LETTERS TO THE EDITOR

Circadian variation of left ventricular diastolic function in healthy people

Sir,—In their study of healthy people, Voutilainen et al found an nocturnal decrease and a daytime increase in the rate of left ventricular relaxation, which they tentatively attributed to sympathoadrenergical activity.¹ Neurobiological features are suggested by reports that link dysregulation of brainstem and cardiovascular control and cardiovascular reactivity in challenging tasks with dopamine abnormalities lateralised to the right hemisphere. This hypothesis is supported by the importance of dopamine in the control of wakefulness manifested by a reduction of reaction time and gap frequency, optimal response organisation at intermediate dopamine tone in a medial-frontal- striatal activation system, and inhibition of the right hemisphere promoting left-hemisphere dominance associated with cardiac arrhythmia and vasoconstrictions.²

This method is supported by the correlation of the frequency and duration of speech hesitations pauses with a sifold increase in the prevalence and incidence of coronary heart disease and mood, respectively, which reflect properties of neuronal activity and firing, and by the correlation of anxiety with the sifold increase in fatal coronary heart disease, in particular, sudden cardiac death. It is also supported by the reduction in blood pressure associated with longer, less recurrent pauses³ that is predictive of a response to neuropharmacological intervention,⁴ and by the association of pause rate and variability in pause duration with the left and right hemisphere, respectively⁵—hence the need to tailor interventions to asymmetrical brain functions.

ERNEST H FRIEDMAN
Department of Medicine and Psychiatry, Case Western Reserve University, Cleveland, OH 44106-4313, USA


Effect of percutaneous fenestration of the atrial septum on protein-losing enteropathy after the Fontan operation

Sir,—We read with interest the paper by Mertens et al.¹ They reported that in patients who had the Fontan operation, fenestration of the interatrial septum should be considered before proceeding to Fontan take-down or heart transplantation.

We recently treated a boy with hypoplastic left heart syndrome who had had a Norwood operation as a neonate and a hemi-Fontan operation at the age of eleven months. The Fontan (TCPC) operation was completed when he was one year old and he was discharged on 57th postoperative day. The procurement and immediate postoperative period was done well at home for a month, before he returned to hospital with right heart failure. An intra-atrial venous route was created by using 10 mm Gore-tex graft. Right heart failure progressed to protein-losing enteropathy which was resistant to medical treatment and finally we decided to construct a percutaneous fenestration of the interatrial septum made with a Gore-tex graft. A 6 French long sheath was introduced into the intra-atrial venous chamber from internal carotid vein, a Brockenbrough needle was introduced through the long sheath. A Blalock-Park blade catheter and 10 mm balloon catheter were introduced and a 10 mm diameter hole was made. Low cardiac output improved immediately. Transphalangeal echocardiography immediately after the procedure showed a 7 mm diameter hole with significant right-to-left shunt in the Gore-tex baffle. The patient looked well and ascites and pleural effusion reduced. However, the pleural effusion and ascites gradually returned within three weeks. Because he showed clinical signs of severe low cardiac output we decided on a Fontan take-down 41 days after the transcatheter fenestration. The patient died from multi-organ failure three days after the take-down operation. At operation we found that the fenestration in the Gore-tex graft had closed. The Gore-tex graft had thickened up to 2 mm and the hole was completely closed and covered by endocardium.

Mertens et al reported successful treatment of a patient whose native interatrial septum was fenestrated by means of a Brockenbrough needle. Our case suggested that early closure of the fenestrated hole in the Gore-tex baffle is likely.

