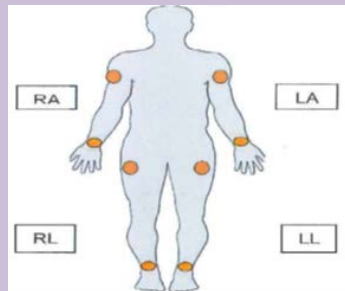


CPER digest

May 2016

You are dispatched for a 45 year old female patient who is experiencing chest pain. The patient is pale, diaphoretic and nauseated, complaining of pain in her chest that is 10/10. The pain started after she had finished cutting the grass about 20 minutes ago. The pain is constant, non-radiating and does not change with palpation, inspiration or movement. The patient has no previous health history other than environmental allergies for which she takes antihistamines. Her vitals are as follows: HR – 76, full, regular, RR – 20, regular, full, BP – 162/90, SPO2 – 98% on RA, Initial Lead II ECG – NSR with noted changes. You initiate a 12 lead ECG.

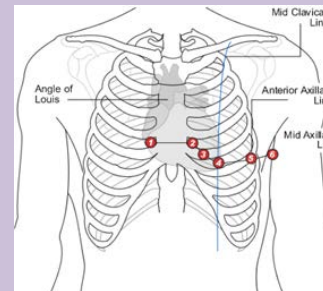
You apply the limb leads (as per Diagram 1) as well as the precordial leads (as per Diagram 2) to acquire a 12 lead ECG.



RA – right wrist preferred (right forearm secondary)
LA – left wrist preferred (left forearm secondary)
RL – right ankle preferred (left lateral hip secondary)
LL – left ankle preferred (right lateral hip secondary)

Diagram 1

Limb Lead Placement



V1 – fourth intercostal space to the right of the sternum
V2 – fourth intercostal space to the left of the sternum
V3 – directly between leads V2 and V4
V4 – fifth intercostal space at left midclavicular line
V5 – level with lead V4 at left anterior axillary line
V6 – level with lead V5 at left midaxillary line

Diagram 2

Precordial Lead Placement

You note ST elevation in Lead II, III and aVF with ST depression in V1, V2, V3 and V4 (Diagram 3), likely indicative of inferior STEMI.

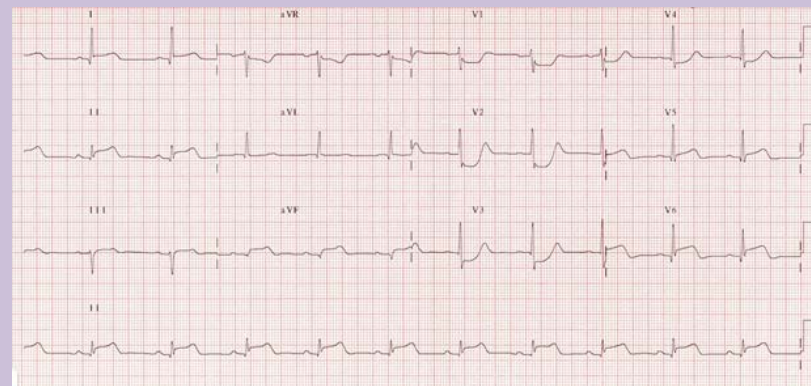


Diagram 3

You plan for quick extrication and transport with treatment en-route. What should you do prior to considering nitroglycerin for this patient?

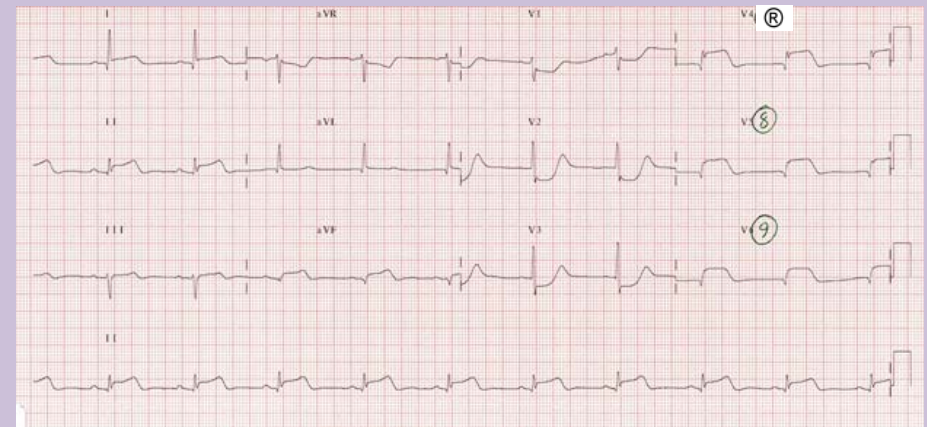
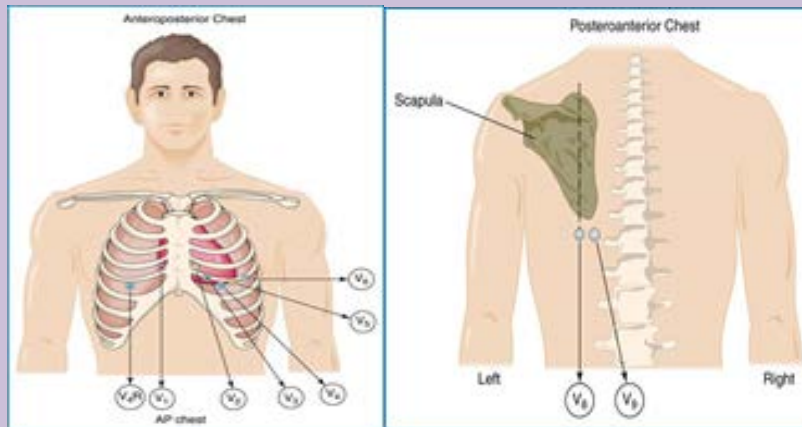
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If you said, 15-lead ECG, you are correct.

To rule out right ventricular infarction (RVI) in patients with STE inferiorly and due to the noted reciprocal changes in the Septal and Lateral leads, you acquire a 15 lead ECG to determine if there is RVI and posterior involvement.

You move V4, V5 and V6 to become V4R, V8 and V9 as per Diagram 4 and acquire the 15 lead ECG in Diagram 5 which notes ST elevation in V4R, V8 and V9 indicative of RVI and posterior MI.



V4R – fifth intercostal space at right midclavicular line (right side of chest) Diagram 4
V8 – level with V6 at left midscapular line
V9 – level with V6 at left paravertebral line

Diagram 5

This case presented the primary purpose for 12 lead and 15 lead ECG acquisition – identifying patients with STEMI. Some indications for 12 lead ECG acquisition by paramedics include:

- Identifying ECG changes from Acute Coronary Syndromes including STEMI:
 - Chest pain or discomfort that may be consistent with cardiac ischemia/infarction
 - Epigastric pain or back, neck, jaw or arm pain that may be consistent with cardiac ischemia/infarction
 - Acute dyspnea that may be consistent with cardiac ischemia/infarction
 - Return of spontaneous circulation
- Identifying arrhythmias including HR < 50bpm or >150bpm
- Identifying possible hyperkalemic ECG changes

Please stay tuned for the STEMI Hospital Bypass Protocol