

CPER digest

December 2015

You are called to a residence for an 80 year old male patient with a dispatch problem of altered LOA. Upon arrival you encounter the patient's neighbour. The patient is found sitting on the floor in the hallway. He is incontinent of feces. He weighs approximately 90 kg.

Findings: His level of awareness is altered; he opens his eyes to voice, localizes to touch and mumbles about things that makes no sense (inappropriate); GCS – 11. Airway is patent. Breathing –tachypnea is present without accessory muscle use; chest auscultation is normal. Abdomen is soft non-tender and non-distended. Skin is pale, cool and clammy.

Vitals: P – 62 regular and weak; R – 32 regular and full; SPO2 – 95% on non-rebreather mask; BP – 80/60; ETCO2 – 24 mmHG; blood glucose – 12.5 mmol/l.

Incident history: The neighbour reports he saw the patient at this same time yesterday and while he appeared unwell, the patient was not confused at that time.

Past Medical History: The patient's main caregiver is his wife who is out of town. The neighbour hands you a nursing chart with the following history: "CKD, prostate cancer (treated 1990), hypertension, anemia, UTIs". In the past few months he's been getting sicker and going for tests frequently. Recently a homecare nurse has been coming in to give him injections for "low blood". The drug is in fridge.

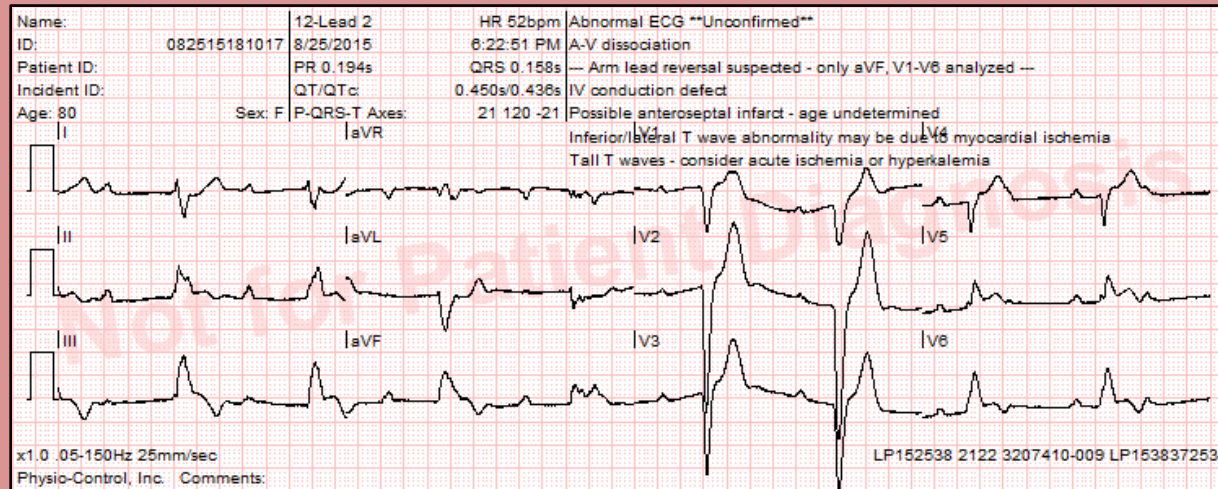
Medication: spironolactone, HCTZ, losartan (Cozaar), terazosin, ciproflaxin (expired 3 weeks ago), iron supplements. Medication found in the fridge is EPREX (epoetin alfa)

Initial Lead 2 ECG – what is your interpretation?



It's a short strip with artifact but looks like 3rd degree AV block. (Note P waves not associated with very wide QRS)

Treatment: O2 NRM, IV access, moved to stairchair. Let's do a 12 lead ECG...



What's your working diagnosis? This is an unstable patient with a complex presentation compounded by an incomplete medical history. He has at least 3 significant problems for which we need to consider the long list of differential diagnoses: altered LOA, hypoperfusion and bradycardia/heart block. If you are thinking possible acute hyperkalemia that's a good place to start. There are a number of findings, medications and history suggestive of hyperkalemia found in the patient case description:

- 🔊 ECG: Lead II is slow, very wide and presents in an AV block (3rd°). The 12LECG provides confirmation of wide QRS (0.158s) and computerized interpretation of "AV dissociation". There are high peaked T-waves in the right precordial leads (V1-3) such that the computer interpretation states: "Tall T waves – consider acute ischemia or hyperkalemia".
- 🔊 History: CKD is the common acronym for "Chronic Kidney Disease" which may indicate a pre-dialysis condition. Similarly patients that are followed regularly by a Nephrologist would likely be someone at risk for CKD.
- 🔊 Medications: though we do not have a clear history of renal impairment (most common cause of hyperkalemia we may encounter in the field), at least two medications are strongly suggestive: **EPO and iron supplements**. Both are used in chronic renal failure.
- 🔊 CNS, CVS and GI: progression to altered LOA, hypotension, GI cramps (incontinence).

After a discussion with the BHP, the ACP treats the patient as per the Hyperkalemia Medical Directive including calcium gluconate, salbutamol and IV fluid administration. The ECG corrects to a narrow complex atrial fibrillation, T-waves normalize and the rate increases. Most importantly the patient's overall condition improves. This patient did indeed have a history of chronic renal failure and was a candidate for hemodialysis.

For CPER resources related to recognizing and managing hyperkalemia go to eMedic > Courses > CPER 2014/15 APR Precourse > Presentation, Medical Directive, Reference Notes, Video, CEPCP Hyperkalemia Reading.