

The database comprised 1380 TIA patients and 3855 stroke patients. During hospitalization, stroke incidence was 8% for TIA patients, and an additional 5% had strokes within 6 months. These figures for ischemic stroke patients were 7% and 6% respectively ($P > .05$). Two percent of TIA patients died in the hospital (5% after hospitalization) compared with 9% of stroke patients (10% after hospitalization, $P < .001$). Seventeen percent of TIA patients compared with 38% of ischemic stroke patients ($P < .05$) were dependent at follow-up. A pre-existing neurologic deficit (mRS > 2) was the strongest predictor for death or disability (baseline mRS odds ratio, 4.1; 95% confidence interval, 2.32 to 7.2). The most important and significant predictors for death or dependency at follow-up in TIA patients were age greater than 60 years, mRS greater than 2 on admission, a cardiogenic source of emboli, or a visible infarction on computed tomography or magnetic resonance imaging.

Comment: The data indicate that hospitalized patients with TIA have a better outcome than hospitalized patients with stroke. Nevertheless, the risk for death or disability is still quite remarkable in the TIA patients. TIA patients should be treated in a manner similar to acute stroke patients with respect to urgency of evaluation and institution of appropriate therapy.

Upper-extremity deep vein thrombosis: a prospective registry of 592 patients

Joffe HV, Kucher N, Tapson VF, et al. *Circulation* 2004;110:1605-11.

Conclusion: Upper-extremity deep venous thrombosis (UEDVT) risk factors differ from conventional risk factors for lower-extremity DVT (LEDVT).

Summary: The authors sought to improve understanding of UEDVT through a description of 592 patients with UEDVT. Data was derived from a United States multicenter prospective registry of 5451 patients with ultrasound-diagnosed DVT. The authors compared demographics, risk factors, DVT prophylaxis, symptoms, and initial management of patients with central venous catheter-associated UEDVT and noncentral venous catheter-associated UEDVT versus patients with LEDVT. Available for comparison were 324 patients with central venous catheter-associated UEDVT, 268 patients with noncentral venous catheter-associated UEDVT, and 4796 patients with LEDVT.

Noncentral venous catheter-associated UEDVT patients were younger (59.2 ± 18.2 years old vs 64.2 ± 16.9 years old, $P < .0001$), less often white (65% vs 73%, $P < .01$), and had a lower body mass index (BMI) (26.8 ± 7.1 kg/m² vs 28.5 ± 7.3 kg/m², $P < .001$). They were also more likely to smoke (19% vs 13%, $P = .02$) than LEDVT patients.

An in-dwelling central venous catheter was the strongest independent predictor of UEDVT (odds ratio, 7.3; 95% confidence interval, 5.1 to 9.2). A BMI of less than 25 kg/m², an age younger than 67 years, and hospitalization were independent predictors of noncentral venous catheter-associated UEDVT. Only 20% of 378 UEDVT patients who did not have an obvious contraindication to anticoagulation had received prophylaxis at time of diagnosis.

Comment: In addition to the obvious risk factor of a central venous catheter for production of UEDVT, the authors point out differences between risk factors for UEDVT and LEDVT. Younger age and lean body weight, as well as inpatient status, independently predicted UEDVT. The data suggest possible underlying differences in the pathophysiology of upper-extremity versus lower-extremity DVT.

Homocysteine levels, haemostatic risk factors and patency rates after endovascular treatment of the above-knee femoral-popliteal artery

Laxdal E, Eide GE, Wirsching J, et al. *Eur J Vasc Endovasc Surg* 2004;28:410-7.

Conclusion: Early restenosis or occlusion after endovascular treatment of the above-knee femoral-popliteal artery is frequent in patients with diabetes, elevated d-dimer, in those without antithrombotic therapy after the procedure, and in patients treated for occlusion rather than stenosis.

Summary: This prospective observational study was conducted at a university hospital in Norway. The authors investigated the relationship between hemostatic variables and plasma homocysteine, and restenosis or occlusion after endovascular treatment of symptomatic femoral-popliteal lesions. The study comprised 116 limbs and 103 patients. Angioplasty was subintimal in 58 cases (50%) and intraluminal in 58 cases (50%). Occlusions longer than 4 cm were treated with subintimal angioplasty, and occlusions shorter than 4 cm or stenoses were treated with transluminal angioplasty. Thirty-four percent of patients were treated for critical limb ischemia. Prior to angioplasty, plasma values were obtained for homocysteine, d-dimer, fibrinogen, and protein-C resistance.

