J Am Coll Cardiol (2004);43:1596-601
Intracranial hemorrhage and hyperperfusion syndrome following carotid artery stenting: risk factors, prevention, and treatment
A. Abou-Chebl*, et al.*
Department of Neurology, The Cleveland Clinic Foundation, Cleveland, Ohio 44195, USA.
OBJECTIVES: The study defined the incidence of cerebral hyperperfusion syndrome and intracranial hemorrhage (ICH) and the risk factors for their development following carotid artery stenting (CAS). BACKGROUND: Hyperperfusion syndrome and ICH can complicate carotid revascularization, be it endarterectomy or CAS. Although extensive effort has been devoted to reducing the incidence of ischemic stroke complicating CAS, little is known about the incidence, etiology, and prevention strategies for hyperperfusion and ICH following CAS. METHODS: We retrospectively reviewed the prospective database of 450 consecutive patients who were treated with CAS in our department to identify patients who developed hyperperfusion syndrome and/or ICH. RESULTS: The mean age of the patients was 72.7 +/- 10.9 years, and the mean diameter narrowing was 84 +/- 12.8%. Five (1.1% [95% confidence interval 0.4% to 2.6%]) patients developed hyperperfusion. Three (0.67%) of the five developed ICH. Two of these patients died (0.44%). Symptoms developed within a median of 10 h (range, 6 h to 4 days) following stenting. All five patients had correction of a severe internal carotid stenosis (mean 95.6 +/- 3.7%) with a concurrent contralateral stenosis >80% or contralateral occlusion and peri-procedural hypertension. These same risk factors are involved in cerebral hyperperfusion following carotid endarterectomy. The use of platelet glycoprotein IIb/IIIa receptor blockers did not appear to increase the risk ICH. CONCLUSIONS: The hyperperfusion syndrome occurs infrequently following CAS, and ICH occurs in 0.67% of patients. Patients with severe bilateral carotid stenoses may be predisposed to ICH, particularly if there is concurrent arterial hypertension. Patients with these factors may require more intensive hemodynamic monitoring after CAS, including prolongation of hospitalization in some cases.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15120817

N Engl J Med (2004);351:1285-95
Relation between renal dysfunction and cardiovascular outcomes after myocardial infarction
N. S. Anavekar*, et al.*
Cardiovascular Division, Brigham and Women's Hospital, Boston, MA 02115, USA.
BACKGROUND: The presence of coexisting conditions has a substantial effect on the outcome of acute myocardial infarction. Renal failure is associated with one of the highest risks, but the influence of milder degrees of renal impairment is less well defined. METHODS: As part of the Valsartan in Acute Myocardial Infarction Trial (VALIANT), we identified 14,527 patients with acute myocardial infarction complicated by clinical or radiologic signs of heart failure, left ventricular dysfunction, or both, and a documented serum creatinine measurement. Patients were randomly assigned to receive captopril, valsartan, or both. The glomerular filtration rate (GFR) was estimated by means of the four-component Modification of Diet in Renal Disease equation, and the patients were grouped according to their estimated GFR. We used a 70-candidate variable model to

adjust and compare overall mortality and composite cardiovascular events among four GFR groups. RESULTS: The distribution of estimated GFR was wide and normally shaped, with a mean (+/-SD) value of 70+/-21 ml per minute per 1.73 m2 of body-surface area. The prevalence of coexisting risk factors, prior cardiovascular disease, and a Killip class of more than I was greatest among patients with a reduced estimated GFR (less than 45.0 ml per minute per 1.73 m2), and the use of aspirin, beta-blockers, statins, or coronary-revascularization procedures was lowest in this group. The risk of death or the composite end point of death from cardiovascular causes, reinfarction, congestive heart failure, stroke, or resuscitation after cardiac arrest increased with declining estimated GFRs. Although the rate of renal events increased with declining estimated GFRs, the adverse outcomes were predominantly cardiovascular. Below 81.0 ml per minute per 1.73 m2, each reduction of the estimated GFR by 10 units was associated with a hazard ratio for death and nonfatal cardiovascular outcomes of 1.10 (95 percent confidence interval, 1.08 to 1.12), which was independent of the treatment assignment. CONCLUSIONS: Even mild renal disease, as assessed by the estimated GFR, should be considered a major risk factor for cardiovascular complications after a myocardial infarction.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15385655

