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Citation: Robichaud, L., et al., (2016) Prehospital Nitroglycerin Safety in Inferior ST Elevation Myocardial Infarction, *Prehospital Emergency Care*, 20:1, 76-81, DOI: 10.3109/10903127.2015.1037480

Clinical Question: Is nitroglycerine more likely to be associated with hypotension in inferior STEMIs than in non-inferior STEMIs?

Introduction: It is thought that inferior STEMIs are pre-load dependent injuries, ergo, in the ED, we avoid using nitro in these cases. However, current pre-hospital guidelines do not differentiate the location of the STEMI with regards to use of nitro.

Methods: This study was a retrospective chart review that looked at prehospital patients with chest pain and whom also had computer interpreted EKGs reading "ACUTE MI". The investigators wanted to compare the differences in hypotension (drop in SBP >30 mmHg) amongst patients with inferior wall STEMIs versus non-inferior STEMIs.

Results: Over 29 month period, 1,466 STEMI cases were identified. Of these 821 received nitroglycerin. Of note, the inferior STEMI cohort had a higher incidence of diabetes, hyperlipidemia and previous history of CAD. Hypotension occurred post-nitroglycerin therapy in 38/466 inferior STEMIs and 30/339 non-inferior STEMIs (8.2% versus 8.9%). A drop in SBP greater than 30 mm Hg occurred in 109/466 of inferior STEMIs and 81/339 of non-inferior STEMIs (23.4% versus 23.9%).

Discussion: The results of the study suggest that there is no significant difference in the rate of hypotension when using nitroglycerin in the prehospital setting without regard to location of myocardial injury. The purpose of the study was to determine if the current protocol for prehospital nitroglycerin administration was safe and this study suggests that there is no need to change the current EMS guidelines. This also brings into the light the legitimacy of avoiding nitrates in inferior STEMIs in any setting. The only study supporting this was a retrospective cohort study published in 1989 by Ferguson et al.
