LETTERS TO THE EDITOR

Scope
Heart welcomes letters commenting on papers published in the journal in the previous six months. Topics not related to papers published earlier in the journal may be introduced as a letter: letters reporting original data may be sent for peer review.

Presentation
Letters should be:

- initially submitted by fax
  +44 171 388 0523 or
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  100536.2733@compuserve.com
  (where practicable). Always follow this up by posting the paper copy to us.
- not more than 600 words and six references in length
- typed in double spacing (fax copies and paper copy only)
- do not exceed three pages in length.
They may contain short tables or a small figure.

Squinting revisited: comparison of haemodynamic responses in normal individuals and heart transplant recipients

Sir—We read with interest the investigation by Hanson et al into the haemodynamic effects of squinting after heart transplantation and were impressed with the elegant demonstration that the effects of a squat on blood pressure and stroke volume are similar in heart transplant recipients and in normal subjects. We were surprised that Hanson et al consider the transplant heart to be denervated at a mean of 16 months after operation. There is clear evidence that at least sympathetic efferent reinnervation of the transplanted human heart occurs. Using injection of tyramine we and others showed sympathetically efferent reinnervation.1,2 We and others have failed to demonstrate parasympathetic reinnervation using autonomic function testing and intracoronary injection of contrast.3 Hanson et al conclude that the differences between normal controls and transplant recipients are due to denervation. While this may be true, there are alternative explanations for their findings. Cardiac transplant recipients are survivors of cardiac failure, and the absence of bradycardia in response to hypertension may be partly explained by persisting reduced central baroreflex sensitivity.4 The response of forearm vascular resistance in the transplant recipients is consistent with this. Thus the absence of bradycardia cannot be taken as evidence of vagal denervation.

The small increase in heart rate of the transplant recipients is also consistent with sympathetic reinnervation in the absence of parasympathetic innervation, and this increase in bradycardia may be stimulated by the effect of squatting, in a similar manner to the effect of sustained handgrip, rather than by a volume reflex. Most cardiac sensory nerves lie in the aorta, and thus a significant number remain in the recipient atrial cuff. It cannot therefore be concluded that any effect of atrial volume change on heart rate is direct. We would also like to point out that this manoeuvre might be an excellent non-invasive measure of sino-aortic baroreflex sensitivity, because of the rapid change observed in systolic blood pressure, akin to that observed after the refractory phase of a Valsalva manoeuvre.7 We suggest that the haemodynamic effects of squinting provide opportunities for the investigation of baroreflexes in other groups of patients, and may also be useful in measuring reinnervation after cardiac transplantation. All investigations of reflexes in cardiac transplant recipients should take the possibility of reinnervation into account.

STEPHEN LORD
JAMES G. GIANNAKOS
Regional Cardiothoracic Centre,
Freeman Hospital,
Newcastle upon Tyne NE7 7DN


Serum lipids four weeks after acute myocardial infarction are a valid basis for lipid lowering intervention in patients receiving thrombolysis

Sir,—Carlsson et al suggested that serum lipids should be measured 4 weeks after acute myocardial infarction.3 We agree, because there were no significant differences between these values and those obtained within 24 hours of onset of symptoms.2 This may not be valid if cardiac anastomotic measurements were laminar taken after and not before thrombolysis, because thrombolysis itself may be associated with a small but significant fall in total cholesterol level.4 Further, the concentration of lipids may not return to basal values until several months later.5 The danger of course is that some patients with spurious low concentrations may be overlooked. Given that the 4S study clearly supports active intervention for secondary prevention,4 each hospital should identify their local practice of targeting patients for intervention. The previously recommended measurement of routine total serum cholesterol for lipid measurement when intravenous access is secured for thrombolysis is easily applied, yields accurate baseline results, and helps to ensure that no patient with hypercholesterolemia is missed.

MARY JANE BENNIE
Department of Medicine,
Gio’s Hospital,
LYDEN
LONDON S E 1 9RT


This letter was shown to the authors, one of whom replies as follows:

Sir,—We are aware of recent reports of parasympathetic reinnervation of the transplanted heart.2 However, we have not discussed this in our paper. Subsequently we deleted that portion to shorten the text and because we did not have data to verify the presence or absence of sympathetic reinnervation in our patients.

It is unlikely that residual impairment of arterial baroreflex sensitivity was a factor in our study. Previous studies from our laboratory showed normal sinoaortic baroreflex control of sympathetic vasomotor tone in heart transplant recipients during orthostatic stress.4 In addition, baroreflex control of the innervated autonomic system was also normal.1 The small increase in heart rate observed in the heart transplant recipients during squatting is difficult to explain. We agree that it is not possible to exclude an autonomic component, perhaps caused by sympathetic reinnervation.

Finally, we fully concur with the suggestion that the heart rate and blood pressure responses to the squating manoeuvre may be used to evaluate baroreflex function in various groups of patients.

PETER HANSON
Cardiology Section,
University of Wisconsin Medical School,
Madison, WI 53797 USA


This letter was shown to the authors, one of whom replies as follows:

Sir,—Dr Bennie refers to a study from Chua et al including 26 myocardial infarction patients. Chua et al reported a 0-4 mmol/l fall in serum cholesterol concentration from a pre-streptokinase treatment concentration of 7-0 mmol/l. They concluded that serum cholesterol concentrations may be underestimated when they are measured after streptokinase treatment. However, the clinical importance of this underestimation of the cholesterol concentration is of less importance than the time lost when patients wait 3-6 months before start-