

1. scene size-up
2. initial assessment (initial life threatening ABC)
3. ...
4. ...
5. ...
6. ... radial pulse ... brachial, carotid pulse ... SBP < 80 mm.Hg ... IV

Decreased cardiac contractility / pump

Cardiogenic shock

Decreased SV and CO

pulmonary congestion

Decreased tissue perfusion

Decreased muscle

Coagulopathy

non-trauma

Acidosis pH < 7.2

Hypothermia

Hypothermia < 35°C

Hypovolemic shock

Decreased intravascular volume

External bleeding

Internal bleeding

rib ~ 125ml

fx > 1,000ml - 1,500ml

numerous ~ 500-750ml

femur ~ 1,000-2,000ml

Decreased venous return → Decreased stroke volume

SHOCK

early stage

Circulatory shock

MAP < 40 mm.Hg

HR, RR ↑ sys BP > 90 mm.Hg

compensatory stage

MAP ↓ 10-15 mm.Hg

sys BP < 90 mm.Hg

tachycardia, urine output ↓

noncompensatory stage

MAP ↓ < 20 mm.Hg

sys BP < 90 mm.Hg, anuria

metabolic acidosis

sympathetic nervous system ↓ → vasodilatation → peripheral vascular resist ↓ → venous return ↓

Septic shock

infection → SIRS

HR > 90/min

RR > 20/min

WBC > 12,000 cells/ml or < 4,000 cells/ml

Sepsis

RR > 22/min

altered mentation

SBP < 90 mm.Hg

anaphylactic shock

antibody + antigen → mast cells → cytokines → vasodilatation → permeability → venous return ↓

neurogenic shock

parasympathetic nervous system → vasodilatation → venous return ↓ → CO ↓

Obstructive shock

cardiac tamponade, pneumothorax, pulmonary embolism → venous return / CO ↓