measured resting MBF with positron emission tomography using either O-15 water or N-13 ammonia and the myocardial response to Dob (2.5 to 40 μg/kg/min) with transesophageal echocardiography in 15 patients (14 men; age 61 ± 9 years) with resting ejection fraction < 45% (mean: 30 ± 10). Systolic wall thickening (SWT) and MBF were measured quantitatively in 8 anatomically matched myocardial segments in each patient. A total of 115 segments were available for analysis. SWT at rest ranged from −11% to 71% (normal ≥ 0% and EF from 0.17 to 1.7 mg/min (normal ≥ 0.6). Segments with normal MBF had significantly greater contraction at rest compared to those with reduced MBF (SWT: 29.4 ± 19% vs. 14.3 ± 18%; P < 0.0001). Furthermore, the inotropic response to Dob was also significantly greater in regions with preserved MBF (increase in percent SWT > 20%) was more likely in segments with normal MBF (51 of 72 [71%] vs. 14 of 43 [33%]; P = 0.0001). Thus, both resting myocardial contraction and the inotropic response to Dob are related to MBF. These findings suggest that reduced coronary blood flow is a determinant of myocardial contractile reserve in patients with CAD and LV systolic dysfunction.

**907-55** Effect of Low-Density-Lipoprotein Apheresis on Coronary Anatomy and Regional Myocardial Blood Flow

Wim R. Aangeeven, Abraham A. Kroon, Anien F. Stalenhoef, Gerard J. Uijlen, Tjeerd van der Werf. Departments of Cardiology and General Internal Medicine, University Hospital Nijmegen, The Netherlands

In patients with coronary artery disease (CAD) and hypercholesterolemia progression of the disease is considered to be mainly mediated by the inflammatory response. LDL-Apheresis over dextransulfate columns is a very effective lipid-lowering therapy which might have an beneficial effect on coronary anatomy and physiology.

Methods: In a randomized study we compared the effect of biweekly LDL-apheresis and simvastatin versus simvastatin alone. Patients with total cholesterol ≥ 8 mmol/l and severe CAD were included in the study, 21 in the LDL-apheresis (L) group and 21 in the medication (M) group. Mean segment diameter (MD) and minimal obstruction diameter (MOD) were assessed by QCA before and after 2 years of therapy. The regional myocardial blood flow was assessed by digital subtraction angiography after i.e. papaverin with vasoelastic calculation of the hyperemic mean transit time (HMTT). Results: LDL-cholesterol decreased from 7.72 ± 1.96 mmol/l to a time averaged level of 2.95 ± 1.13 (−63%) in the L group and from 7.85 ± 2.34 mmol/l to 4.13 ± 1.58 mmol/l (−43%) in the M group. QCA revealed no differences in coronary anatomy either on a patient based or on a segment based comparison. Paired HMTT measurements were assessed in 43 regions in the L group and 35 regions in the M group. Baseline values for M and L group were not significantly different. In the L group HMTT decreased over 2 years in all regions from 3.35 ± 1.18 to 2.87 ± 0.82 s. (p < 0.01) versus an increase in the M group from 2.95 ± 1.06 to 2.95 ± 0.90 s (NS). The HMTTs of the LAD, RCA and RCA region contributed to the same extent in the final result.

Conclusions: LDL-apheresis compared to simvastatin alone lowered LDL-cholesterol significantly more. Both groups showed no change in coronary anatomy. However, regional myocardial blood flow improved in the L group. This functional enhancement is in accordance with previous reported results of exercice tests and may be a marker of recovery of endothelial function.

**907-56** Recovery of Function After Revascularization Is Dependent on Preservation of Myocardial Blood Flow

Anastasia N. Kitsiou, Stephen L. Bacharach, Arshed A. Quyyumi, Ronald M. Summers, Vasken Distlman, N.H.L.B.I., Bethesda, Maryland

The utility of myocardial blood flow (MBF) for the evaluation of recovery of function after revascularization (rev) has not been well studied. In this study, we determined whether MFB differentiates asynergic regions that improve post-rev (viable) from those that remain abnormal post-rev (nonviable). We studied 9 pts with chronic CAD who underwent pre-rev position emission tomography (PET) at rest using N-13 ammonia and F-18 deoxyglucose (FDG), pre- and post-rev octated med dipyridamole echocardiography and resting echocardiography. Mean LVEF at rest increased from 31 ± 8% pre­ to 36 ± 10% post-rev (p = 0.01). Absolute MBF was computed for a single large region in which ammonia uptake was uniform and all other regions were then scaled by this MBF value. 2-4 MRI and PET transaxial slices were matched and analyzed per patient. Pre- and post-rev systolic wall thickening (SWT) and FDG uptake were assessed visually, with normal (0%–25%) and end-systolic (ES) wall thickness was measured quantitatively in 5 regions per slice. From 145 regions studied, pre-rev SWT was normal in 89 (61%) and abnormal in 56 (39%) regions. In normal regions, mean MBF was 0.71 ± 0.17 and FDG uptake was 0.90 ± 0.23. Post-rev, SWT improved in 32 of 56 (57%) abnormal regions. PET and MRI data in post-rev improved and abnormal regions follow: