

HIV viral load linked to structural heart disease

HIV causes structural heart disease according to research presented at EuroEcho-Imaging 2013 by Dr Nieves Montoro from Madrid, Spain. The findings support the introduction of cardiovascular screening in all HIV patients, particularly those with a positive blood viral load.

Dr Montoro said: 'It is well known that patients with HIV have a high incidence of structural heart disease (mainly diastolic dysfunction and pulmonary hypertension) as measured by echocardiography but the reason is not clear.'

Dr Nieves Montoro, Department of Cardiology, La Paz University Hospital, Madrid, Spain



Dr Montoro and colleagues from the internal medicine and cardiology departments of La Paz University Hospital, Madrid, conducted a study to evaluate whether the stage of HIV or the detectable blood viral load were related to the degree of heart disease.

The prospective cohort study included 65 HIV patients (63% male, average age 48 years) who had dyspnoea graded as >II on the New York Heart Association scale. The stage of HIV was determined by measuring the

CD4 count and their opportunistic diseases. The viral blood load was also determined.

Patients had a transthoracic echocardiogram to assess whether they had structural heart disease. Hypertension, diabetes, smoking status, dyslipidaemia and renal failure were assessed as cardiovascular risk factors.

Nearly half of patients (47%) had some form of structural heart disease. Patients with a positive blood viral load had a significantly higher incidence of structural heart disease than those with an undetectable load.

Dr Montoro said: 'We found that half of HIV patients with dyspnoea had echocardiographic evidence of structural heart disease. Our most interesting finding was that patients with a positive blood viral load had a significantly higher incidence of structural heart disease. In

fact, having a detectable blood viral load nearly doubled the prevalence of heart disease, suggesting that HIV itself might be an independent causal agent.'

The amount of structural heart disease was not affected by whether or not the patient had AIDS, or their gender, age or presence of cardiovascular risk factors, although this preliminary result will have to be confirmed in further analysis.

She concluded: 'Detecting cardiac problems in HIV patients sooner using a simple diagnostic tool like echocardiography will enable us to treat them in the very early stage of the heart damage and improve their prognosis. Patients found to have a detectable blood viral load and/or structural heart disease should have closer follow up by a cardiologist and their HIV specialist doctor.'

Compression stockings better than bandages to treat leg ulcers

Ashby et al (2013) have found that leg ulcers take the same time to heal when people wear compression stockings rather than traditional bandages.

In a trial carried out by researchers from the universities of Manchester and York, and funded by the National Institute for Health Research, patients also reported less ulcer recurrence after using the stockings and required fewer nurse visits making the stockings better value for money for the NHS.

However, not everyone liked to wear the stockings with more people changing from this to another treatment compared with those in the bandage group.

Until now multi-layer compression bandages have been the main treatment for venous

leg ulcers and are used by thousands of people, but the current method of treating these wounds costs the NHS millions of pounds per year.

Dr Jo Dumville, Senior Lecturer in Applied Health Research at The University of Manchester's School of Nursing, Midwifery and Social Work, who was the chief investigator on the study, said: 'The finding that compression stockings are a cost effective treatment for venous leg ulcers is important for patients, carers and the NHS.'

Ashby RL, Gabe R, Ali S et al (2013) Clinical and cost-effectiveness of compression hosiery versus compression bandages in treatment of venous leg ulcers (Venous leg Ulcer Study IV, VenUS IV): a randomised controlled trial. *Lancet* doi: 10.1016/S0140-6736(13)62368-5 (Epub ahead of print)

Extra risk to babies born to women with diabetes

Women with diabetes who want to start a family are being urged to monitor their blood glucose levels and take a daily high dose of folic acid.

Researchers from Newcastle University found that the risk of stillbirth or death of the baby during the first year of life was over four times greater in women with diabetes than in those without (Tennant et al, 2013). The risks were similar for women with type 1 and type 2 diabetes and were reduced in women with well-controlled blood glucose levels.

Women with diabetes who had taken folic acid supplements before pregnancy had half the risk of a stillbirth or

death during the first year of life, but only 40% of women took this.

The outcomes of over 400 000 pregnancies delivered in the north of England between 1996 and 2008 were studied. They found that 2.7% of births in women with diabetes resulted in stillbirth, six times the rate for women without diabetes, while 0.7% of babies died during the first year of life, nearly double the rate in women without diabetes.

Tennant PW, Glinianaia SV, Bilous RW, Rankin J, Bell R (2013) Pre-existing diabetes, maternal glycated haemoglobin, and the risks of fetal and infant death: a population-based study. *Diabetologia* Nov 29 (Epub ahead of print)

Inflammation in prostate biopsies may indicate reduced prostate cancer risk

Signs of inflammation in a man's prostate biopsy may indicate that he has a reduced risk of being diagnosed with prostate cancer in a future biopsy, concluded a study by Moreira et al (2013). The investigators call for inflammation to be routinely reported in prostate biopsies.

