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PRELIMINARY RESULTS OF A RANDOMIZED TRIAL COMBINING REGADENOSON WITH SYMPTOM-LIMITED EXERCISE IN PATIENTS UNDERGOING MYOCARDIAL PERFUSION IMAGING

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

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Background: For patients with uncertain exercise capacity, dipyridamole plus symptom-limited exercise (Dip-Ex) with myocardial perfusion imaging (MPI) is a safe and useful test. Unlike dipyridamole, regadenoson (Lexiscan[®]) has rapid action and thus could be injected during symptom-limited exercise (Ex-Lex) when exercise is deemed suboptimal, enhancing laboratory efficiency and resource utilization.

Methods: Patients referred for vasodilator/exercise MPI were randomized 2:1 to Ex-Lex or Dip-Ex. Hemodynamics were recorded during Bruce exercise and vasodilator stress. Patients completed a symptom questionnaire immediately after stress testing. MPI image quality was assessed by blinded read.

Results: Forty three patients (mean age 62, 46% male) with perceived exercise limitations were randomized (12 to Dip-Ex and 31 to Ex-Lex). Among Ex-Lex patients, 48% exercised to goal heart rate and did not require regadenoson. Overall stress protocol time was shorter with Ex-Lex (12.5 minutes) than with Dip-Ex (16.2 minutes). Symptoms and side effects were similar between groups. There were no serious adverse events with regadenoson injection during exercise. MPI image quality was "excellent" or "good" in all patients. Interpretive certainty was similar between stress protocols.

Conclusion: Symptom-limited exercise followed by regadenoson injection, as necessary, is a safe and well-tolerated stress protocol and results in optimal MPI quality for interpretation while minimizing pharmaceutical use.

Table. Exercise, Symptom, and Nuclear Image Quality Data

	All Ex-Lex patients n=31	Exercise/No Lexiscan n=15	Ex-Lex n=16	Dip-Ex n=12
Exercise Parameters				
Exercise time (mean)	6.1 minutes	6.4 minutes	5.9 minutes	4.5 minutes
Peak RPP (mean)	19,139	22,952	15,566	17,295
METs	6.9	7.6	6.2	5.6
% of patients reaching $\geq 85\%$ age-predicted maximum heart rate	48%	100%	0%	0%
Overall test time (mean)	12.5 minutes	12.5 minutes	12.5 minutes	16.2 minutes
Patient-reported symptoms				
Dyspnea or Chest Discomfort (moderate or severe)	12 (39%)	3 (20%)	9 (56%)	4 (33%)
Headache, Flushing, Dizziness, or Nausea (moderate or severe)	5 (16%)	0	5 (31%)	4 (33%)
Overall comfort level during test				
"Comfortable" or "A little uncomfortable"	28 (90%)	13 (87%)	15 (94%)	10 (83%)
"Very uncomfortable" or "Extremely uncomfortable"	3 (10%)	2 (13%)	1 (6%)	2 (17%)
Stress MPI Image Quality: Assessed as Excellent, Good, Fair, or Poor				
Excellent or Good	30/30*	15/15	15/15*	12/12
Interpretive Certainty of Blinded Read				
Definitely normal or abnormal	28	14	14	11
Probably normal or abnormal	2	0	1	1
Equivocal	0	0	0	0

*MPI unavailable for assessment in one patient for technical reasons.