

Title: Effect of vasodilatory medications on Blood pressure in patients undergoing transradial coronary angiography: A comparative study

Category: Interventional Cardiology

Abstract

Background: In patients undergoing coronary intervention, different vasodilators are used to prevent the Radial artery spasm (RAS). Till date, no studies investigated the effect of these vasodilators in blood pressure reduction.

Aim: The study aimed to investigate and compare the effect of vasodilatory medications on blood pressure reduction in patients undergoing transradial coronary angiography procedure.

Methods: We consecutively included 300 patients undergoing transradial coronary angiography procedures and randomly assigned them into 3 equal groups to compare the effect of verapamil (2.5 mg), nitroglycerin (200 micrograms) and combination (verapamil 2.5 mg with nitroglycerin 200 (micrograms) was diluted in 5 ml of normal saline and given through radial sheath. Changes in the blood pressure, heart rate, and other clinical parameters were assessed and presented as standardized mean differences (SMD) with 95% confidence intervals (CI). ANOVA test was performed to analyze the differences in the blood pressure and other clinical parameters between the three groups.

Results: Overall, the mean age of the study population was 53.26 years [standard deviation (SD):9.27], male patients (84%), with dyslipidemia (62.6%) and diabetes (45%). At baseline, the mean systolic blood pressure (SBP) was 150.91 ± 31.66 mmHg, heart rate (72.34 ± 12.71 beats per minute). After administration of vasodilators, the combination group reduced SBP significantly [standard mean difference: -33.35 (95% confidence interval (CI): -40.27 to -26.42, $p < 0.001$]. There was a statistically significant difference between groups for the SBP [$F(2,296) = 3.38$, $p = 0.035$]. Verapamil alone showed a significant decrease in the SBP by -27.23 mmHg and DBP by -4.980 mmHg.

Conclusion: Intra-arterial administration of verapamil alone showed lower BP reduction compared to the combination of vasodilators. Verapamil could be a safer and effective alternative to prevent RAS with no deleterious effect on BP and heart rate in patients undergoing transradial coronary angiography.