GENGI SATOMI
SATOSHI YASUKOCHI
FUMIO HATTORI
MSTAKA TAKEUCHI
Department of Cardiology, Nagano Children’s Hospital, 3106 Tosechina, Nagano 399-82 Japan


This letter was shown to the authors, who reply as follows:

Sr. — We read with interest the case described by Satomi et al in which they confirmed the effectiveness of a secondary fenestration as a treatment for protein-losing enteropathy (PLE) after Fontan operation. We share their experience of seeing a significant haemodynamic and clinical improvement in patients immediately after the fenestration was created. However, in our experience with cases we are aware of in other centres where this technique has been applied, Satomi et al observed a strong tendency for the patients to remain very close. The three fenestrations we created in Fontan patients, all became considerably


Coronary Palmaz-Schatz stent implantation in acute myocardial infarction

Sir,—Neumann et al are to be applauded for reporting that coronary stenting is an effective safe adjunct to direct percutaneous transluminal coronary angioplasty (PTCA) for acute myocardial infarction.1 This finding has critical implications, particularly for those patients in whom the presence of residual thrombus does not carry a prohibitive risk of subacute stent thrombosis. Even with the help of coronary ultrasound it may be difficult to distinguish between a primarily thrombogenic milieu and minimal intimal disruption as the major mechanism for coronary thrombus formation. Our findings suggest that a coronary stent should be implanted in any case if needed and, although we cannot provide hard data to support our recommendation, we believe that adjunctive antplatelet therapy should be given. We agree with Lim and Norell that the newly developed platelet glycoprotein IIb/IIIa receptor antagonists deserve serious consideration for this purpose.

FRANZ G. NEUMANN
HANNA WALTER
ALBERT SCHOMIG
1 Medizinische Klinik und Poliklinik rechts der Isar
Immanuelstrasse 22, 81675 Munich, Germany

Significance of perfusion of the infarct related coronary artery for susceptibility to ventricular tachyarrhythmias in patients with previous myocardial infarction

Sir,—Hukuri et al highlighted a very important aspect of current cardiology—that is, risk assessment for sudden death after a myocardial infarction (MI).1 The quest for a single test with a high predictive power has been the holy grail of cardiology for the past 10 years. The risk factors assessed so far, including reduced heart rate variability, baroreceptor sensitivity, signal averaged electrocardiogram (ECG), and echocardiography, are poor predictors when used alone but were additive in combination. Farrell et al found that heart rate variability and signal averaged ECG offered the best balance of sensitivity and specificity.2 Even in this “high risk” group between 70% to 85% of patients will be event-free over several years of follow up, hence the need for a single test with a high predictive power.

The study of Hukuri et al implies that revascularisation of the infarct related artery will reduce ventricular arrhythmias. However, we are not told of the number of previous infarctions in the groups or whether a ventricular aneurysm was present: revascu larisation would only seem justifiable in vulnerable ventricular tachycardias (VT) in the presence of a large myocardial scar (O'Rourke).3 Although the time elapsed after myocardial infarction is comparable in Hukuri et al's two patient groups, the samples are skewed and the use of the median and non-parametric tests might have shown that the groups were not comparable. The emphasis placed on electrophysiological studies is not justified because most studies suggest that this is a poor predictor of sudden death in uncomplicated infarctions.4 Kowey et al in a meta-analysis found no difference in arrhythmic events between those who had inducible VT and those who did not.5 Vatterott et al showed that the best predictor of late potentials on a signal averaged ECG was a closed artery; the next best predictor was a previous MI.6 This reduction in the number of late potentials could also be achieved by antiplatelet therapy.7 However, 15—15 that is, beyond the period of myocardial salvage.8 Hohnloser et al showed that this benefit translates into event-free survival.9 In their study patients underwent revascularisation if they had objective evidence of ischaemia. The most powerful predictors of arrhythmias were a closed artery P < 000002, left ventricular dysfunction P < 012, and early post myocardial infarction syndrome P < 0004. Even when these three risk factors were summated they had a positive predictive power of only 50%. Undertaking coronary angiography and revascularisation has tremendous implications for costs and time. A better cost benefit approach may be to use a less sensitive test but treat those at risk with amiodarone. This is the basis of the eagerly awaited European and Canadian trials.

K K RAY
West Green Club,
Edgbaston,
Birmingham