

**Please read this bit first**

The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a "Journal Club" activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out "correct" answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT00025**.

Each attendee should claim **THREE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

## September 2008

### Hyperkalaemia

#### Case presentation

A normotensive 76-year-old man was admitted for investigation of a cardiac arrhythmia. He gave a four-month history of malaise and generalized muscular pain. He was on no medication, his family and past history revealed nothing significant. The admission plasma electrolyte values were as follows:

#### Plasma

Na	137	mmol/L	(132-144)
K	6.0	mmol/L	(3.2-4.8)
Cl	104	mmol/L	(98-108)
HCO	25	mmol/L	(23-33)
Urea	16.5	mmol/L	(3.0-8.0)
Creat	180	µmol/L	(60-120)
AGap	14	mEq/L	(7-17)
Gluc	4.8	mmol/L	(3.0-5.5 fasting)

#### Case discussion

Repeated plasma potassium values on the patient over the next two days revealed levels ranging from 5.6 to 6.4 mmol/L. His peripheral blood picture showed normal values for white cells and, platelets, and his normal blood glucose level excluded diabetes mellitus.

The patient was well hydrated which indicated that his raised plasma levels of urea and creatinine reflected a mild degree of renal insufficiency. As the plasma [creatinine] was <0.35 mmol/L it was felt that this degree of renal insufficiency was an unlikely cause of the hyperkalaemia.

## Final diagnosis

### *Syndrome of hyporeninaemic hypoaldosteronism(SHH)*

This syndrome occurs mainly in elderly patients and is usually associated with diabetes mellitus (~50%) or interstitial nephritis. Many (~70%) of the patient have a mild to moderate degree of renal insufficiency. The syndrome is characterised by hyperkalaemia, and low (or normal) plasma levels of renin and aldosterone which do not increase in response to a number of stimuli, e.g. salt depletion and postural changes (Biglieri F.G., 1979).

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### **CPD Questions:**

1. What is the most common causes of high plasma potassium?
  2. What are the most common MEDICAL causes of hyperkalaemic?
  3. What further tests would have been performed to reach the final diagnosis?
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