Median follow-up was 11 months (range, 0 to 42 months). Patients treated with subintimal angioplasty had follow-up at 1, 3, 6, 9, 12, and 18 months with ankle brachial index (ABI) measurements as well as duplex ultrasound scans of the treated artery. Patients treated with intraluminal angioplasty had routine follow-up at 1 and 12 months with ABI measurements and clinical evaluation. Many patients had additional follow-up

because symptoms reoccurred or contralateral disease developed. A reduction in ABI of more than 10% combined with recurrence of symptoms indicated restenosis or occlusion. Findings were confirmed either by angiography or duplex ultrasound scans. End point frequency rates were estimated with the Kaplan-Meier method. The Cox proportion hazard model was used to assess variables related to patency.

Using the authors' definition of patency, the 1-year cumulative patency rate for all procedures was 48%. Limb salvage was 74% in cases of critical limb ischemia. Homocysteine was higher in the patients with critical limb ischemia than in those with claudication alone. Multivariable analysis suggested significant independent associations between patency rates and plasma d-dimer, diabetes, nature of the lesion treated (stenosis vs occlusion), and use of antithrombotic therapy (aspirin) after the procedure. There was no association with patency among plasma levels of homocysteine, activated protein-C resistance, or fibrinogen.

Comment: Inconsistent follow-up and no consistent protocol incorporating imaging studies of the treated artery are obvious major weaknesses of this paper. In addition, the mixing of two types of angioplasty techniques and the mixing of clinical indications are also serious methodologic weaknesses that preclude any definitive conclusions. However, the idea that different hematologic factors may have variable effects on the outcome of the angioplasty is interesting and deserves further study.

Preclinical changes in the mechanical properties of the abdominal aorta in obese children

Iannuzzi A, Licenziati MR, Acampora C, et al. *Metabolism* 2004;53:1243-6.

Conclusion: High-resolution B-mode ultrasound scans can be used to demonstrate changes in the mechanical properties of the abdominal aorta in obese children.

Summary: Childhood obesity is associated with the development of early vascular abnormalities. The authors investigated whether B-mode ultrasound scanning could be used to detect preclinical functional changes in the abdominal aorta of obese children. Fifty healthy controls and 100 consecutive obese children were studied. The obese children and controls were matched in terms of age and gender. B-mode ultrasound scanning was used to determine the wall motion of the abdominal aorta. The authors then measured or computed the following mechanical properties: lumen systolic and diastolic diameters, aortic strain, elastic modulus, and stiffness. Measurements of blood pressure, total cholesterol, triglycerides, insulin, and C-reactive protein were also obtained.

Compared with controls, obese children had higher concentrations of total cholesterol, triglycerides, C-reactive protein, insulin, and higher blood pressure. Homeostasis model assessment (HOMA), a parameter of insulin resistance, was significantly higher in obese children than in controls ($P < .001$). Aortic mechanical parameters were also significantly different in obese children than in controls, with stiffness ($P < .001$) as well as elastic modulus ($P < .001$) both being higher in obese children than in controls. Obese girls in the highest tertile of HOMA had increased aortic stiffness compared to obese girls in the lowest tertile of HOMA ($P = .045$).

Comment: The data are consistent with, and compliment, an additional recent study that detected abnormalities in carotid artery distension and brachial artery reactivity in obese children (*Lancet* 2001;358:1400-4). Increased traditional cardiovascular risk factors as well as alterations in blood vessel mechanical properties induced by obesity may act in combination to facilitate premature atherosclerosis in the obese.

The role of clinical examination in excluding vascular injury in hemodynamically stable patients with gunshot wounds to the neck. A prospective study of 59 patients

Mohammed GS, Pillay WR, Barker P, et al. *Eur J Vasc Endovasc Surg* 2004;28:425-30.

Conclusion: Even in stable patients with gunshot wounds to the neck, physical examination is not a good predictor of vascular injury.

Summary: This was a study of 59 hemodynamically stable patients with low-velocity gunshot wounds to the neck. Unstable patients and those with obvious tracheal injury were excluded. Study patients underwent a clinical examination according to a specific written protocol, and all underwent an arch and four-vessel cerebral angiography. The study was conducted over 16 months in a regional trauma hospital in South Africa. Comparing physical exam with angiography, the authors calculated sensitivity, specificity, and predictive values of physical examination to predict vascular injury.

The injury site was in zone 2 in 26 patients, 11 of whom had vascular injury. Seventeen patients had zone 1 entry wounds, and eight patients had zone 3 entrance wounds. In eight patients, the entrance wound was situated outside the neck and two patients had more than one entrance wound. Twenty-six patients had vascular injuries, and all but three were arterial injuries. The most common vessel injured was the common carotid artery in 31%.

Of the 29 patients without physical examination signs of vascular injury, 10 had evidence of vascular injury by angiography. Only 13 of 30