The association between inflammation and prostate cancer is controversial. Some suggest that anti-inflammatory therapies reduce prostate cancer risk while others have found that prostate inflammation is linked with a lower risk of cancer.

Dr Daniel Moreira and colleagues ana-

lysed information regarding 6238 men aged 50–75 years who had prostate-specific antigen levels between 2.5 and 10 ng/ml and who had a prior negative biopsy. Patients underwent additional biopsies 2 and 4 years later.

Acute inflammation in biopsies taken at the start of the study was most common in younger men who had lower prostate-specific antigen levels and smaller prostates, while chronic inflammation was associated with older age and larger glands.

At the 2-year biopsy, prostate cancer occurred in 900 men (14%). Both acute and chronic inflam-

mation was significantly associated with lower prostate cancer risk (25% reduced risk with acute and 35% reduced risk with chronic inflammation). At the 4-year biopsy, only acute inflammation was associated with a lower prostate cancer risk.

'Given its predictive value, inflammation – and its type and severity – should be routinely reported in prostate biopsies,' said Dr Moreira. '... patients with inflammation at baseline biopsy may be followed differently compared with patients without inflammation at baseline biopsy given their risk of subsequent cancer detection is lower.'

Moreira DM, Nickel JC, Gerber L, Muller RL, Andriole GL, Castro-Santamaria R, Freedland SJ (2013) Baseline prostate inflammation is associated with a reduced risk of prostate cancer in men undergoing repeat prostate biopsy: Results from the REDUCE study. *Cancer* doi: 10.1002/cncr.28349

Dr Daniel Moreira, Chief Resident - Urology, The Arthur Smith Institute for Urology, Long Island Jewish Health System, New Hyde Park, New York



First treatment for ultra-rare autoinflammatory diseases

Anakinra (Kineret), an interleukin-1 inhibitor, is now licensed to treat cryopyrin-associated periodic syndromes (CAPS) in children and adults – an umbrella term for a number of ultra-rare, life-long, severely debilitating autoinflammatory diseases.

New definition of severe asthma

A new guideline, from a joint task force of the European Respiratory Society and the American Thoracic Society, defines severe asthma as 'asthma which requires treatment with high dose inhaled corticosteroids plus a second controller (long-acting β_2 agonist, leukotriene modifier, theophylline or systemic corticosteroids) to prevent it from becoming uncontrolled or which remains uncontrolled despite this therapy.'

Certolizumab pegol available for axial spondyloarthritis

Certolizumab pegol (Cimzia) can now be used to treat adults with severe active axial spondyloarthritis, comprising severe active ankylosing spondylitis and severe active axial spondyloarthritis without radiographic evidence of ankylosing spondylitis.

Exercise beneficial for patients with dementia

Exercise may benefit older people with dementia by improving their cognitive functioning and ability to carry out everyday activities, according to a new Cochrane review (Forbes et al, 2013).

The study updates a Cochrane review carried out in 2008, when only four trials on the effects of exercise in older people with dementia were available. In the updated review, data from eight trials involving 329 people showed that exercise could improve cognitive functioning.

Data from six studies involving 289 people showed that exercise could improve the ability of older people with demen-

tia to carry out daily activities, such as walking short distances or getting up from a chair.

'In our previous review, we were unable to draw any conclusions about the effectiveness of exercise in older people with dementia, due to a shortage of appropriate trials,' said researcher, Dorothy Forbes, Associate Professor of Nursing at the University of Alberta in Edmonton, Alberta.

She continued: 'Following this new review, we are now able to conclude that there is promising evidence for exercise programmes improving cognition and the ability to carry out daily activities. However, we do still need to

be cautious about how we interpret these findings.'

The researchers remain cautious because there were substantial differences among the results of individual trials. They did not find enough evidence to determine whether exercise improved challenging behaviours or depression in older people with dementia. They were unable to come to any conclusions regarding quality of life, or benefits for family caregivers and health systems, because there was not enough evidence.

Forbes D, Thiessen EJ, Blake CM, Forbes SC, Forbes S (2013) Exercise programs for people with dementia. *Cochrane Database Syst Rev* 11: CD006489

Drug testing without the pain

Microneedles on a sticking-plaster-like patch may be the painless and safe way doctors will test for drugs and some infections in the future, thanks to work supported by the Engineering and Physical Sciences Research Council.

