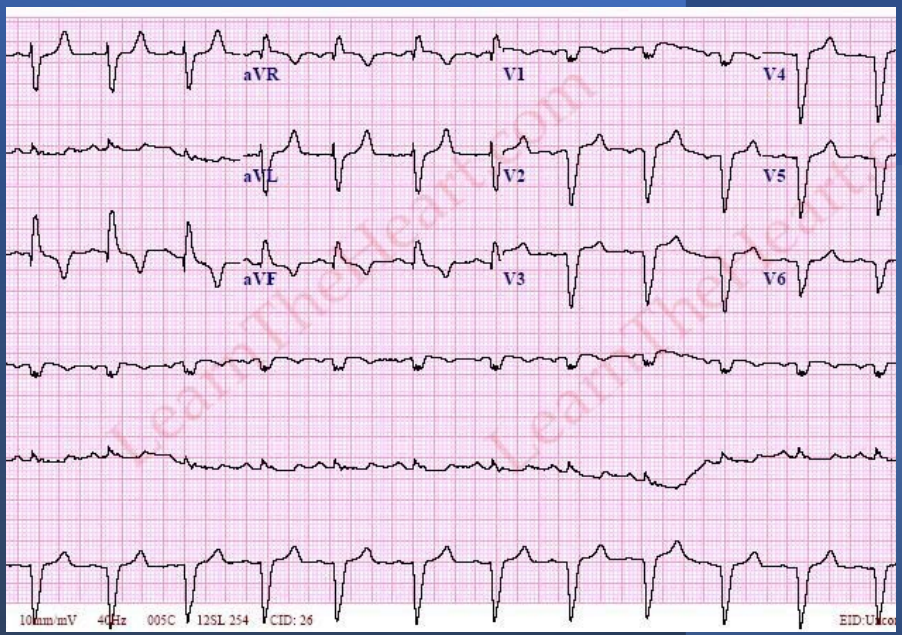
The ECG in Other Conditions

1



2

Pulmonary embolism

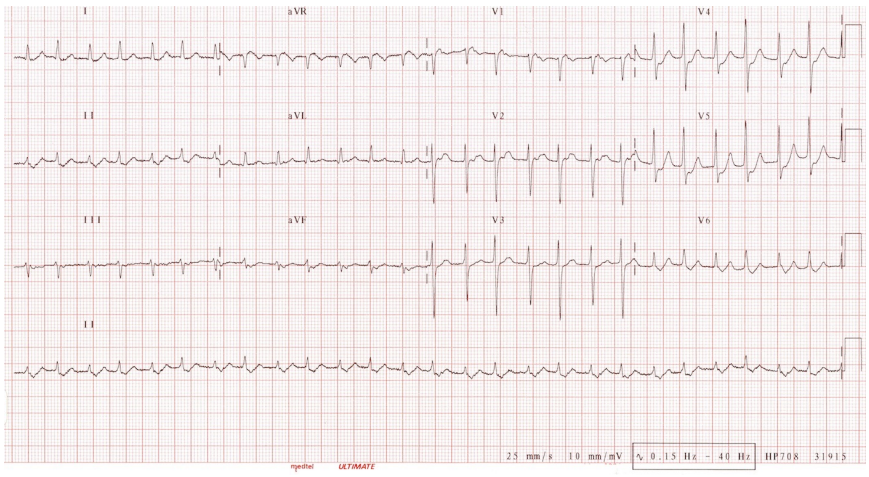
Can be transient or normal

More likely if large/ recurrent PE's

- Sinus tachycardia
- AFib/flutter
- S1Q3T3
- Right axis deviation
- RBBB
- T wave inversion V1-V3

3

ECG diagnosis?