Catheter Cardiovasc Interv (2004);61:484-91
Comparison of combination therapy of adenosine and nitroprusside with adenosine alone in the treatment of angiographic no-reflow phenomenon
C. Barcin*, et al.*
Department of Internal Medicine, Mayo Clinic and Foundation, Rochester, Minnesota 55905, USA.
We sought to compare the combination therapy of adenosine and nitroprusside in no-reflow phenomenon during percutaneous coronary intervention. Improvement in coronary flow from no-reflow to postdrug state was evaluated. Patients who received adenosine (n = 21) were compared to ones who received the combination of adenosine and nitroprusside (n = 20) for treatment. Improvement of TIMI flow grades was higher in the group that received combined therapy (1.5 +/- 1.0 vs. 0.8 +/- 0.6; P < 0.05). Combination therapy of adenosine and nitroprusside is safe and provides better improvement in coronary flow compared to intracoronary adenosine alone in case of impaired flow during coronary interventions.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15065143

Am J Cardiol (2004);93:1515-9
Impact of nephropathy after percutaneous coronary intervention and a method for risk stratification
B. A. Bartholomew*, et al.*
Division of Cardiology, William Beaumont Hospital, Royal Oak, Michigan 48073, USA.
Radiocontrast-induced nephropathy (RCIN) after percutaneous coronary intervention (PCI) is associated with grave consequences, but risk stratification of patients has not been well elucidated. This analysis derived a time-insensitive score to predict(risk sred(4ne)]T)]TJ0ta

2002) comprised 20,479 patients who underwent PCI. RCIN after PCI was defined as a >/=1.0 mg/dl increase in serum creatinine. Variables having an independent correlation for RCIN after PCI were used to derive the RCIN risk score from the derivation cohort and were tested in the validation cohort. RCIN occurred in 2% of patients after PCI. Independent variables (with weighted scores) include estimated creatinine clearance <60 ml/min (2), urgent PCI (2), intra-aortic balloon pump use (2), diabetes mellitus (1), congestive heart failure (1), hypertension (1), peripheral vascular disease (1), and contrast volume >260 ml (1). The incidence of RCIN after PCI increased with each unit increase in score (p <0.0001, concordance statistic 0.89). No patient with a score </=1 developed nephropathy, whereas 26% of patients with a score >/=9 developed RCIN after PCI (p <0.0001). Propensity score analysis showed that patients who developed RCIN after PCI, irrespective of the need for hemodialysis, had higher in-hospital rates of major adverse cardiac events (odds ratio 15, 95% confidence interval 11 to 20, p <0.0001). RCIN occurred in 2.0% of PCI patients and was associated with a 15-fold increase in adverse cardiac events. The RCIN risk score was a clinical assessment tool with excellent predictive ability in identifying the larger population at risk for nephropathy in whom preventative strategies are indicated.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15194023

J Am Coll Cardiol (2004);44:57-62
The angiographic and clinical benefits of mibefradil in the coronary slow flow phenomenon
J. F. Beltrame*, et al.*
Cardiology Unit, North Western Adelaide Health Service, University of Adelaide, Adelaide, Australia. john.beltrame@adelaide.edu.au
OBJECTIVES: The aim of the study was to assess the angiographic and clinical benefits of the calcium T-channel blocker, mibefradil, in the coronary slow flow phenomenon (CSFP). BACKGROUND: The CSFP is characterized by delayed vessel opacification on angiography (Thrombolysis In Myocardial Infarction [TIMI]-2 flow) in the absence of obstructive epicardial coronary disease and is often associated with recurrent chest pain. METHODS: A total of 10 CSFP patients (46 +/- 9 years) underwent angiography before and 30 min after 50 mg mibefradil; off-line blinded analysis of angiographic data included comparisons of epicardial vessel diameter, TIMI flow grade and TIMI frame count. We also performed a randomized, double-blind, placebo-controlled, cross-over study to examine the long-term efficacy of mibefradil 100 Ade-2al Inf4 Tw[ow) ne8(r)-1.714eph-riELyD-0.00 double-bilnobI mib(I)Ade(ru)epi8.18 0l (mib(Io.5(,)2

support a microspastic pathogenesis of the CSFP.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15234407

