in pulmonary embolism, tension pneumothorax, or cardiac Tamponade.

PEARLS:

1. GI bleeding may be a less obvious cause of hypovolemic shock if it has been gradual. Ask patient about possible melena, hematemesis, and hematochezia.
2. Ectopic pregnancy may be a less obvious cause of hypovolemic shock. Consider this diagnosis in all female patients of child-bearing age if there is a complaint of abdominal or pelvic pain.