



Physiology
OF THE CARDIOVASCULAR SYSTEM

Shock

1- In shock, the hydrostatic pressure & oncotic pressure is constant:

- A. Constant
- B. No changes
- C. Decreases
- D. Increases

2- A 82-year-old diabetic is involved in an automobile accident, with severe thoracic and abdominal traumatic injuries. He is rushed to the hospital and placed in the intensive care unit. After a few hours, there is the rapid onset of myocardial dysfunction, hypotension, disseminated intravascular coagulation, and coma. This sequence of events most closely mimics what type of shock:

- A. Anaphylactic
- B. Cardiogenic
- C. Hypovolemic
- D. Neurogenic
- E. Septic (Distributive)

3- In **hypovolemic shock** the decreased in CO is due to :

- A. Inadequate blood/plasma volume
- B. Reduced venous return
- C. Failure of myocardial pump
- D. A&B

4- The CO is normal or elevated in which of shock types:

- A. Hypovolemic shock
- B. Cardiogenic shock
- C. Distributive shock
- D. Obstructive shock

5- The heart pump is well but there is peripheral vasodilation:

- A. Hypovolemic shock
- B. Cardiogenic shock
- C. Distributive shock
- D. Obstructive shock

6- The heart fails to pump blood out:

- A. Hypovolemic shock
- B. Cardiogenic shock
- C. Distributive shock
- D. Obstructive shock

7- In fluid – shift mechanism in shock the fluid return from the extracellular space to the capillary decreases.

- A. *True*
- B. *False*

8- In fluid – shift mechanism in shock The fluid exchange from the capillary to the extracellular space decreases.

- A. *True*
- B. *False*

9- At arterial end, the water moves out of the capillary.

- A. *True*
- B. *False*

10-At venous end, the water moves into the capillary with a NFP of +5mmHg

- A. *True*
- B. *False*

Answers:

Q1 : **C**

Q2 : **E** (It's not A or D (no head injury). It's not primarily cardiogenic (B), because they don't describe symptoms of heart failure. Hypovolemic shock wouldn't cause DIC (or probably even myocardial dysfunction).

Q3 : **D**

Q4 : **C**

Q5 : **C**

Q6 : **B**

Q7 : **B** (Increases)

Q8 : **A**

Q9 : **A**

Q10: **B** (with a NFP -5 mmHg)

Pathology Link:

A 20-year-old man is brought to the emergency room after rupturing his spleen in a motorcycle accident. His blood pressure on admission is 80/60 mm Hg. Analysis of arterial blood gasses demonstrates metabolic acidosis. This patient is most likely suffering from which of the following conditions?

- (A) Acute pancreatitis
- (B) Cardiogenic shock
- (C) Hypovolemic shock
- (D) Septic shock

Answer: *Hypovolemic shock is secondary to a pronounced decrease in blood or plasma volume, caused by the loss of fluid from the vascular compartment. Hemorrhage, fluid loss from severe burns, diarrhea, excessive urine formation, perspiration, and trauma are major mechanisms of fluid loss that can lead to hypovolemic shock. Cardiogenic shock (choice B) is caused by myocardial pump failure. Septic shock (choice D) is improbable in this setting.*

Diagnosis: *Hypovolemic shock.*

