Temperature emergencies and hypotensive resuscitation

SAQ 1

For each of the following patients, state whether permissive hypotension (hypotensive resuscitation) is appropriate and give a reason for your answer.

a. An 18-year-old unrestrained male driver involved in a rollover MVA where he was ejected from the car. On arrival, BP 100/60, HR 120, GCS 6/15. FAST scan positive.

b. 34-year-old female, currently 16/40 pregnant, presents with significant stab wound to abdomen secondary to domestic violence. BP 80/60, HR 110.

c. 92-year-old female from a HLCNH. Suffered an unwitnessed fall down stairs at NH. GCS 9/15, BP 110/60, HR 130 irregular. Tense, rigid abdomen on examination.

SAQ 2

a. List three indications for therapeutic hypothermia in cardiac arrest.

b. Briefly describe how you would achieve temperature reduction in therapeutic hypothermia.

c. For each of the following, circle whether therapeutic hypothermia is indicated or contraindicated. Assume each patient has achieved ROSC after an out of hospital arrest.

Pregnancy	Indicated	Contraindicated
Terminal illness	Indicated	Contraindicated
ROSC <60 mins	Indicated	Contraindicated
Uncontrolled arrhythmia	Indicated	Contraindicated
Initial temperature >30	Indicated	Contraindicated
Coagulopathy	Indicated	Contraindicated
Initial arrest PEA/asystole	Indicated	Contraindicated

d. In terms of prognosis post cardiac arrest, give one clinical sign (if one exists) that suggests poor outcome after:

   i. Cardiac arrest with NO therapeutic hypothermia

   ii. Cardiac arrest WITH therapeutic hypothermia

SAQ 3

A 35 year old male with no past psychiatric history is brought in by SAPOL netted after being violent towards his parents. He is taken to the resuscitation room upon arrival. His BP is 140/90, HR 145, Sats 99% RA, RR 30 and T 39°C.

a. List five medications/toxins that could explain his presenting symptoms.

b. List three investigations you will order immediately, with justification for each.

c. Upon further questioning, you discover he suffers from migraine and has been self-treating a persistent migraine for the last few days. His blood gas is as follows:

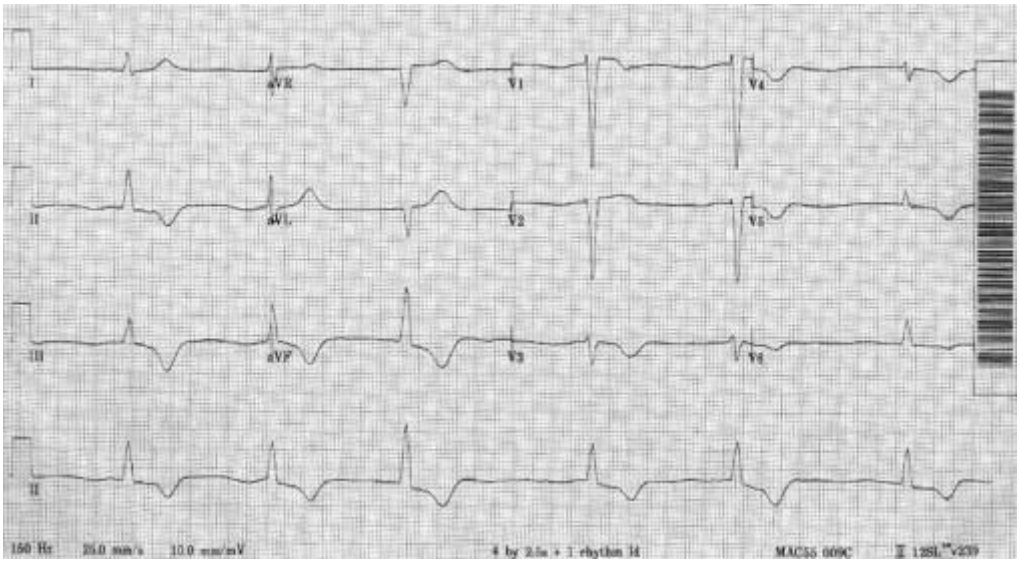
pH 7.48
CO2 29
O2 155
HCO3 17
Na 142
Cl 100
K 3.2
Glu 2.4

Describe and interpret the ABG.

d. What two treatments will you now initiate?

SAQ 4

A 42-year-old female doctor is brought to ED after completing a January marathon. She is confused and agitated. Her BP is 100/60, HR 36, and T 37.2°C (axilla). She is taken to the resuscitation room on arrival. Her ECG is shown below:



a. List three abnormalities on the ECG and give a likely diagnosis for her presentation.

b. List three ECG changes seen in severe hyperthermia.

c. Her core temperature is measured in ED at 41.5°. You decide to initiate cooling. Briefly describe the difference between the following methods of cooling:

   Conduction

   Convection

   Radiation

d. List two complications of heatstroke or its treatment, and how you will prevent/treat the complication.