ECGs not to miss

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Number 1. TWI/STD lead aVL – why care?

- New TWI in aVL is abnormal
- Should heighten your suspicion of ischemia in someone with worrying chest pain
- May be early reciprocal changes to impending inferior STEMI
- Get serial ECG especially if symptoms change or worsen
Number 2
Number 2. High lateral MI

- Any STD in inferior leads should lead to scrutiny of leads I and AvL

- Subtle STE in I and AvL suggest high lateral occlusion

- If you see STD need to look for reciprocal changes, these can be very subtle

- STD alone doesn’t localise lesions but reciprocal STE do
Number 2. High lateral MI – why care?

- High lateral wall MI can be easily missed
- Always look for reciprocal changes
- These patients need to go to cath lab
- Get serial ECGs look for evolving changes
Number 3. Brugarda syndrome

- Suspect in ANY patient presenting with syncope or near syncope
- RBBB or incomplete RBB + Coved STE in V1, V2 extending into an inverted T wave + clinical picture is diagnostic
- Maybe extended to V3
- Other patterns exist
Number 3. Brugarda Syndrome – why care?

- Cause of Sudden death in people without structural heart defects
- 10% mortality per year without treatment
- Refer to electrophysiologist
- Need placement of ICD
- Make the diagnosis, save a life
Number 4
Number 4 - Right ventricular MI

- Suspect in all Inferior wall MI
- Look at Right ventricular leads
- STE in V1, STD in v2
- STE greater in lead III than lead II
- Above finding very suggestive of RVMI
Number 4 - Right ventricular MI – why care?

- Involves Right ventricle
- Preload dependent
- Maybe hypotensive, higher mortality
- Needs fluids
- Avoid nitrates
- CAN CAUSE SEVERE HYPOTENSION
- Cath lab
Number 5
Number 5 - Wellens syndrome

- Biphasic or deeply inverted T wave in V2, V3 may extended V4-V6
- Patient maybe pain free and have normal biomarkers
- No precordial Q waves
- Preserved precordial R wave progression
- Recent history of angina
Number 5 - Wellens syndrome – why care?

- Suggestive of critical stenosis of LAD artery
- Have high risk of impending extensive anterior MI in the following days to weeks
- They need hospitalisation and urgent CATH
- Not for medical management
- DO NOT STRESS TEST – can have disastrous consequences
Number 6
Number 6. De Winter T waves

- 1-3mm ST depression with up sloping T wave into a tall symmetrical hyper acute T wave

- normal QRS

- loss of R-wave progression and with 1-2 mm ST elevation in aVR
Number 6. De Winter T waves – why care?

- More emergent form of Wellens
- Considered STEMI equivalent
- Activate CATH lab – push your case
- Suggestive of LAD occlusion
- Can be mistaken for high K – if in doubt get a K
- Serial ECGs
Number 7 - case

58 year old Male
Angina symptoms for 12 months
Worse over last 2 months
Referral from chest pain clinic to ED after having 1 hour chest pain, sweaty
Relieved with GTN
Now pain free and observation normal

THIS IS HIS ECG
Number 7
Number 7. Diffuse STD with STE >1mm aVR

- Suggestive of severe CAD in patient with symptoms of myocardial ischemia
- Suggests partial LMCA occlusion, LAD occlusion or severe triple vessel disease
Number 7. Diffuse STD with STE >1mm aVR – why care

- Has a 70% mortality
- Some consider it a STEMI equivalent
- Should contact cath lab
- May need inpatient bypass, if so avoid clopidogrel/ticagrelor
Summary

- ECGs are cheap
- You must be able to interpret them
- Life threatening signs can be subtle
- Know what to look for
- Become the expert AND SAVE A LIFE!
References

• Life in the fast lane (www.lifeinthefastlane.com)

• Amal Mattu's Emergency ECG Video of the Week (www.ekgumem.tumblr.com)

• Dr. Smith's ECG Blog (www.hqmeded-ecg.blogspot.com)

• ECG's for the Emergency Physician 1 by Mattu & Brady

• ECGs for the Emergency Physician 2 by Mattu & Brady