

Abstracts

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Population-Based Study of Incidence and Outcome of Acute Aortic Dissection and Premorbid Risk Factor Control: 10-Year Results From the Oxford Vascular Study

Howard DPJ, Banerjee A, Fairhead JF, et al. *Circulation* 2013;127:2031-7.

Conclusions: Hospital-based registries likely underestimate not only the incidence of acute aortic dissection but also its association with premorbid hypertension. The most significant treatable condition leading to acute aortic dissection remains uncontrolled hypertension.

Summary: Even with well-established treatment guidelines, acute aortic dissection can have a high case fatality rate. However, little data on risk factors, incidence, or outcome of acute aortic dissection are available, and there is no prospective population-based study. Although abdominal aortic aneurysm incidence of rupture appears to be declining (Darwood R et al, *J Vasc Surg* 2012;56:8-13), trends with respect to acute aortic dissection are uncertain (Thrumurthy SG et al, *BMJ* 2012;344:d8290). The authors note there have only been two studies of the epidemiology of aortic dissection since 1980, and both were retrospective and used only routinely collected diagnostic or mortality coding data. Neither study assessed premorbid risk factors or functional outcome (Clouse WD et al, *Mayo Clin Proc* 2004;79:176-80; and Olsson C et al, *Circulation* 2006;114:2611-8). This study used the 92,728 patient population of Oxfordshire in the United Kingdom to prospectively determine event rates, incidence, risk factors, early case fatality, and long-term outcome of all cases of acute aortic dissection from 2002 to 2012. Data were collected as part of the Oxford Vascular Study. Among 155 patients with 174 acute aortic events, there were 54 patients (31 men; mean age, 72.0 years) with 59 thoracoabdominal aortic dissections (52 incident events: 6/100,000; 95% confidence interval, 4-7) comprising 37 Stanford type A and 15 Stanford type B. Of the patients with type A incident events, 18 (48.6%) died before hospital assessment (61.1% women). The 30-day fatality rate was 47.4% for patients with type A dissections who survived to hospital admission and 13.3% for patients with type B dissections. Subsequent 5-year survival rates were, however, high (85.7% for type A; 83.3% for type B). Although 67.3% of patients were taking antihypertensive drugs, 46.0% had at least one systolic BP >180 mm Hg in their primary care records during the preceding 5 years. The proportion of blood pressures in the hypertensive range (>140/90 mm Hg) averaged 56.0%. Premorbid blood pressure in the type A dissection patients was higher in those patients where the dissection was immediately fatal than in those who survived to admission (mean/standard deviation pre-event systolic blood pressure was 151.2 ± 19.3 vs 137.9 ± 17.9; $P < .001$).

Comment: The data suggest that the incidence of acute aortic dissection is higher than previously reported. The authors speculate this is likely due to more complete inclusion of deaths before hospital admission. If one does the numbers in the report, it appears there are ~44 ruptured abdominal aortic aneurysms per year and 24 acute aortic dissections per year in the Oxford population of ~93,000 patients. The Oxford population is 94% Caucasian, whereas that of the United States is about 72.4% Caucasian, and thus, the incidence rates of acute aortic events in this study are not directly applicable to all populations. Nevertheless, the epidemiologic data provided here allow one to estimate the burden of acute aortic events in many regions of Europe, Australia, and the United States.

Cilostazol Reduces Angiographic Restenosis After Endovascular Therapy for Femoropopliteal Lesions in the Sufficient Treatment of Peripheral Intervention by Cilostazol Study

Iida O, Yokoi H, Soga Y, et al., and the STOP-IC investigators. *Circulation* 2013;127:2307-15.

Conclusions: Cilostazol reduces angiographic restenosis for femoropopliteal lesions after percutaneous transluminal angioplasty with provisional nitinol stenting.