Am J Cardiol (2004);94:361-3
Comparison of femoral bleeding complications after coronary angiography versus percutaneous coronary intervention
C. Berry*, et al.*
Department of Cardiology, Glasgow Royal Infirmary, United Kingdom.
colin.berry@clinmed.gla.ac.uk
Vascular complications arising after coronary angiography (CA) and percutaneous coronary intervention (PCI) may be under-reported. Access site complications were studied after consecutive CA and PCI in the investigators' center (an urban university hospital) from October to December 2002. Three hundred eleven consecutive procedures (237 CA studies and 74 PCIs) were included, of which 309 (99%) involved femoral arterial access. Seventy percent of all arterial punctures were closed by manual pressure, 28% by C-pressure clamps, and 2% with closure devices. Femoral hematomas occurred in 22% and 41% of CA studies and PCIs, respectively. Hematoma >5 cm occurred in 6% and 11% of CA studies and PCIs, respectively. Nineteen patients (23%) with access site complications had prolonged hospital admission. Increased body mass index and hematoma development within the catheter laboratory were predictors of prolonged admission.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15276106

Catheter Cardiovasc Interv (2004);63:284-9
Vascular access site complications with the use of closure devices in patients treated with platelet glycoprotein IIb/IIIa inhibitors during rescue angioplasty
F. Boccalandro*, et al.*
Cardiology Division, University of Texas Medical School and Memorial Hermann Hospital, Houston, Texas 77030, USA.
The objective of this study was to evaluate the effectiveness of two different closure devices in patients undergoing rescue percutaneous coronary intervention (PCI) using IIb/IIIa inhibitors and to compare it with patients undergoing elective PCI. One hundred sixty-two patients undergoing rescue PCI treated with IIb/IIIa inhibitors underwent vascular access site closure (6 Fr Perclose, n = 92, or 6 Fr Angioseal, n = 70). Vascular complications were compared with a sex- and age-matched group (n = 100) of patients undergoing manual compression after sheath removal and a similar group of patients undergoing elective PCI (n = 196). The incidence of access site complications was not significantly different between the three groups undergoing rescue PCI and was not higher than in patient receiving GP IIb/IIIa inhibitors without fibrinolysis (RR = 0.95; 95% CI = 0.88-1.01). In patients undergoing rescue PCI and receiving IIb/IIIa inhibitors, closure devices allow early sheath removal and are associated with similar outcomes compared with manual compression and elective PCI regardless of the type of closure device used.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15505838

J Am Coll Cardiol (2004);44:762-5
N-Acetylcysteine versus fenoldopam mesylate to prevent contrast agent-associated nephrotoxicity
C. Briguori*, et al.*
Laboratory of Interventional Cardiology and Department of Cardiology, Clinica Mediterranea, Naples, Italy. briguori.carlo@hsr.it
OBJECTIVES: We performed a study to assess the efficacy of fenoldopam mesylate (a specific agonist of the dopamine-1 receptor) as compared with N-acetylcysteine (NAC) in preventing contrast agent-associated nephrotoxicity (CAN). BACKGROUND: Prophylactic administration of NAC, along with hydration, prevents CAN in patients with chronic renal insufficiency who are undergoing contrast media administration. Preliminary data support the hypothesis that fenoldopam might be as effective as NAC. METHODS: One hundred ninety-two consecutive patients with chronic renal insufficiency, referred to our institution for coronary and/or peripheral procedures, were assigned randomly to receive 0.45% saline intravenously and NAC (1,200 mg orally twice daily; NAC group; n = 97) or fenoldopam (0.10 microg/kg/min; fenoldopam group; n = 95) before and after a nonionic, iso-osmolality contrast dye administration. RESULTS: Baseline creatinine levels were similar in the two groups: NAC group = 1.72 mg/dl (interquartile range, 1.55 to 1.90 mg/dl) and fenoldopam group = 1.75 mg/dl (interquartile range, 1.62 to 2.01 mg/dl) (p = 0.17). An increase of at least 0.5 mg/dl of the creatinine concentration 48 h after the procedure occurred in 4 of 97 patients (4.1%) in the NAC group and in 13 of 95 patients (13.7%) in the fenoldopam group (p = 0.019; odds ratio 0.27; 95% confidence interval 0.08 to 0.85). The amount of contrast media administration was similar in the two groups (NAC group = 160 +/- 82 ml; fenoldopam group = 168 +/- 104 ml; p = 0.54). CONCLUSIONS: N-acetylcysteine seems to be more effective than fenoldopam in preventing CAN.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15312855

