**SAQ 24**

**Reference:** Chan p. 282

**1. List 3 key ECG features of significant HYPOkalaemia.** *1 mark for each. Easy question, so borderline is 2.*

**a.** QTc prolongation

**b.** Prominent U wave

**c.** T wave flattening

Others (of equal value): PR prolongation, increased P wave amplitude and width, ST depression, *torsades de pointes*, atrial ectopics, ventricular ectopics, atrial tachyarrhythmias (fibrillation, flutter). NB: “arrhythmia” without qualification does not count.

**2. List 3 key ECG features of significant HYPERkalaemia.** *1 mark for each. Easy question, so borderline is 2.*

**a.** Tall, tented T waves

**b.** Prolonged or widened QRS

**c.** Flattened, or loss of P waves

Others (of equal value): Prolonged PR interval, sine wave pattern, bundle branch blocks, VF, asystole. NB: “arrhythmia” without qualification does not count.

**3. A man has severe HYPERkalaemia secondary to overdose of potassium supplements. He has cardiac instability and an abnormal ECG with dynamic changes. There are no concurrent abnormalities. List 5 treatment options for this acute condition. For each, describe its mechanism of action.**

**Reference:** Cameron p.542

*Preamble: Strategies for managing hyperK are cardiac cell membrane stabilization; K shift (return to ICF); enhance K elimination. These are in decreasing order of priority in this scenario. While not a requisite for borderline score, perfect marks requires that you order them accordingly. That’s the hallmark of a senior clinician who’s done this before – ie, you!*

1. IV Ca Cl - 5 to 10 ml of 10% solution. Antagonises K cardiac toxicity, hence stabilizes cardiac cell membrane. Ca gluconate acceptable, but use 15 – 30 ml, as lower concentration.
2. IV insulin – 20U with 50g glucose. Shifts K back into ICF.
3. IV NaHCO3 – 80 to 100 ml of 8.4% solution, equating to 1mmol/kg. Shifts K back into ICF.
4. Nebulized salbutamol 5mg. Shifts K back into cell.
5. Rectal resonium. Enhanced K elimination from GIT.

Others (of equal value): Frusemide diuresis; haemodialysis.

*2 marks each, therefore maximum of 10. Another easy question, so borderline score is 8. Bits in red are requisite for borderline mark. Must have 2 methods (any 2) to shift K into cells.*

***Overall borderline score is 12/16.***