

LMWH therapy after mechanical heart valve replacement

Low-molecular-weight heparins (LMWHs) are widely used in the treatment and prevention of deep vein thrombosis and pulmonary embolism. Because of a lack of data, however, use of these agents to reduce the risk of thromboembolism in patients who have had mechanical heart valve replacement (MHVR) is controversial, even though LMWH has a better safety profile than unfractionated heparin (UFH) in these patients. Meurin *et al.* investigated whether LMWH therapy is a feasible 'bridge' between UFH administration after surgery and anticoagulation with vitamin K antagonists becoming fully effective.

This study enrolled 250 patients at high risk of thromboembolism, an average of 16 ± 11 days after MHVR. Patients received UFH from the first day after surgery, and switched to LMWH following study enrollment. Most patients (76%) had received vitamin K antagonist treatment in the first postoperative week but had not reached the target international normalized ratio; vitamin K antagonist treatment was initially contraindicated in the remaining patients, but was started the day after enrollment. LMWH was continued until the target international normalized ratio was reached. Mean duration of LMWH treatment was 8.3 ± 6.0 days. No thromboembolic events or deaths occurred during the study, and there were no cases of heparin-induced thrombopenia. Only two major bleeding episodes, and three minor bleeding episodes, occurred.

LMWH treatment appears to provide effective anticoagulation between initial postsurgical UFH treatment and fully effective anticoagulation with vitamin K antagonists in patients who have undergone MHVR. The authors state that a randomized study should be initiated to compare UFH with LMWH in this setting.

Rebecca Ireland

Original article Meurin P *et al.* (2006) Low-molecular-weight heparin as a bridging anticoagulant early after mechanical heart valve replacement. *Circulation* 113: 564–569

Risk factors predict survival and likelihood of cardiovascular events

Although mortality from cardiovascular disease (CVD) has decreased steadily in the US over the past 40 years, some cardiovascular risk factors

are currently increasing in prevalence and threaten to reverse this trend. Lloyd-Jones *et al.* reviewed the 7,926 participants from the Framingham Heart Study who were free of CVD at 50 years of age to investigate the role of established risk factors in long-term risk of CVD.

During the period 1971–2002, 1,757 participants experienced CVD events and 1,641 died without developing CVD. The estimated lifetime risk of a 50-year-old developing CVD was high—51.7% (95% CI 49.3–54.2%) for men and 39.2% (95% CI 37.0–41.4%) for women. Lifetime risk of CVD increased, and median overall survival decreased, with increasing severity of single risk factors for CVD at 50 years of age. Of the major risk factors, presence of diabetes was associated with the greatest lifetime risk for CVD, followed by increased blood pressure or total cholesterol, then being overweight or obese. Smoking increased intermediate-term risk of CVD but had less influence in the longer term because smokers tended to die early from other causes, such as cancer, before developing CVD. Compared with optimum risk factor levels, having more than one major risk factor was associated with substantially increased lifetime risk of CVD (69% in men and 50% in women) and substantially shorter median survival (by about 10 years).

As a result of these data, Lloyd-Jones *et al.* call for heightened efforts at preventing development of risk factors for CVD in younger individuals. They note too that improved management is required for individuals who are at high risk of CVD, such as those with diabetes.

Pippa Murdie

Original article Lloyd-Jones DM *et al.* (2006) Prediction of lifetime risk for cardiovascular disease by risk factor burden at 50 years of age. *Circulation* 113: 791–798

Noninvasive and long-term monitoring of pressure in abdominal aortic aneurysm sacs

Long-term monitoring of pressure in abdominal aortic aneurysm (AAA) sacs following endovascular aneurysm repair is feasible, a prospective study at the Mount Sinai School of Medicine, NY, has shown.

Following on from preliminary studies showing that AAA sac shrinkage is associated with low sac pressure, Ellozy *et al.* have used a non-invasive technique to monitor intra-aneurysm