Summary: Use of nitinol stents has improved long-term outcomes of endovascular therapy for femoropopliteal lesions compared with balloon angioplasty alone (Schillinger M et al, *N Engl J Med* 2006;354:1879-88; and Laird JR et al, *Circ Cardiovasc Interv* 2010;3:267-76). However, even with the use of stents, there remains a 20% to 50% incidence of restenosis at 1 year. The present study was designed to determine, using

angiographic follow-up, whether treatment with cilostazol reduces restenosis at 12 months after percutaneous transluminal angioplasty with provisional nitinol stenting. The Sufficient Treatment of Peripheral Intervention by Cilostazol study enrolled 200 patients with femoropopliteal lesions. Patients were treated from March 2009 to April 2011 at 13 centers and randomly assigned 1:1 to receive oral aspirin with or without cilostazol. The primary end point was 12-month angiographic restenosis of ≥50%. Secondary end points were restenosis rates on duplex ultrasound imaging (peak systolic velocity >200 cm/s), rates of major adverse cardiac events, and target lesion event-free survival. End points were assessed in a blinded fashion. The mean lesion length and reference vessel diameter at the treated segment were 128 ± 86 mm and 5.4 ± 1.4 mm, respectively. Frequency of stent use was similar between groups (88% vs 90% in the cilostazol and non-cilostazol groups, respectively; $P = .82$). Eleven patients died, and 152 (80%) had evaluable angiographic data at 12 months of follow-up. Angiographic restenosis at 12 months was 20% (15 of 75) in the cilostazol group vs 49% (38 of 77) in the noncilostazol group ($P = .0001$) by intention-to-treat analysis. There was also a significantly higher event-free survival in the cilostazol group at 12 months (83% vs 71%, $P = .02$). Cardiovascular event rates were similar in both groups.

Comment: The data indicate cilostazol, in combination with aspirin, can significantly reduce angiographic restenosis after endovascular therapy for femoropopliteal disease. This study is limited by the fact that, strictly speaking, the data apply only to a Japanese population. At the start of the study, the S.M.A.R.T. stent was the only one available for this study. Newer-generation stents and drug-eluting stents were not included. Certainly, restenosis rates with the use of cilostazol and newer stents or clopidogrel, or both, in more varied populations will also be of interest. Until such data are available, routine addition of cilostazol as an adjunct to femoropopliteal stenting is not likely to occur.

Home-Based Walking Exercise Intervention in Peripheral Artery Disease a Randomized Clinical Trial

McDermott MM, Liu K, Guralnik JM, et al. *JAMA* 2013;310:57-65.

Conclusions: Home-based walking exercise programs can significantly improve walking endurance, physical activity, and patient-perceived walking endurance and speed in patients with peripheral arterial disease (PAD), with and without classic claudication symptoms.

Summary: Few patients with PAD participate in supervised treadmill exercise therapy (Regensteiner JG, *Curr Drug Targets Cardiovasc Haematol Disord* 2004;4:233-9). There may be many reasons why supervised exercise therapy is not used in the PAD patient, including that it requires regular transportation to an exercise center and that supervised exercise is not generally covered by medical insurance. Although home-based walking exercise would seem a promising alternative to supervised exercise, trials have yielded conflicting results with respect to the efficacy of home-based exercise in the PAD patient. Indeed, most physicians do not recommend home-based walking exercise to patients with PAD (Hirsch AT et al, *Vasc Med* 2001;6:87-96; and McDermott MM et al, *J Gen Intern Med* 2002;17:895-904). Here, the authors report the result of the Group Oriented Arterial Leg Study, a randomized, controlled, clinical trial designed to assess if an intervention to increase home-based walking exercise would improve walking performance at the 6-month follow-up in patients with PAD. A group-mediated cognitive behavioral intervention incorporating group support and self-regulatory skills was used to help participants adhere to a home-based exercise program. The authors' hypothesis was that the intervention group would have greater improvement in objective and subjective measures of walking performance and physical activity compared with a control group that received health education alone. The study included 194 patients with PAD, 72.2% of whom did not have classic symptoms of intermittent claudication. The study took place in Chicago between July 22, 2008, and December 14, 2012. Randomization was to one of two parallel groups, a home-based group-mediated cognitive behavioral walking intervention or an attention control condition. The primary outcome was the 6-month change in 6-minute walk performance. The secondary outcomes included the 6-month change in treadmill walking, physical activity, Walking Impairment Questionnaire, and Physical and Mental