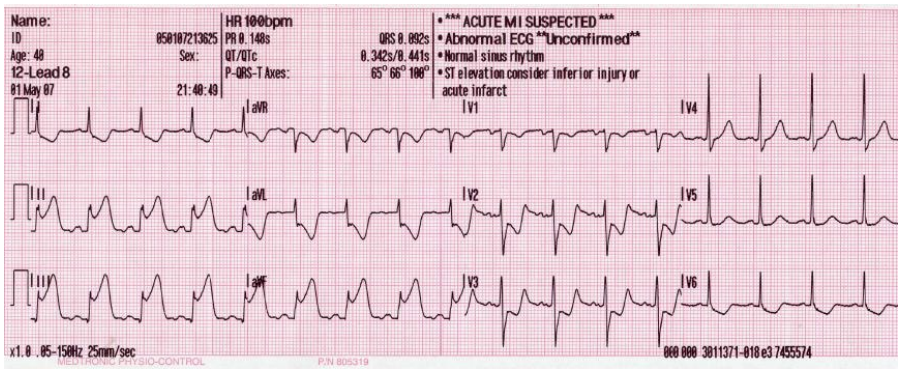
4

Pericardial effusion

- Small voltage QRS
- Sinus tachycardia
- PR segment depression
- Electrical alternans

5

What condition is this?



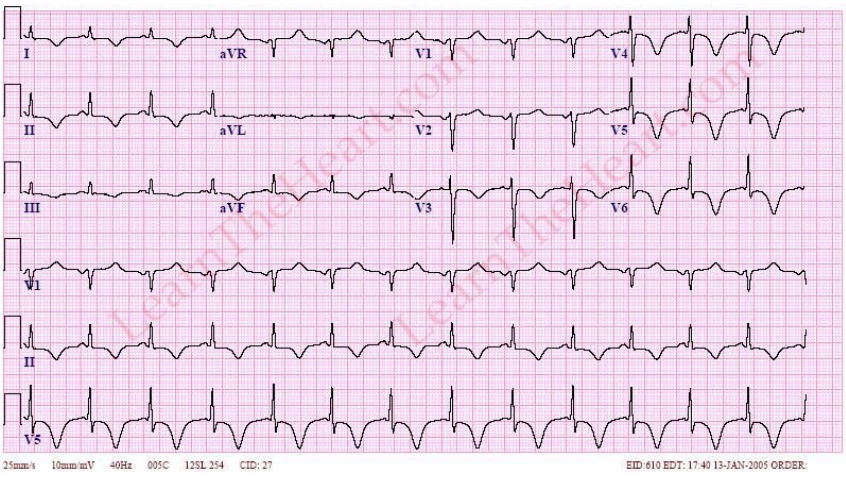
6

Causes of ST Elevation

- Acute myocardial infarction
- Acute pericarditis/myocarditis
- Hyperkalaemia
- Brugada syndrome
- Pulmonary embolus
- Normal variant

