

# shock

Treatment	Key Mechanism / Notes	Causes	Type of Shock
<p><b>1. Position:</b> Recumbent + elevate lower limbs  <b>2. Vasopressors:</b> Ephedrine 25 mg IV OR Dopamine 10–50 µg/kg/min IV infusion  <b>3. Severe pain:</b> Morphine 5–15 mg IV</p>	<ul style="list-style-type: none"> <li>• Loss of sympathetic tone → pooling of blood in lower body</li> <li>• Significant vasodilatation</li> </ul>	<ul style="list-style-type: none"> <li>• Spinal anesthesia or spinal trauma → ↓ sympathetic activity → vasodilation → ↓ BP</li> <li>• Pain or anxiety → release of mediators (kinin, histamine) → vasodilation</li> </ul>	<b>1. Neurogenic Shock</b>
<p><b>1. Volume replacement:</b> Blood, plasma, fluids**  <b>2. Dopamine</b> 2–5 µg/kg/min to dilate renal vessels → protect kidneys  <b>Note:</b> Correct hypovolemia before increasing dopamine rate</p>	<ul style="list-style-type: none"> <li>• Reduced circulating blood volume → decreased organ perfusion</li> </ul>	<ul style="list-style-type: none"> <li>• Rapid loss of large volume of blood (hemorrhage)</li> <li>• Loss of plasma (burns)</li> <li>• Loss of fluids (severe vomiting, diarrhea)</li> </ul>	<b>2. Hypovolemic Shock</b>
<p><b>1. Treat cause</b>  <b>2. Dobutamine IV infusion</b> 2.5–10 µg/kg/min            Selective β<sub>1</sub> agonist → ↑ cardiac contractility with minimal ↑ HR → ↑ cardiac output without major ↑ O<sub>2</sub> demand            • Does not stimulate dopaminergic receptors</p>	<ul style="list-style-type: none"> <li>• Pump failure → heart cannot maintain cardiac output</li> </ul>	<ul style="list-style-type: none"> <li>• Myocardial infarction</li> <li>• Massive pulmonary embolism</li> <li>• Myocarditis</li> <li>• Dysrhythmia</li> </ul>	<b>3. Cardiogenic Shock</b>
<p><b>1. Adrenaline IM</b> 0.5–1 mg, repeat in 5–10 min (life-saving)  <b>2. Antihistamine IV (H1 blocker)</b>  <b>3. Hydrocortisone or prednisolone IV</b>  <b>Notes:</b>            Adrenaline = physiological antagonist to histamine            Antihistamines = competitive antagonists at H1 receptors            Steroids ↓ inflammation by inhibiting PLA<sub>2</sub>, reducing COX-2, stabilizing mast cells, ↓ histamine release, ↓ immune response, and ↑ blood volume (salt/water retention)</p>	<ul style="list-style-type: none"> <li>• Massive release of mediators</li> <li>• Bronchoconstriction + vasodilation + capillary leakage</li> </ul>	<ul style="list-style-type: none"> <li>• Hypersensitivity reaction to antigen (e.g., penicillin)</li> <li>• Release of histamine, leukotrienes, prostaglandins → severe vasodilation → shock</li> </ul>	<b>4. Anaphylactic Shock</b>
<p><b>1. Full doses of bactericidal antibiotics</b> (until culture results)  <b>2. Corticosteroids</b> (e.g., dexamethasone)  <b>3. Dopamine infusion</b>  <b>4. Monoclonal antibodies against endotoxins</b>  <b>Steroid effects:</b> Restore cardiovascular homeostasis, terminate inflammation, restore organ function, correct early hypovolemia (via Na<sup>+</sup>/water retention), ↑ sensitivity to α-agonists → ↑ MAP &amp; SVR</p>	<ul style="list-style-type: none"> <li>• Systemic inflammation</li> <li>• Vasodilation + capillary leakage</li> <li>• Multiorgan dysfunction risk</li> </ul>	<ul style="list-style-type: none"> <li>• Gram-negative (mainly) or gram-positive bacterial infection → endotoxin release → vasodilation</li> </ul>	<b>5. Septic Shock</b>

## Additional General Information

### Definition of Shock

Severe, generalized reduction of tissue perfusion of oxygen and nutrients due to microcirculatory failure, leading to reversible then irreversible tissue injury.

### Clinical Picture of Shocked Patients

- Arterial BP < 60 mmHg
- Low cardiac output (CO)
- Tachycardia
- Urine output < 20 mL/hour
- Anxiety, confusion, pallor, sweating

### Aim of Treatment

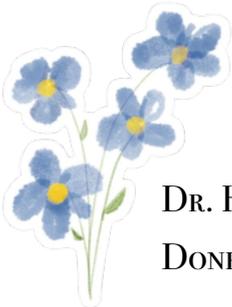
- Treat the cause
- Replace lost fluid
- Maintain diastolic BP & vital organ perfusion

### Precautions

- Avoid sedatives
- Avoid alcohol
- Avoid overheating
- Avoid head-down position (instead, elevate feet 15–30 cm)

"نحن مسلمون، نعول على البركة لا على الوقت".

اللهم اطرح البركة في أوقاتنا وأدهشنا بعظيم توفيقك وجبرك وألطفك. 



DR. HEBA AHMED HASSAN

DONE BY : RAGHAD MRAYAT 

لَا حَوْلَ وَلَا قُوَّةَ إِلَّا بِاللَّهِ

"من كنوز الجنة"

