

ECG #24

A 60-year-old man presents to the emergency department following a collapse that proceeded a week-long history of diarrhoea and vomiting.

Describe and interpret his initial 12-lead electrocardiogram:



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DESCRIPTION:

- Ventricular rate 79 bpm
- Sinus rhythm
- PR interval 212 ms
- Normal QRS axis 9°
- QRS duration 122 ms
- Poor R wave progression
- ST segment elevation aVR, V1-2
- Upsloping ST segment depression in leads I, II, III, aVF, V4-6
- Tall, prominent, and tented T waves, most notably in leads II, and V3-5
- QTc 493 ms

INTERPRETATION:

Sinus rhythm with 1st degree atrioventricular block with concerning ST segment and T wave changes. Differential diagnosis would include diffuse subendocardial ischaemia, triple vessel disease, or hyperkalaemia.

CASE PROGRESSION:

A venous blood gas revealed severe acidaemia secondary to a maximally compensated metabolic lactic acidosis and acute renal failure. The serum potassium was 7.4 mmol/L. [Click here](#) for the ECG following treatment of the hyperkalaemia.

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ECG post-treatment of hyperkalaemia (serum potassium 5.2 mmol/L) ...



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DESCRIPTION:

- Ventricular rate 91 bpm
- Sinus rhythm
- PR interval 132 ms
- Normal QRS axis 38°
- QRS duration 110 ms
- ST segment elevation aVR, V1-2
- Upsloping ST segment depression in leads I, II, III, aVF, V4-6
- Normalised T wave morphology
- QTc 501 ms

INTERPRETATION:

Sinus rhythm with persistent ST segment and T wave changes despite resolution of hyperkalaemia. Highly suspicious for ongoing diffuse subendocardial ischaemia, severe triple vessel disease, proximal LAD occlusion, or subtotal occlusion of the

LMCA.

CASE PROGRESSION:

High-sensitivity Troponin I peaked at 25000 ng/L, however due to the patient's significant co-morbidities a decision was made to treat his acute coronary syndrome conservatively.