7

This patient presents with collapse …



8

Long QT syndrome

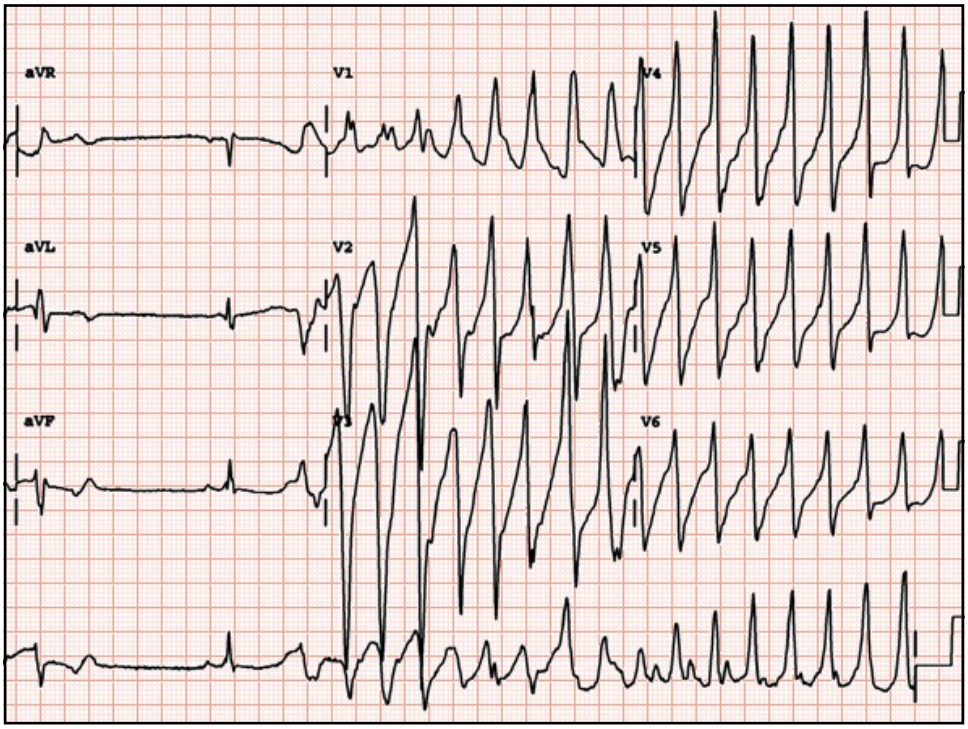
Prolonged QT interval

Torsade de Pointes

Diffuse T wave inversion

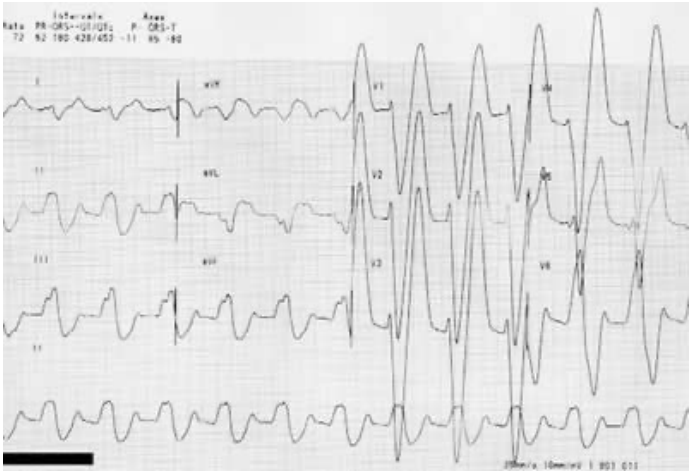
- Multiple leads
- Appears abnormally deep
- The troponin may well be elevated!
- May present with neurological symptoms ('seizures')

9



10

This lady has diarrhoea & vomiting



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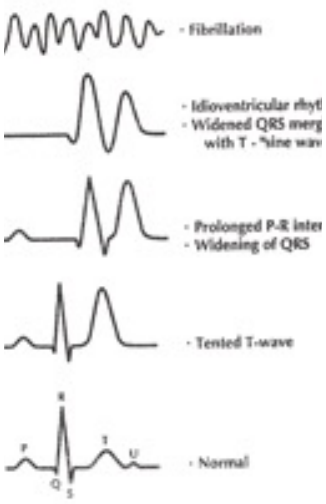
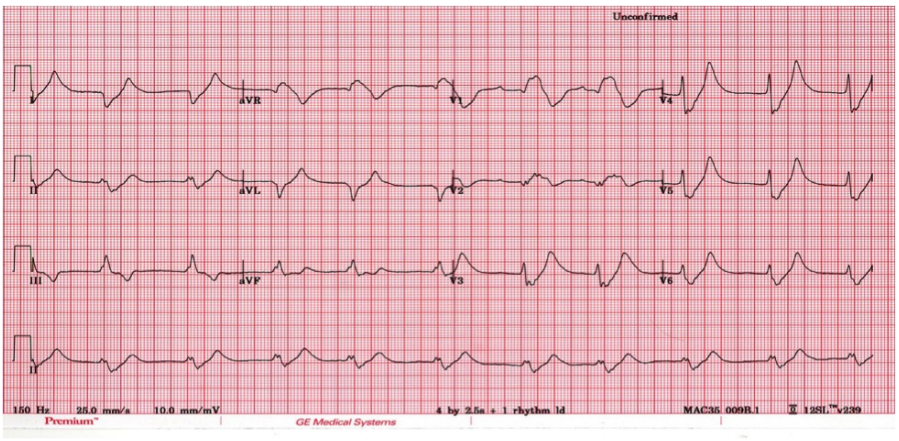
ECG changes of hyperkalaemia



