# Nursing Care of Patients in Shock

Chapter 9

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## Shock

Circulatory collapse resulting in organ damage and death without immediate treatment

Shock

## Pathophysiology of Shock

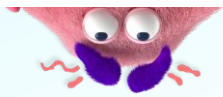
Inadequate tissue perfusion

Tissue perfusion and B/P are maintained by:

- Adequate blood volume
- Effective cardiac pump
- Effective blood vessels

Compensation (Compensatory Mechanism)

- Once system fails and changes are made in one or both of nonfailing systems
- Shock occurs when compensatory mechanism fails



## Metabolic and Hemodynamic Changes in Shock

Epinephrine/NorEpi released triggering ↓

**Sympathetic nervous system**

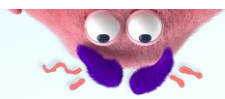
- Tachycardia
- Tachypnea
- Oliguria
- Cool, clammy skin with pallor

**Decreased blood pressure**

## Effect on Organ and Organ Systems

Tissue ischemia and organ injury

Brain death if anoxic over 4 minutes



## Complications from Shock

Decreased clotting factor

- Acute respiratory distress syndrome (A R D S)
- Disseminated intravascular coagulation (D I C)
- Multiple organ dysfunction syndrome (M O D S)

Classification of Shock

| | |
|---|---|
| Hypovolemic shock | • Decreased circulating blood volume |
| Cardiogenic shock | • Cardiac failure |
| Obstructive shock | • Blockage of blood flow outside heart |
| Distributive shock | • Excessive dilation of venules/arterioles |

Characteristics of all shock is decreased blood pressure - below level to maintain adequate blood flow to tissues.

## Hypovolemic Shock

- Decreased circulating volume
- Any severe loss of body fluid including dehydration

- Causes
  - Dehydration, hemorrhage
  - Loss of fluid from burns, vomiting, diarrhea, or intravascular into interstitial space

- Signs and Symptoms
  - Restlessness, altered mental status
  - Pale, cool, clammy skin
  - Tachycardia, tachypnea
  - Nondistended peripheral veins, decrease jugular vein circumference
  - Decrease urine output

## Cardiogenic Shock

- Cardiac failure, heart fails to adequately pump blood to the body

- Causes
  - Acute myocardial infarction
  - Rupture of heart valve
  - Acute myocarditis/cardiomyopathy
  - End stage heart disease
  - Severe dysrhythmias (A-fib)
  - Traumatic injury to the heart
- Signs and Symptoms
  - Similar to hypovolemic – plus-
  - Distended jugular and peripheral vein
  - Pulmonary edema, extreme shortness of breath, wheezing and gasping for breath, coughing white frosty sputum

## Obstructive Shock

- Blocked blood flow outside heart

- Causes
  - Pericardial tamponade- Pericardial sac fills with blood
  - Tension pneumothorax- compression of heart with air in pleural spaces
  - Acute pulmonary hypertension- increase pressure in pulmonary artery
- Signs and Symptoms
  - Similar to hypovolemic
  - Distended jugular

## Distributive Shock

Peripheral vascular is loss due to excessive dilation of venules/arterioles

Types

- Anaphylactic shock
- Septic shock
- Neurogenic shock

## Anaphylactic Shock

Extreme hypersensitivity reaction to antigen, death in minutes

- Causes
  - Insect stings, antibiotics, peanuts, anesthetics, dye, blood
- Signs and symptoms
  - Similar to hypovolemic shock
  - Allergic reactions, rash, urticaria, laryngeal edema, severe bronchospasm, wheezing
  - Conscious: SOB, metallic taste
  - Administer Epinephrine (Adrenaline) and O2

First action is to maintain airway patency, Highest priority

- Monitor lung sounds and SpO2

## Septic Shock

- Systemic infection and inflammation

- Causes
  - Gram negative bacteria
  - Multidrug resistant bacteria and fungi
- Predisposing conditions
  - Trauma
  - Diabetes
  - Corticosteroid therapy
  - HIV
  - Chemotherapy
  - Burns
  - Malnutrition
  - Invasive catheters

