

PO20. Hemodynamic responses and adverse effects associated with adenosine and dipyridamole pharmacologic MPI SPECT stress testing: AdenoDip study

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Objective. The aim of our study was to compare the hemodynamic response and the adverse effects associated with two coronary vasodilators used for pharmacologic stress SPECT MPI. **Material and Methods.** Retrospective observational study comparing the hemodynamic response and side effects of two vasodilator pharmacologic stressors: adenosine and dipyridamole in a group of patients who underwent pharmacologic stress SPECT myocardial perfusion imaging. 92 case match patients were included in the study during 2018. One day rest-stress Tc99m sestamibi, ECG gated SPECT MPI protocol was utilized. Dipyridamole protocol was 0,56 mg/kg over 4 min, and adenosine was infused 140 µg/kg/min over 6 min. All patients received the total dose of stressor. **Results.** There was no statistically significant difference in initial, peak and delta heart rate between the groups (as expressed through means), however, adenosine patients had OR 2,3 [(CI 1,7-3,2); p=0,000; Mantel-Haenszel OR estimate sig 0,001], for drop in HR, as compared with DIP patients. Patients in DIP group had significantly higher initial systolic BP [139 versus 131 mmHg (mean), p=0,032]; but no statistically significant difference was observed in delta TA over maximal stress, as demonstrated through means. However, adenosine patients had OR 2 [(CI 1,2-3,3); p=0,002 Mantel-Haenszel OR estimate sig 0,002], to have a rise in systolic BP, as compared to DIP patients. Horizontal or down sloping ST-segment depression of ≥1 mm occurred in 4,3 % of patients who received adenosine and in 10,9% of those who received dipyridamole (p=ns). Adverse effects occurred in 68% of the adenosine study group and in 46% of the dipyridamole group (P<0.03). Chest pain was the most common symptom with both drugs. Atrioventricular block, and/or sinus pauses >2 sec occurred in 3(6,5%) patients who received adenosine but in none from the DIP group (p=ns). Aminophylline was administered in 45% of adenosine patients, versus 70% of DIP patients (p=0,05). **Conclusion.** Adenosine causes slightly greater decrease in heart rate; however, there was no more pronounced vasodilatation observed. Adverse effects occur less often with dipyridamole but, in comparison with adenosine, are more difficult to manage and require more monitoring time as well as frequent intravenous use of aminophylline for reversal.