J Am Coll Cardiol (2004);43:1161-7
Characteristics of cerebrovascular accidents after percutaneous coronary interventions
S. Dukkipati*, et al.*
Division of Cardiology, William Beaumont Hospital, Royal Oak, Michigan 48073, USA.
OBJECTIVES: We sought to identify the incidence, predictors, and clinical implications of cerebrovascular accidents (CVAs) after percutaneous coronary interventions (PCIs). BACKGROUND: Cerebrovascular accidents after PCI, although rare, can be devastating. Limited information exists regarding the characterization of this

underwent urgent or emergent procedures (OR 2.7, 95% CI 1.3 to 5.5; p = 0.0092) with more thrombolytic (OR 4.7, 95% CI 2.3 to 9.7; p < 0.0001) and intravenous heparin (OR 1.9, 95% CI 1.1 to 3.4; p = 0.030) use before PCI, and they more often required emergent intra-aortic balloon pump placement (OR 2.2, 95% CI 1.1 to 4.3; p = 0.028). On multivariate analysis, CVA was independently associated with in-hospital death (OR 7.8, 95% CI 4.2 to 14.7; p < 0.0001), acute renal failure (OR 2.8, 95% CI 1.4 to 5.7; p = 0.0042), and new dialysis (OR 3.73, 95% CI 1.01 to 13.8; p = 0.049) after PCI. CONCLUSIONS: Cerebrovascular accidents after PCI, although rare, are associated with high rates of in-hospital death and acute renal failure, often requiring dialysis.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15063423

Am Heart J (2004);147:140-5
Incidence, correlates, management, and clinical outcome of coronary perforation: analysis of 16,298 procedures
P. Fasseas*, et al.*
Division of Cardiovascular Medicine, Department of Medicine, Mayo Clinic, Rochester, Minn 55905, USA.
BACKGROUND: Coronary perforation is a serious but uncommon complication of percutaneous coronary intervention (PCI) and is associated with significant morbidity and mortality. METHODS: We performed an analysis of the Mayo Clinic PCI database. Clinical records, procedural reports, and angiographic studies were reviewed. Multiple logistic regression analysis was performed to identify clinical, procedural, anatomic, and angiographic correlates of coronary perforation. RESULTS: A total of 16,298 PCI procedures were performed between January 1990 and December 2001. We identified 95 coronary perforations (0.58%; 95% CI, 0.47-0.71). The incidence of coronary perforation varied with time. Correlates of coronary perforation included the use of an atheroablative device and female sex. Twelve patients (12.6%) sustained an acute myocardial infarction, and cardiac tamponade developed in 11 patients (11.6%). Management strategies included reversal of heparin, pericardiocentesis, placement of a covered stent, and surgical repair. Seven patients died (7.4%). CONCLUSIONS: Coronary perforation during PCI is rare, but is associated with significant morbidity and mortality. The variable frequency of perforation may be explained by temporal variations in the use of atheroablative devices.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14691432

