

**ASNC2009 Accepted Late Breaking Clinical Trials**  
**Saturday October 3, 2009, 10:30-Noon**

ADVANCED TRACK: Research Presentations  
Room M100 F-G

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**Publishing Title:** Multicenter Comparison of a New Dedicated Ultrafast Solid-State Cardiac Camera with Standard Dual Detector Cameras in Dual-Isotope Myocardial Perfusion SPECT

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**Objective:** To compare the diagnostic performance of the Discovery NM 530c (DNM) camera with standard dual detector cameras (S-SPECT) in dual-isotope myocardial perfusion imaging.

**Methods:** 55 patients (body mass index range 18-50, 39 men) underwent 3.5 mCi thallium rest/15 mCi Tc-99m tetrofosmin stress myocardial perfusion imaging. DNM images were acquired immediately prior to S-SPECT images with the same injected doses. Rest and stress acquisition times were 5 and 3 min for DNM and 20 and 14 min for S-SPECT. Emory Cardiac Toolbox (ECTb) software was used for processing and interpretation. Two readers blinded to clinical information independently scored all scans using a standard 5-point scale on a subject level and on a vascular territory level. Stress perfusion defects were defined as reversible, fixed, or mixed. Image quality was scored on a 3-point scale. Interobserver differences were resolved by a third blinded reader.

**Results:** DNM rest thallium images were considered of excellent quality in 74%, adequate in 23%, and suboptimal in 3% of cases. S-SPECT rest thallium images were considered excellent in 62%, adequate in 34%, and suboptimal in 4% of cases. DNM stress Tc images were considered of excellent quality in 90%, adequate in 19% and suboptimal in 1% of cases. S-SPECT stress Tc images were considered excellent in 71%, adequate in 26%, and suboptimal in 3% of cases. The table shows the % consensus agreement rates between DNM and S-SPECT images based on the presence or absence of perfusion defects using S-SPECT as the reference standard.

% agreement	CAD	LAD	LCX	RCA
Defect Absent	90 (38/42)	96 (51/53)	96 (45/47)	90 (46/51)
Defect Present	77 (10/13)	50 (1/2)	63 (5/8)	50 (2/4)

**Conclusions:** Preliminary results suggest that the DNM camera provides diagnostic performance comparable to S-SPECT in dual-isotope myocardial perfusion SPECT. Imaging time is significantly reduced because of improved count sensitivity and image contrast over S-SPECT cameras.

**Author Disclosure Block:** F.P. Esteves , None; P. Raggi, None; R.D. Folks, GE Healthcare; Z. Keidar, None; S. Rispler, None; L. Verdes, None; C.A. Santana, None; E.V. Garcia, GE Healthcare.

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**Publishing Title: Iodofilic Acid I 123 (BMIPP) Fatty Acid Imaging Improves Initial Diagnosis in Emergency Department Patients with Suspected Acute Coronary Syndromes: A Multicenter Trial**

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**Background:** Emergency department (ED) diagnosis of chest pain is problematic, often requiring prolonged observation and stress testing. Iodofilic acid I 123 (BMIPP) SPECT detects recent abnormalities in fatty acid metabolism resulting from myocardial ischemia, even many hours after symptom cessation.

**Methods:** ED pts with suspected acute coronary syndromes (ACS) were enrolled at 50 centers. Patients received 5 mCi BMIPP during symptoms or within 30 hr of symptom cessation in chest pain free pts. BMIPP SPECT images were interpreted semi-quantitatively by three blinded readers. Initial clinical diagnosis (InDx) was based on symptoms, initial ECGs, and troponin; final diagnosis used all data (including angiography and stress SPECT) except BMIPP SPECT. Final diagnoses were adjudicated by a blinded committee into Definite ACS or Definite/Probable ACS, or negative for ACS, based on all available information without BMIPP imaging data.

**Results:** 510 pts were enrolled, and 507 pts were dosed. Efficacy was evaluated in the 448 pts who had complete data. Sensitivity (95%CI) of BMIPP by three blinded readers for a final diagnosis of Definite/Probable ACS was 71% (64,78), 74% (67,81), and 69% (62,76); the corresponding specificity (95%CI) of BMIPP was 67% (61,73), 54% (48,60), and 70% (64,75). Compared to InDx alone, BMIPP + InDx increased sensitivity from 43% to 81% (p<0.001), negative predictive value from 62% to 83% (p<0.001), and positive predictive value from 41% to 58% (p<0.001), while specificity was maintained (61% to 62%, p = NS).

**Conclusion:** The addition of BMIPP data to the initially available clinical information adds incremental value toward the early diagnosis of an ACS, potentially allowing determination of the presence or absence of ACS to be made earlier in the evaluation process.

**Author Disclosure Block:** M. Kontos, Molecular Insight Pharmaceuticals; Molecular Insight Pharmaceuticals; V. Dilsizian, Molecular Insight Pharmaceuticals; Molecular Insight Pharmaceuticals; F. Weiland, Molecular Insight Pharmaceuticals; G. DePuey, Molecular Insight Pharmaceuticals; J. Mahmarian, Molecular Insight Pharmaceuticals; Molecular Insight Pharmaceuticals; A. Iskandrian, Molecular Insight Pharmaceuticals; T. Bateman, Molecular Insight Pharmaceuticals; Molecular Insight Pharmaceuticals; G. Heller, Molecular Insight Pharmaceuticals; Molecular Insight Pharmaceuticals; K. Ananthasubramanam, Molecular Insight Pharmaceuticals; Y. Li, Molecular Insight Pharmaceuticals; J. Goldman, Molecular Insight Pharmaceuticals; T. Armor, Molecular Insight Pharmaceuticals; K. Kacena, Molecular Insight Pharmaceuticals; N. LaFrance, Molecular Insight Pharmaceuticals; E. Garcia, Molecular Insight Pharmaceuticals; Molecular Insight Pharmaceuticals; J. Babich, Molecular Insight Pharmaceuticals; J. Udelson, Molecular Insight Pharmaceuticals; Molecular Insight Pharmaceuticals.