12



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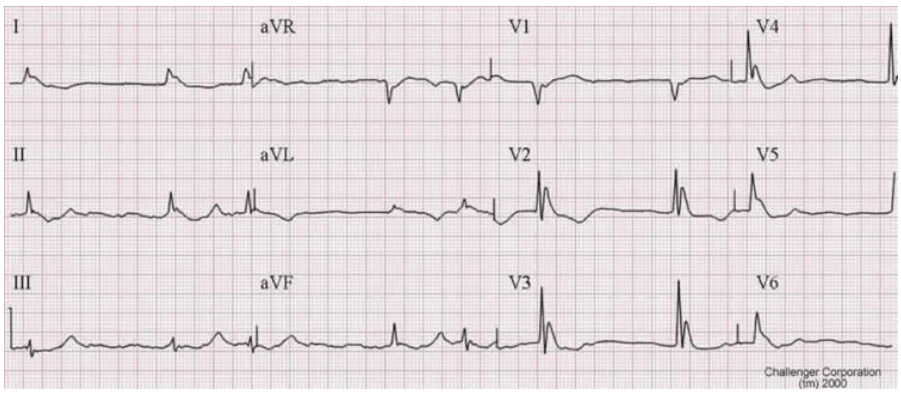
This elderly man was found on the floor ...



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ECG changes in hypothermia

- AF (shivering)
- J waves(Osborn waves) *
- PR prolongation
- QRS widening
- QT prolongation

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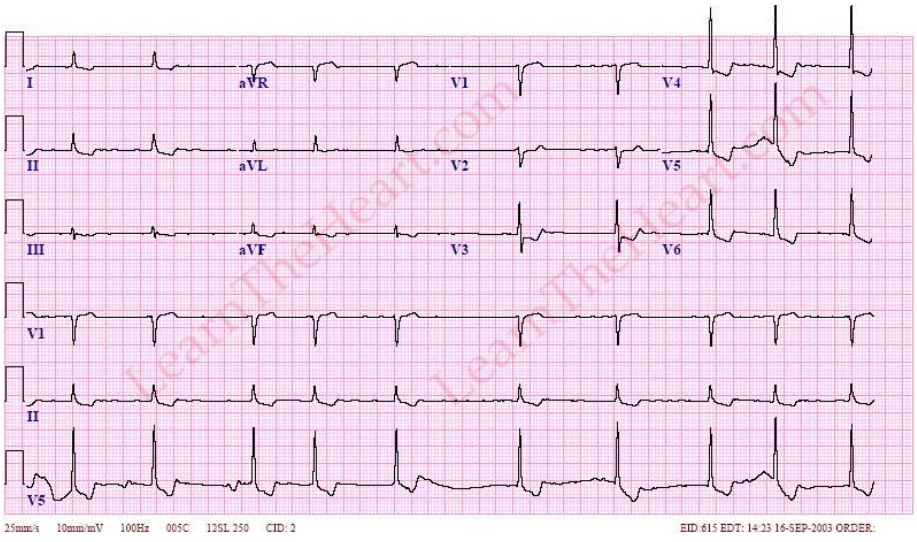
What medication is this lady on?