Eur Heart J (2004);25:212-8
Oral acetylcysteine as an adjunct to saline hydration for the prevention of contrast-induced nephropathy following coronary angiography. A randomized controlled trial and review of the current literature
I. Goldenberg*, et al.*
Heart Institute, Sheba Medical Center, Tel Hashomer, Israel.
AIMS: To determine laboratory and clinical benefit of oral acetylcysteine, as an adjunct to saline hydration, in chronic renal insufficiency patients undergoing coronary angiography. METHODS AND RESULTS: We prospectively studied 80 patients with chronic renal insufficiency (mean [+/-SD] serum creatinine concentration

2.0+/-0.39mg/dl), who underwent coronary angiography with or without intervention. Patients were randomly assigned to receive either acetylcysteine (600mg orally t.i.d.) or placebo, in addition to intravenous 0.45% saline (1ml/kg of body weight per hour), 12h prior to and after coronary angiography. There was an increase of >/=0.5mg/dl in the serum creatinine concentration 48h after coronary angiography in seven of the 80 patients (9%): in four of the 41 patients (10%) in the acetylcysteine group and in three of the 39 patients (8%) in the placebo group (P=0.52). The incidence of in-hospital adverse clinical events (acetylcysteine, 5% vs placebo, 8%, P=0.47) and the length of hospital stay [acetylcysteine, median (interquartile range) 4 (2-4) days vs placebo, 2 (2-4) days, P=0.44] did not differ significantly between the two treatment groups. CONCLUSION: Our findings do not support routine prophylactic administration of oral acetylcysteine as an adjunct to saline hydration for the prevention of contrast-induced nephropathy in chronic renal insufficiency patients undergoing coronary angiography.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14972421

Am J Cardiol (2004);93:458-61
Risk factors for intracranial hemorrhage and nonhemorrhagic stroke after fibrinolytic therapy (from the GUSTO-i trial)
D. E. Kandzari*, et al.*
Department of Medicine, Duke University Medical Center, Durham, North Carolina 27710, USA.
Of 592 patients in the Global Utilization of Streptokinase and tPA for Occluded Arteries-I trial who had a stroke during initial hospitalization, the risk for intracranial hemorrhage was significantly greater in those with recent facial or head trauma (odds ratio 13.0, 95% confidence interval 3.4 to 85.5); dementia was additionally associated with an increased risk for intracranial hemorrhage (odds ratio 3.4, 95% confidence interval 1.2 to 10.2). Because facial or head trauma may greatly influence treatment decisions, this risk factor should be incorporated into models designed to estimate the risks and benefits of fibrinolytic therapy.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=14969623

Catheter Cardiovasc Interv (2004);62:181-5
Vascular complications following coronary intervention correlate with long-term cardiac events

22.7%), death (12.9% vs. 5.9%), and CABG (5.7% vs. 4.5%) were higher (< 0.001) in patients with PVC compared to those without. Multivariate analysis identified PVC as a significant predictor of 1-year mortality (P = 0.045). This study underscores the need to make diligent efforts to minimize PVC and follow up these patients for future coronary events.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15170707

Am J Cardiol (2005);95:167-72
Impact of baseline renal function on mortality after percutaneous coronary intervention with sirolimus-eluting stents or bare metal stents
P. A. Lemos*, et al.*
Heart Institute (InCor), University of Sao Paulo Medical School, Sao Paulo, Brazil.
Renal impairment is an important predictor of mortality after percutaneous coronary intervention and may increase the restenosis rate. However, the relation between restenosis and the risk of death in patients who have renal impairment remains unclear. We evaluated the incidences of repeat revascularization and mortality in patients who had renal impairment and those who did not and who received sirolimus-eluting stents or bare stents. A total of 1,080 consecutive patients treated for 1 year had available data to calculate baseline creatinine clearance. Patients received bare stents (first 6 months, n = 543) or sirolimus-eluting stents (last 6 months, n = 537) and were grouped according to the presence or absence of renal impairment (creatinine clearance <60 ml/min). Patients who had renal impairment had a higher mortality rate at 1 year (7.6% vs 2.5%, hazard ratio 3.14, 95% confidence interval 1.68 to 5.88, p <0.01), with no differences in mortality between patients who received bare stents and those who received sirolimus-eluting stents (hazard ratio 0.91, 95% confidence interval 0.49 to 1.68, p = 0.8). The incidence of target vessel revascularization decreased significantly in patients who were treated with sirolimus-eluting stents and did not have renal impairment (hazard ratio 0.59, 95% confidence interval 0.39 to 0.90, p = 0.01) and in those who had decreased renal function (hazard ratio 0.37, 95% confidence interval 0.15 to 0.90, p = 0.03). Thus, sirolimus-eluting stents compared with conventional stents decreased clinical restenosis in patients who had renal impairment. However, this benefit was not paralleled by a decrease in the risk of death in this population. It seems unlikely that restenosis could be a contributing factor that influenced the increased mortality of patients who had impaired renal function.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15642546