Samples of the rough, absorbent patches are being tested in the Queen's University Belfast laboratories of Dr Ryan Donnelly. The forest of tiny polymer needles on the underside of the patch, when pressed into the skin, can absorb the fluid in the surface tissue, taking up the salts, fatty acids and other biological molecules found there at the same time.

'The important thing is that we typically find the same compounds in this interstitial fluid as you would find in the blood,' Dr Donnelly explained. 'But, compared with drawing blood, our patches can get their samples in a minimally invasive way.'

He continued: 'It's far safer than using a conventional needle. These microneedles, once they have been used, become softened, so that there's no danger of dirty needles transferring infection to another patient, or one of the health-care workers.'

The microneedle sampling technique is a development of earlier and ongoing experiments using similar patches to deliver drugs and vaccines painlessly. Dr Donnelly said that the sensation when they are pressed onto the skin is a bit like the roughness of Velcro.

Antivirals for hepatitis C improve kidney and cardiovascular disease in diabetic patients

Researchers from Taiwan have shown that antiviral therapy for hepatitis C virus improves kidney and cardiovascular outcomes for patients with diabetes (Hsu et al, 2013). Incidences of kidney disease, stroke, and heart attack were lower in patients treated with pegylated interferon and ribavirin compared to hepatitis C virus patients not treated with antivirals or diabetic patients not infected with the virus.

'There is growing evidence of an association between diabetes and hepatitis C virus,' explained lead author, Dr Chun-Ying Wu, from Taichung Veterans General Hospital in Taiwan. 'Our study investigated if antiviral therapy used to treat hepatitis C virus infection also improved diabetes outcomes.'

For this population-based study researchers used data

from the Taiwan National Health Insurance Research Database, which has collected health-care details for all residents of the country since 1997.

The team identified 1411 patients with diabetes and hepatitis C virus who were enrolled in the study, and received pegylated interferon plus ribavirin. There were also 1411 individuals in the untreated group and 5644 patients with diabetes and without hepatitis C virus in the uninfected cohort. Participants were followed up from 2003 to 2011.

The 8-year cumulative incidence of end-stage renal disease in the treated, untreated and uninfected groups was 1.1%, 9.3% and 3.3% respectively. Further analysis found stroke incidence was 3.1% for treated patients, 5.3% for untreated

and 6.1 for uninfected subjects. Acute coronary syndrome occurred in 4.1%, 6.6% and 7.4% of treated, untreated and uninfected patients.

'Our findings suggest that hepatitis C virus may cause clinical complications related to diabetes. But these issues are mitigated by hepatitis C virus antiviral therapy, specifically pegylated interferon plus ribavirin, which was found to reduce risks of kidney disease, stroke and cardiovascular diseases in diabetic patients,' concludes Dr Wu.

The authors recommend further examination of the underlying relationship between hepatitis C virus and diabetes.

Hsu YC, Lin JT, Ho HJ et al (2013) Antiviral treatment for hepatitis C virus infection is associated with improved renal and cardiovascular outcomes in diabetic patients. *Hepatology* Oct 12 (Epub ahead of print) doi: 10.1002/hep.26892

Freezing semen doubles chances of fatherhood for men after treatment for Hodgkin lymphoma

Men with Hodgkin lymphoma who want to become fathers after their cancer treatment have greatly increased chances of doing so if they have frozen and stored semen samples beforehand (van der Kaaij et al, 2013).

In the first study to investigate the impact on fatherhood of freezing semen before cancer treatment, researchers questioned 902 male survivors of Hodgkin lymphoma in five European countries. Among the 334 who wanted to have children, the availability of frozen semen doubled their chances

of doing so when compared with men who had not frozen their semen.

Dr Marleen van der Kaaij said: 'Our study shows that cryopreservation of semen before cancer treatment has a large impact... Among survivors wishing to become a father after treatment, availability of cryopreserved semen doubled the odds of successful fatherhood.'

She said the findings emphasize the importance of considering semen cryopreservation. 'Cryopreservation should always be offered to all male patients about to under-

go cancer treatment – even in situations where treatment should start urgently or where first-line treatment is not very toxic to fertility. Clinicians should realise the enormous impact of this cheap and simple procedure.'

van der Kaaij MAE, van Echten-Arends J, Heutte N et al for the European Organisation for Research and Treatment of Cancer Lymphoma Group and the Groupe d'étude des Lymphomes de L'Adulte (2013) Cryopreservation, semen use and the likelihood of fatherhood in male Hodgkin lymphoma survivors: an EORTC-GELA Lymphoma Group cohort study. *Hum Reprod* Dec 17 (Epub ahead of print) doi:10.1093/humrep/det430