metabolism in pts with acute MI who underwent primary angioplasty with DP Methods: Consecutive pts (n=61, mean age=63) with primary angioplasty (DP: n=15, non-DP: n=46). Acute MI was confirmed at rest myocardial Tc-99m and I-123 BMIPP (free fatty acid analogue) SPECT imaging 9 days from onset of MI. Images were scored using a 15-score model and a 0-4 scale, and then defect score of I-123 BMIPP Ti-201 and mismatch score between I-123 BMIPP and Ti-201 were calculated. Results: There was no significant difference in BMIPP defect score (area at risk) between DP and non-DP group. However, Ti-201 defect score was significantly lower in pts with DP and mismatch score was significantly higher in pts with DP as shown in a table. These suggest that myocardial perfusion was more improved in pts with DP and myocardium can be more salvaged in pts with DP compared with pts without DP. Conclusion: Primary angioplasty with DP is more effective for myocardial reperfusion in pts with acute MI.

Effects of thrombectomy plus distal protection

- Thrombectomy plus distal protection
- Balloon and/or stent use only
- P value
  - BMIPP defect score 17.6 16.0 0.5
  - Ti defect score 4.3 11.5 0.002
  - Mismatch score between BMIPP/Ti 13.3 4.5 <0.0001

1094-157
High-Dose Dobutamine Stress Ti-201/I123-BMIPP Dual SPECT Reliably Identifies Myocardial Contractile Dysfunction Caused by Inducible Demand Ischemia

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Myocardial fatty acid metabolism is so susceptible to transient ischemia that impaired fatty acid metabolism is even persist even after recovery from perfusion abnormality. We hypothesized that stress myocardial fatty acid imaging can identify contractile dysfunction induced by transient ischemia, including demand ischemia, more precisely than does stress perfusion imaging. To test this hypothesis, halium-201 (Tl)/Tc-123-beta-methyliodophenylpentadecanoic acid (BMIPP) dual SPECT (DDS) and two-dimensional echocardiography (DSE) were performed simultaneously using a high-dose dobutamine in 22 patients with stable coronary artery disease who had significant disease after high versus low stress (61±9 years, 16 males, 6 females). DDS and DISE images were obtained 20 min (stress-BMIPP, Ti) and 4 hours (rest-BMIPP, Ti) after intravenous infusion of dobutamine at increments of 5, 10, 15, 20, 30, 40 µg/kg/min with a 3-min interval. Reduced myocardial uptake of Ti at BMIPP was quantified using a polar map technique as a severity score. Regional wall motion abnormality (WMA) was evaluated semiquantitatively at rest, low-dose (15µg/kg/min), and high-dose (40 µg/kg min) dobutamine infusions. Stress-BMIPP SS was significantly greater than stress-Ti SS (200±89±84. vs. 176±68±82, p=0.039). At a high-dose test, stress-BMIPP SS correlated more clearly with WMA (y=0.04x-2.33, r=0.58, p=0.0036) than did stress-Ti SS (y=0.03x-0.24, r=0.45, p=0.041). At a low-dose test, however, rest-Ti SS and rest-BMIPP SS correlated significantly but only with WMA; y=0.03x+1.33, r=0.55, p=0.0096; and y=0.03x+1.11, r=0.53, p=0.0134, respectively. Thus, high-dose dobutamine-induced impairment of myocardial fatty acid uptake can identify not only reversible ischemia identified by standard perfusion imaging but also transient contractile dysfunction that is underestimated by stress perfusion imaging. Stress-induced transient impairment of contractile function and fatty acid metabolism may reflect imbalance between increased demands and coronary flow reserve rather than relative abnormality of tracer distribution in myocardium.

1094-158
Altered Myocardial Perfusion With Fatty Meal Ingestion in Normal Volunteers

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Background: Fatty meal ingestion causes endothelial dysfunction of the brachial artery in normal volunteers. However, the effects on myocardial perfusion are not known. Methods: 35 healthy volunteers with no cardiac risk factors were evaluated with rest and stress PET Rub-82 myocardial perfusion dynamic imaging 3 to 4 hours following ingestion of 926 calories and 52.8 g of total fat. In random order. Net retention of 23 plus distal perfusion. Stress testing included dobutamine (n=15), diprydamole (n=10) and cold pressor (n=10). The first 15 volunteers underwent brachial artery ultrasound studies before and 3 to 4 hours after the low and high-fat meals. The high fat meal consisted of 926 calories and 52.8 g of total fat. The low fat meal consisted of 923 calories and 0.6 g of total fat. Results: Flow mediated vasodilatation was impaired after the high fat meal compared to baseline (6.1 ± 2.4 vs 10.5 ± 2.7, p=0.0006), but not after low fat (8.60 ± 1.3% vs 10.2 ± 2.5%, p=0.27, NS). Triglycerides (mmol/L) increased after the high fat meal compared to baseline (1.92 ± 1.31 vs 1.14 ± 0.79, p=0.0001) but not after low fat meal (1.27 ± 1.02 vs 1.27 ± 1.15, NS). Average left ventricular perfusion at rest and following dobutamine, diprydamole or cold pressor stress did not differ after high versus low fat meals. However, regional perfusion following cold pressor stress decreased after high versus low fat meal ingestion by 5.1% (p=0.04) in the midle myocardial segments and by 7.0% (p=0.003) in the apical segments with no significant changes in the basal segments. No significant regional changes were observed with dobutamine or diprydamole stress. Conclusions: Fatty meal ingestion results in endothelial dysfunction of the brachial artery and alterations in myocardial perfusion following cold pressor in normal volunteers. The reduced perfusion in the middle and distal segments following cold pressor is consis-