J Am Coll Cardiol (2004);44:1780-5
Contrast-induced nephropathy in patients undergoing primary angioplasty for acute myocardial infarction
G. Marenzi*, et al.*
Centro Cardiologico Monzino, I.R.C.C.S., Institute of Cardiology of the University of Milan, Milan, Italy. giancarlo.marenzi@ccfm.it
OBJECTIVES: The aim of this research was to assess the incidence, clinical predictors, and outcome of contrast-induced nephropathy (CIN) after primary percutaneous coronary intervention (PCI) for acute myocardial infarction (AMI). BACKGROUND:

Contrast-induced nephropathy is associated with significant morbidity and mortality after PCI. Patients undergoing primary PCI may be at higher risk of CIN because of hemodynamic instability and unfeasibility of adequate prophylaxis. METHODS: In 208 consecutive AMI patients undergoing primary PCI, we measured serum creatinine concentration (Cr) at baseline and each day for the following three days. Contrast-induced nephropathy was defined as a rise in Cr >0.5 mg/dl. RESULTS: Overall, CIN occurred in 40 (19%) patients. Of the 160 patients with baseline Cr clearance >/=60 ml/min, only 21 (13%) developed CIN, whereas it occurred in 19 (40%) of those with Cr clearance <60 ml/min ($p < 0.0001$). In multivariate analysis, age >75 years (odds ratio [OR] 5.28, 95% confidence interval [CI] 1.98 to 14.05; $p = 0.0009$), anterior infarction (OR 2.17, 95% CI 0.88 to 5.34; $p = 0.09$), time-to-reperfusion >6 h (OR 2.51, 95% CI 1.01 to 6.16; $p = 0.04$), contrast agent volume >300 ml (OR 2.80, 95% CI 1.17 to 6.68; $p = 0.02$) and use of intraaortic balloon (OR 15.51, 95% CI 4.65 to 51.64; $p < 0.0001$) were independent correlates of CIN. Patients developing CIN had longer hospital stay (13 +/- 7 days vs. 8 +/- 3 days; $p < 0.001$), more complicated clinical course, and significantly higher mortality rate (31% vs. 0.6%; $p < 0.001$). CONCLUSIONS: Contrast-induced nephropathy frequently complicates primary PCI, even in patients with normal renal function. It is associated with higher in-hospital complication rate and mortality. Thus, preventive strategies are needed, particularly in high-risk patients.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15519007

Circulation (2004);109:1476-81
Beneficial effects of clopidogrel combined with aspirin in reducing cerebral emboli in patients undergoing carotid endarterectomy
D. A. Payne*, et al.*
Department of Surgery, University of Leicester, Leicester, UK.
BACKGROUND: Postoperative thromboembolic stroke affects 2% to 3% of patients undergoing carotid endarterectomy (CEA) and is preceded by 1 to 2 hours of increasing cerebral embolization. Previous work has demonstrated that high rates of postoperative

a CEA patient's postoperative thromboembolic potential can be significantly reduced by targeted preoperative antiplatelet therapy without increasing the risk of bleeding complications.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15007001

