Happy Valentine's!

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C-Reactive Protein and Stiffened Arteries

Researchers have recently defined a new risk factor for heart disease by showing that high levels of C-reactive protein in the blood are linked to several measures of stiffening of the arteries.[1] Stiffening of arteries indicate a loss of their elastic properties and predisposes to heart attack, stroke and congestive heart failure.

The study looked at 214 men and women with an average age of 59, who had no history of heart attack or stroke. Results suggest that low-grade inflammation is associated with arterial stiffness. This inflammation may be a potential mechanism through which C-reactive protein is related to heart attack and stroke. Thus testing for C-reactive protein in blood may be an effective diagnostic tool for asymptomatic or presymptomatic heart disease. It is generally agreed that C-reactive protein is associated with increased risk of heart attack and stroke, but it is unclear whether C-reactive protein is a risk factor that affects the function of blood vessels, or if it is simply a marker signifying the presence of disease. This finding could lead to new and improved public health strategies to prevent heart disease, such as developing drugs that suppress inflammation to improve the health of arteries before full-blown heart disease develops.

1. Kullo IJ, Seward JB, Bailey KR et al. C-Reactive protein is related to arterial wave reflection and stiffness in asymptomatic subjects from the community. Am J Hypertension 2005;18:1123-9.

Pig Hearts in Nonhuman Primates

Transplant researchers have made huge progress against immune system rejection by achieving the longest median survival, 96 days, of pig hearts transplanted into nonhuman primates using an experimental method known as "heterotopic" transplantation. This is a significant step toward use of tissues and organs from specially bred animals to ease the worldwide shortage of organs for humans whose survival depends on a heart transplant.[1] The heterotopic approach was tested by grafting pig hearts in the abdomens of seven nonhuman primates. A heterotopic transplant does not require the grafted heart to perform life support. Instead, heterotopic transplants test methods to control and prevent rejection by the recipients' immune systems.

By establishing the 96-day median survival, the group had set a new survival record for this kind of preclinical xenotransplantation (interspecies transplantation). This success sets the stage for the next step: obtaining long-term survival with transplanted animal hearts that are required to support the life of the recipient animal.

The immune barriers to successful xenotransplantation include hyperacute rejection and acute vascular rejection. Both result in destruction of a transplanted organ by the donor's immune system. In the current experiment, the transplant experts were able to control rejection through the use of genetically modified pigs that are specially bred to be organ donors and by using antirejection drugs. As a result, the donor hearts are compatible with the recipients' complement regulatory system, a component of the immune system. The grafted organs survived 15 to 137 days. Only two grafts were lost due to rejection.

1. McGregor CGA, Davies WR, Oi K, Teotia SS. Cardiac xenotransplantation: Recent preclinical progress with 3-month median survival. J Thorac Cardiovasc Surg 2005;130:844-51.

Obese Patients with Coronary Artery Disease can consider Bariatric Surgery

Researchers report in the September 2005 edition of Mayo Clinic Proceedings that bariatric surgery is a safe option for treating obese patients who have coronary artery disease.[1] The resulting weight loss is followed by an improvement in blood pressure, cholesterol, blood sugar and sleep apnea, all factors linked to coronary artery disease.

Roux-en-Y bariatric surgery appears to be an important alternative in treating patients with coronary artery disease and obesity who cannot lose weight with standard approaches. The analysis by the researchers included 52 patients who were identified with coronary artery disease, who underwent bariatric surgery between March 1995 and January 2002. The effects on body weight and other cardiovascular risk factors were analyzed after surgery. After an average follow-up of 2.5 years, the researchers found significant decreases in weight loss, body mass index and blood pressure. Blood analysis showed decreases in key indicators, as well.

The authors caution that diet and increased physical

activity should remain the initial approach in the treatment and long-term management of obesity in patients with coronary artery disease. Bariatric surgery should not be considered first for treatment of obese patients with coronary artery disease because of its high cost and the potential risk of long-term complications in the digestive system.