## Septic Shock

- Signs and Symptoms
  - Early Phase
    - Warm/flushed skin
    - Fever, elevated WBC's
    - Decreased B/P, tachycardia
    - tachypnea
  - Second Phase
    - Decreased B/P, tachycardia, nondistended jugular and peripheral veins, cold clammy skin
    - Tachypnea
    - Oliguria
    - Temperature decreases to normal or subnormal
    - Altered mental status

Leading cause of death in critically ill clients

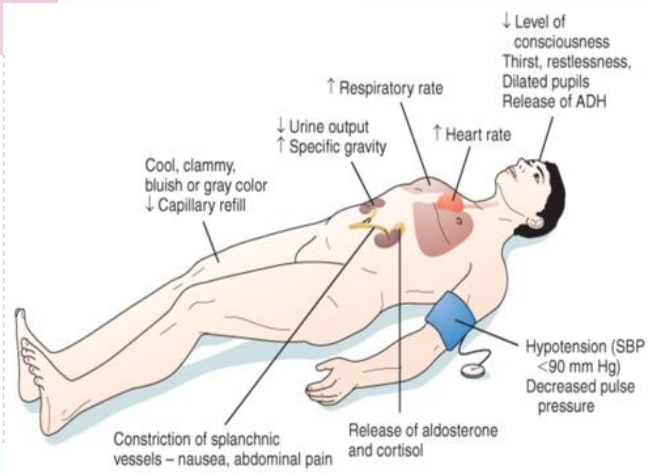
## Neurogenic Shock

- Dysfunction or injury of the nervous system, dilation of peripheral blood vessels

- Causes
  - General anesthesia
  - Fever
  - Metabolic disturbances
  - Brain contusions/concussions
- Signs and Symptoms
  - Decreased B/P, altered mental status
  - Early s/s: bradycardia, warm dry skin
  - Late s/s: tachycardia, cool clammy skin

## Classic Signs of Shock

- Tachycardia
- Tachypnea
- Oliguria
- Pallor, and cool clammy skin



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## Therapeutic Measures for Shock

- Maintain airway/respiratory support.
- Provide cardiovascular support.
- Maintain circulatory volume.
- Control bleeding.
- Treat cause/identify source of infection.

## Nursing Care

- Maintain airway, oxygenation.
- Monitor vital signs.
- Monitor intake and output.
- Provide fluids as ordered.
- Provide warmth.
- Relieve pain.
- Monitor for pressure injury (vasopressor use).

## Review Question

**The nurse is reinforcing teaching to the family of a patient experiencing hypovolemic shock. Which of these would the nurse correctly state causes hypovolemic shock?**

1. "Circulating blood volume is decreased."
2. "The heart fails to pump blood."
3. "There is a blockage of blood flow outside the heart."
4. "Excessive dilation of blood vessels occurs."

## Review Question

**Which action would be appropriate for the nurse to take for a patient with cardiogenic shock?**

1. Administer epinephrine as ordered.
2. Give ordered antimicrobials within 1 hour.
3. Question I V fluid orders.
4. Provide ordered nutrition.

Review Question

**The nurse reinforces teaching to a patient with allergies that includes which of these?**

1. Sleep with head of bed elevated.
2. Carry epinephrine autoinjector.
3. Do ankle exercises hourly.
4. Change positions slowly.

Review Question

**Which of these would the nurse implement as the ***priority*** action for the patient with newly diagnosed septic shock?**

1. Obtain blood cultures before antibiotics.
2. Give broad-spectrum antibiotics within 1 hour of septic shock diagnosis.
3. Monitor ordered I V fluids.
4. Provide ordered enteral nutrition.

# Review Question

**Which of these interventions would the nurse implement for the patient experiencing shock? *Select all that apply.***

1. Maintain airway, oxygenation.
2. Monitor vital signs.
3. Monitor intake and output.
4. Ambulate patient bid.
5. Relieve pain.
6. Check capillary refill in older adult.