Heart rate variability in left ventricular hypertrophy

Sin,—Mandawat et al in their paper (Br Heart J 1995;73:139–44) showed that heart rate variability was significantly reduced in patients with ventricular hypertrophy secondary to hypertension or aortic valve disease. In addition they showed that heart rate variability was not affected by β-blocker treatment. However, they made no comment on the effect of other antihypertensive agents such as thiazide diuretics and certain calcium antagonists such as nifedipine which can cause reflex sympathetic activation and hence reduce heart rate variability. Nearly 60% of their patients were taking diuretics. We have recently found in a study of Chinese patients with hypertension that thiazide treatment was associated with reduced heart rate variability assessed by nonspectral and spectral methods, compared with a 4 week control during which potassium replacement treatment alone was given (unpublished). Like Mandawat et al we found a significant reduction in the SD of all NN intervals over 24 (SDNN) and in addition root mean square of difference of successive RR (rMSSD), proportion of adjacent RRs more than 50 ms different (pNN50), with reduced low frequency and high frequency spectral power.

Though left ventricular hypertrophy may well be independently associated with reduced heart rate variability, we were surprised that no comment is made about the possible effect of treatments, other than β-blockers, on heart rate variability in hypertensive subjects. In view of the possibility of an increase in sudden death in hypertensive patients taking thiazide diuretics we would be interested to know whether Mandawat et al have any comparable data on the relation of thiazide treatment to heart rate variability in hypertensive subjects with left ventricular hypertrophy.

JOHN E SANDERSON
Department of Medicine and Clinical Pharmacology, Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, NT Hong Kong

This letter was shown to the authors, one of whom replies on behalf of his co-authors as follows:

Sir,—The observation by Sanderson and Tomlinson of reduced heart rate variability during treatment with a thiazide diuretic raises the interesting possibility of altered cardiac autonomic tone as a potential mechanism for the increased risk of sudden death associated with this treatment. Unfortunately this suggestion is neither supported nor refuted by our study. Most of our subjects were receiving a combination of antihypertensive drugs (mean 2.9). The inclusion of a diuretic with the regimen might also not influence indices of heart rate variability (SD of all NN intervals over 24 h; triangular index; and SD of the mean NN interval for all 5 min segments of a 24 h recording), whether analysed as any diuretic drug (n = 54) or, more specifically, as a thiazide preparation (n = 32 of 82) (heart rate variability corrected for RR interval). Similarly, neither calcium antagonists (n = 30) nor thiazide converting enzyme inhibitors (n = 21) affected heart rate variability in these subjects with left ventricular hypertrophy. During prospective follow up of this cohort over 9.3 years, all cause mortality was reduced by β-blocker treatment but was unaffected by diuretic treatment (unpublished).

DAVID R WALLBRIDGE
Department of Cardiology, Universitätsklinikum Eppen, Hufelandstrasse 55, 45122 Eppen, Germany

There are other systems available, one of which (from New York) has recently gained considerable publicity for the claims made for it and the criticism it has received.10 This system and the Parsonnet system both contain subjective elements, which in the Parsonnet system are not good explanators of outcome but can be used subjectively to increase the score a patient achieves.

The Parsonnet and New York State data sets confine their outcome analysis to death in hospital, but there are more valuable measures of the process undertaken in different centres. Length of ITU stay (included in the Parsonnet system) can be very long, and estimates in hospital cost are also important outcomes that can be estimated before cardiac surgery and are valuable both to the patient and to the centre undertaking the surgery.

The data becoming available from this type of observational study are increasingly valuable in addressing the planning needs of healthcare purchasers worldwide. Conclusions drawn from such observations will be the more robust if casemix adjustment have been recognised as to be as valuable as randomised controlled trials. Acceptance of a proven inferior system would considerably retard the laudable objectives of Professor Treacher and others.

S C N BOLIS
A M S BLACK
A J BRYAN
G E DAY
Directorate of Anaesthesia, Bristol Royal Infirmary, Bristol BS2 8BW


Percutaneous balloon dilatation of the mitral valve in critically ill young patients with intractable heart failure

Sir,—Pate1 and colleagues demonstrated the important role of emergency percutaneous