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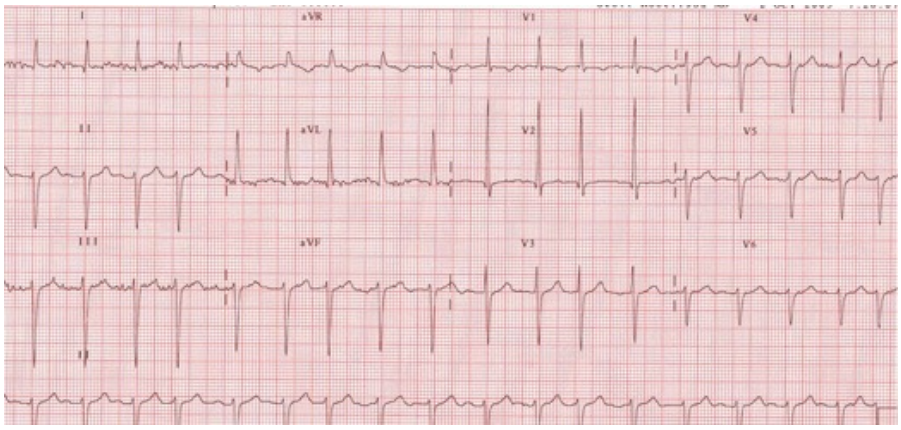
She has palpitations...



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Digoxin ...

- T wave inversion & ST depression = reverse tick
- Bradycardia
- Prolonged PR interval
- Shortened QT
- Arrhythmias – heart block, bigeminy
- Ventricular arrythymias

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References/ Useful Links

- Ferrari E et al. 1997. The ECG in pulmonary embolism. Chest 111:537-43
  - *Anterior t wave inversions 85% sensitivity, 81% specificity for massive PE in 80 patients with suspected PE. Found in 68% of patients. 50% patients had S1Q3T3*
- Eisenberg MJ et al. 1996. The diagnosis of pericardial effusion and cardiac tamponade by 12 –lead ECG. A technology assessment. Chest 110(2): 318-24
- Wang K et al. 2003. ST-segment elevation in conditions other than acute myocardial infarction. NEJM 349: 2128-35
  - *Useful review article summarising important differentials in ST elevation.*
- Mareedu RK et al. 2008. Classic EKG changes of hypothermia. Clin Med Research 6(3/4): 107-108
- Evertz R et al. 2005. Hypothermia resulting in characteristic ECG changes mimicking an acute myocardial infarction: Osborn waves and atrial fibrillation. Neth Heart J 13:461-3

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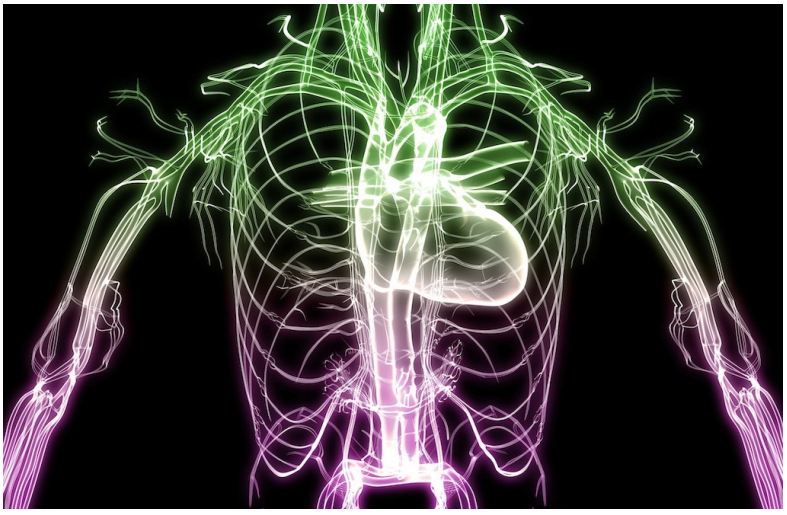
Questions?



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