J Am Coll Cardiol (2004);44:300-4
The decrease of plaque volume during percutaneous coronary intervention has a negative impact on coronary flow in acute myocardial infarction: a major role of percutaneous coronary intervention-induced embolization
H. Sato*, et al.*
Tsukazaki Memorial Hospital, Himeji, Japan. sato@tsukazaki.or.jp
OBJECTIVES: The aim of this study was to evaluate how decreased plaque volume during percutaneous coronary intervention (PCI) affects coronary flow in patients with acute myocardial infarction (AMI). BACKGROUND: Coronary flow after reperfusion therapy is a major determinant of clinical outcomes in patients with AMI. However, little is still known about the changes in coronary flow that appear after PCI in response to the decreased plaque during the procedure. METHODS: The study group comprised 60 patients with AMI who underwent pre- and post-PCI intravascular ultrasound (IVUS). Qualitative and quantitative analyses were performed on all IVUS procedures. External elastic membrane volume (EEMV), lumen volume (LV), and plaque volume (PV) were measured every 1.0 mm to include the lesion and reference segments 3.0 mm proximal and distal to the lesion. The difference between pre- and post-PCI PV was defined as the index of the decrease in plaque volume (DeltaPV). The corrected TIMI frame count (CTFC) was used to evaluate coronary flow after PCI. RESULTS: Plaque volume was decreased at post-PCI IVUS in all 60 patients. Inadequate reflow (CTFC >40) was observed in 13 patients (21.7%). The decrease in PV was significantly larger in patients with inadequate reflow than in those with reflow (49.4 +/- 18.9 vs. 31.7 +/- 15.5 mm(3), p = 0.0010). Also, DeltaPV was significantly correlated with CTFC after PCI (r = 0.415, p = 0.0012). CONCLUSIONS: The decrease in PV during PCI has a negative impact on coronary flow after PCI in patients with AMI. Embolization induced by PCI may occur in all patients with AMI.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15261922

J Am Coll Cardiol (2004);44:357-61
Comparison of Mayo Clinic risk score and American College of Cardiology/American Heart Association lesion classification in the prediction of adverse cardiovascular outcome following percutaneous coronary interventions
M. Singh*, et al.*
Division of Cardiovascular Diseases and Internal Medicine, Rochester, Minnesota, USA. singh.mandeep@mayo.edu
OBJECTIVES: We compared American College of Cardiology/American Heart Association (ACC/AHA) lesion classification with the recently proposed Mayo Clinic risk score to predict complications following percutaneous coronary intervention (PCI). BACKGROUND: The ability of the ACC/AHA classification system to predict complications following PCI has been modest. With the inclusion of patient

whether primary PCI could reduce such risk. METHODS AND RESULTS: From May 1993 through March 2003, a total of 1,321 patients with AMI (for < 12 h) underwent primary PCI in our hospital. Of these 1,321 patients, 3 patients (0.23%) developed VSD after undergoing a primary PCI, with a mean (+/- SD) time of occurrence of 25.3 +/- 12.2 h. During the same period, a total of 616 consecutive, unselected patients with early AMI [ie, > 12 h and < or = 7 days] or recent myocardial infarction (MI) [ie, > or = 8 days and < 30 days] who had not received thrombolytic therapy underwent elective PCI. Of these 616 patients, 18 (2.9%) had VSD either on presentation or during hospitalization, with a mean time of occurrence of 71.1 +/- 64.2 h. Clinical variables were utilized to statistically analyze the potential risk factors. Univariate analysis demonstrated that the enrollment variables strongly related to this complication were advanced age, hypertension, nonsmokers, anterior infarction, female gender, and lower body mass index (BMI) [all $p < 0.005$]. Using multiple stepwise logistic regression analysis, the only variables independently related to VSD were advanced age, female gender, anterior infarction, and low BMI (all $p < 0.05$). The in-hospital mortality rate was significantly higher in patients with this complication than in patients without this complication (47.6% vs 8.0%; $p < 0.0001$). The incidence of this complication was significantly lower in patients with AMI who underwent primary PCI than in those with early or recent MI who underwent elective PCI (3.0% vs 0.23%, respectively; $p = 0.0001$). CONCLUSION: Primary PCI had a striking impact on reducing the incidence of VSD after AMI compared to elective PCI in patients who did not receive thrombolytic therapy. Advanced age, female gender, anterior infarction, and low BMI had potentially increased the risk of this catastrophic complication after AMI in this Chinese population. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15136368