

You are called to a 78 year old male patient who is complaining of chest pain and mild shortness of breath. From your assessment, you determine the patient is suffering from ischemic chest pain. You begin your treatment which includes administering oxygen, obtaining a baseline set of vital signs, and attaching the cardiac monitor. The patient is in a sinus rhythm at 68bpm, with all other vital signs within parameters to treat. You screen the patient for ASA and administer it as per the directive. What procedure is required prior to beginning your Nitroglycerin treatment?

If you answered 12-lead ECG, you are correct.

- Nitroglycerin is contraindicated when a 12-lead ECG, compatible with right ventricular infarct, is found. As such, this step must be completed **prior** to Nitroglycerin administration.
- The acquisition of a 12-lead ECG establishes a baseline for any progression of a STEMI

How do I know if there is a right ventricular infarct?

“Right Ventricular Infarct can be suspected after confirmatory modified 12-lead ECG (Inferior ST elevation and ST elevation in V4R) **OR** where Inferior infarct is suspected (Inferior ST elevation) and modified ECG is not immediately available” (Ministry of Health and Long Term Care Advanced Life Support Patient Care Standards, November 2011, p. 1-20).

Why the contraindication?

The right side of the heart is preload dependant and Nitroglycerin will decrease preload. In the setting of a right-sided infarct, the patient could suffer from profound hypotension/decreased cardiac output when given Nitroglycerin.

Serial 12-lead ECG

- 12-lead ECG should be acquired at the following times: (CPER Serial 12-lead Acquisition Education Bulletin, June 2013, Ref: 019)
 - At scene within **ten minutes** of initial contact prior to nitroglycerin administration
 - In the ambulance just prior to departure
 - In the ambulance just prior to moving into the hospital ED
- If a positive 12-lead (STEMI) is identified at any time, there is no need to repeat
- A 12-lead ECG with artifact should be repeated to obtain a diagnostic quality 12-lead ECG



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