

# Optimizing Treatment Strategies for Right - Sided STEMI: A Critical Approach

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**Abstract:** *This article delves deep into the intricate details of managing patients with right sided ST elevation myocardial infarction (under the umbrella term – acute coronary syndrome - ACS). It explores the differences between left and right sided myocardial infarction including their presentation, ECG changes and treatment strategies, while emphasizing the importance of accurate diagnosis using ECG findings and troponin levels. The article sheds light on the potential pitfalls of administering nitrates in patients with right sided ST elevation myocardial infarction and highlights the need for a nuanced approach in treatment. By elucidating the risks associated with indiscriminate nitrate use, this article aims to improve the clinical outcomes of patients with right sided STEMI.*

**Keywords:** Right sided STEMI, Nitrates, Acute coronary syndrome, Myocardial infarction, treatment strategy

## 1. Discussion

A STEMI is under an umbrella term of ACS - acute coronary syndrome.

Left sided STEMI is from occlusion of either the LCX (left circumflex) or left anterior descending artery (LAD) Right sided STEMI is mostly from RCA (right coronary artery occlusion). Symptoms are same which include chest pain and shortness of breath. Signs vary – Left sided STEMI will have signs of hypotension, pulmonary edema (crackles on auscultation, cardiomegaly on Chest Xray) while a right sided STEMI will have raised JVP and congestive hepatomegaly and bilateral pitting pedal edema. (Cohn et al., 1974)

Patients with right sided STEMI should not at any cost be given nitrates like glyceryl trinitrate or isosorbide mononitrate. (Wilkinson - Stokes, 2021)

Nitrates form the basis of management along with aspirin (antiplatelet drug), oxygen therapy and morphine in patients with myocardial infarction. (Alencar Neto, 2018)

Nitrates act by dilating coronary vessels resulting in decreased O<sub>2</sub> demand by decreasing after load and increasing oxygen supply.

Little does one know that giving nitrates left, right and center in patients with right sided myocardial infarction will only make things worse: reason is simple - the nitrates are vasodilators and hence will decrease the preload to the heart by dilating veins supplying venous deoxygenated blood back to the heart. (Flaherty, 1992)

This is extremely dangerous as it will further hamper the supply of blood to and from the heart resulting in hypotension.

Thus, in patients with ECG findings of lead 2, 3 and AVF ST elevation with troponins showing high repeated values meaning it's a Right sided STEMI – we avoid nitrates for managing such patients.

## 2. Conclusion

In the realm of acute coronary syndrome, distinguishing between left sided and right sided ST elevation myocardial infarction is crucial for tailored treatment. This article has underscored the significance of avoiding nitrates in patients with right sided STEMI, elucidating the detrimental effects of vasodilation of preload and hemodynamics. By adopting a cautious and informed approach, healthcare professionals can optimize the management of right sided STEMI, ultimately improving patient outcomes and reducing the risk of hypotension.

## References

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