1. Lopez FJ, Bhatia S, Clavell MC. Safety and Efficacy of Bariatric Surgery in Patients with Coronary Artery Disease. Mayo Clin Proc 2005;80:1157-62.

Statin Treatment within 24 Hours after Heart Attack

In the largest clinical study of its kind, researchers found that early treatment with a statin drug within 24 hours of having a heart attack reduced in-hospital mortality rates by more than 50 percent.[1] The study demonstrates that early statin therapy may be essential for reducing mortality and other complications in heart-attack victims.

Researchers analyzed more than 170,000 patient records from the National Registry of Myocardial Infarction, an American database of patients who were admitted to a hospital due to a heart attack. They found that patients who had received statin therapy before hospitalization and within 24 hours following a heart attack had a 54 percent lower risk of in-hospital mortality compared to patients not on statin therapy. Patients who had not received previous statin therapy, but who were newly started on the medication within 24 hours of hospitalization, had a 58 percent reduction in mortality compared to patients not on statin therapy. The study also showed that early statin use was associated with a lower incidence of cardiac arrest, cardiac shock, cardiac rupture and ventricular fibrillation that all can occur following a heart attack.

1. Fonarow GC, Wright RS, Spencer FA. Effect of Statin use within the first 24 hours of admission for Acute Myocardial Infarction on early morbidity and mortality. Am J Cardiol 2005;96:611-6.

PFO and Stroke

Amidst the controversy, it was recently reported in a prospective study that a patent foramen ovale (PFO) does not reduce the risk of stroke.[1] PFO is a common, benign, congenital condition occurring in one out of four people in which the partition between the upper right and left heart chambers fails to close shortly after birth. The current practice of closing PFOs derives from many observational research studies demonstrating higher incidence of PFO in stroke patients.

A randomly selected population sample of 585 subjects aged 45 or older were enrolled from a stroke prevention trial and transesophageal echocardiography was used to detect PFO in this group. PFO was identified in 140 subjects, or 24.3%. After a median follow-up of 5.1 years, 41 subjects experienced cerebrovascular events, such as death due to cerebrovascular disease, ischemic stroke or transient ischemic attack. After adjustment for age and comorbidity, PFO was not a significant independent predictor of stroke. The researchers also found no difference in risk for stroke by size of PFO.

The investigators emphasize that their findings do not lead to specific clinical recommendations for patients with a PFO who have already suffered a stroke. A larger study is required to test the putative stroke risk associated with atrial septal aneurysm (ASA).

1. Meissner I, Khandheria BK, Heit JA. Patent foramen ovale: innocent or guilty? Evidence from a prospective population-based study. J Am Coll Cardiol 2006;47:440-5.

Announcement

The 3rd Asia Pacific Congress on Craniofacial Surgery and Distraction Osteogenesis will be held from 28th April to 4th May 2007 at the Bandos island resort, Republic of Maldives. Detail of information can be obtained from: Organizing Chairman, 30 KB Dasan Road, Teynampet, Chennai, India, Tel: 91-44-24331696, 91-44-24364136, Fax: 91-44-2432907, Email: smbalaji@eth.net, smbalaji@gmail.com, Website: www.distraction2007.com

Errata

1) In JPMA Volume 56, No. 4, April 2006 issue, page No. 181 as well as on cover page (Contents) under Case Series viz: Surgery for Prolactinomas, authors Ashfaq A. Razzaq, Rashid Jooma, name of an author has erroneously been missed. The list of authors should be corrected to read as Ashfaq A. Razzaq, Rashid Jooma, Shahid Ahmed.

2) In JPMA Volume 56, No. 5, May 2006 issue, Contents page, under Case Reports viz: Extra Pulmonary uptake of Tc-99m-MAA Perfusion lung scan as a result of right to left intra Cardiac Shunt, authors R. Hussain, M. Zaman, S. A. Khan, M. N. Ahmed, the first word "Exta" should be corrected to read as "Extra".