American College of Cardiology 55th Annual Scientific Session

The ACC 55th Annual Scientific Session was held in Atlanta, Georgia, USA (11–14 March 2006)

First data on reversal of plaque build-up with statin therapy

Trial results presented at the meeting suggest that treatment with rosuvastatin (Crestor; AstraZeneca) reverses plaque build-up in people with coronary artery disease.

According to investigators in the ASTEROID (A Study To evaluate the Effect of Rosuvastatin On Intravascular ultrasound-Derived coronary atheroma burden) study, these data mark the first time that statin therapy has been shown to demonstrate coronary artery atheroma regression in a major clinical study.

ASTEROID was a 104-week single-arm, blinded end point study that evaluated the effect of rosuvastatin 40 mg daily in 507 people who had undergone coronary angiography and had evidence of coronary artery disease. Plaque volumes in the target coronary artery were measured at baseline and again after 2 years of treatment with rosuvastatin.

Total atheroma volume in the entire target vessel was reduced by 6.8 % (median; $P<0.001$) in 349 participants, as measured with intravascular ultrasound. A 9.1 % (median; $P<0.001$) reduction in total atheroma volume was observed in the most diseased 10 mm section of the vessel in the same patients.

These effects were observed alongside a 53 % reduction in low-density lipoprotein-cholesterol ($P<0.001$) and a 15 % increase in high-density lipoprotein-cholesterol.

Study suggests choice of stent for insulin-dependent diabetes

Paclitaxel-eluting stents (PES) performed better than sirolimus-eluting stents (SES) in patients with insulin-treated diabetes, according to results from a multicentre registry of 1680 patients that began in 2003.

Most patients (94 %) had been followed up for 9 months after stenting. Of 498 insulin-treated patients, 235 received PES and 263 SES. Of the non-insulin-treated patients, 570 received PES and 612 SES.

The two stents produced similar outcomes with a low incidence of major adverse cardiac events (MACE). However, for insulin-treated people with diabetes, PES resulted in fewer adverse event rates including death (2.1 versus 5.7 %), heart attack (1.3 versus 1.9 %), restenosis (3.4 versus 4.2 %) and overall MACE (5.9 versus 10.6 %).

The odds ratio of a MACE occurring in the insulin-treated group was 52 % lower for PES than for SES; however, this did not reach statistical significance. Study leader Dr Charles Simonton of Carolinas Medical Center, Charlotte, North Carolina, said a randomised prospective clinical trial was now required to confirm the finding.

New anticoagulant regimen shows positive results in acute MI

The results of a randomised, double-blind, double-dummy comparison of two anticoagulant strategies presented at the meeting suggest that a low-molecular-weight heparin, enoxaparin (Clexane; Sanofi-Aventis), significantly reduces the risk of repeat myocardial infarction (MI) or death in patients who have suffered acute MI, compared to unfractionated heparin, when used as an adjunct to fibrinolytic therapy.

The ExTRACT-TIMI 25 (Enoxaparin and Thrombosis Reperfusion for Acute Myocardial Infarction Treatment – Thrombolysis in Myocardial Infarction) trial compared the drug regimens in over 20 000 patients in 48 countries.

The investigators reported that the patients who were administered the enoxaparin-based treatment exhibited a statistically significant 17 % comparative reduction in the risk of death or recurrent non-fatal MI within 30 days compared to those given unfractionated-heparin-based treatment.

Insulin may reduce atrial fibrillation in heart failure

People with diabetes and heart failure who used insulin had a lower risk of atrial fibrillation compared to heart-failure patients without diabetes in a study of 28 000 patients presented at the meeting.

Researchers at University College Los Angeles trawled the patients' records in the Kaiser Permanente care management database covering a 6-year period. Some 45 % of heart-failure patients had diabetes, of whom 38 % were regular insulin users. Their risk of atrial fibrillation was 19 % lower than for people without diabetes or non-insulin-using people with diabetes.

Lead investigator Somjot Brar of Kaiser Permanente called for further research to probe the mechanism behind the apparent protective effect of insulin against atrial fibrillation. 'Some diabetic patients with heart disease may benefit from earlier insulin use instead of oral diabetes medications,' he suggested.

High blood glucose is major risk of death post-MI

Analysis of the death rates of 785 patients with a range of fasting blood glucose levels (<6.1 mmol/l to >7 mmol/l) within 24 hours of a myocardial infarction (MI) show the higher their blood glucose, the greater the mortality risk over the next 2 years.

The investigators found that over a 23-month period, 36.6 % of the high blood glucose group (>7 mmol/l) died compared with 17 % of the group with impaired fasting glucose (6.1–6.9 mmol/l) and just 6.2 % of the group with a glucose level below 6.1 mmol/l.