LETTERS TO THE EDITOR

- The British Heart Journal welcomes letters commenting on papers that it has published within the past six months.
- All letters must be typed with double spacing and signed by all authors.
- No letter should be more than 600 words.
- In general, no letter should contain more than six references (also typed with double spacing).

Prevalence of coronary heart disease

SIR,—In the November 1990 issue of the *British Heart Journal* you published our paper "Prevalence of coronary heart disease in Scotland: Scottish Heart Health Study" (1990;64:295-8) with an editorial "Getting a handle on the prevalence of coronary heart disease" (1990;64:291-2). While we were pleased to see the former in print, and the editorial draws attention to the paper and begins reasonably favourably, comments and statements appearing towards the end have given offence.

The editorial inaccurately states that in the published article we "go beyond . . . important observation to imply that these methods can be relied upon to support the view that coronary heart disease is more prevalent in women than in men". We do no such thing. We contrast the correlations between the different measures of prevalence and mortality within the two sexes, including the Rose angina questionnaire. The latter shows a higher prevalence of mild chest pain in women than in men, not an original observation. We point out that this measure correlates better with mortality from coronary heart disease than do the others, particularly in women, "despite the lower specificity of angina for coronary heart disease in women"—hardly a claim that "these methods can be relied upon". Both cardiologists and epidemiologists know that angina pectoris is not pathognomonic of coronary heart disease, even where coronary heart disease is common, and its specificity (and hence false positives) vary by age and sex.

The editorial questions whether the Rose questionnaire is too lacking in sensitivity and specificity to be applied to "smaller groups" such as "Scottish districts". The smallest district studied had a total population of 35 000 and the largest 435 000 while the mean and median were between 120 and 150 000. We rejected most small districts from the study because of the instability of their mortality rates, and not because of possible statistical problems with surveys. With the exception of the two MONICA districts the number of men and women surveyed was approximately the same in each district—450. The confidence intervals for estimates of frequencies are related to the size of the random sample taken, and are independent of the size of the population sampled. They are similar for Roxburgh, population 35 000 and for South Glasgow, population 325 000.

There are problems too with the disparaging contrast of measures of prevalence with "the 'hard' data for rates of hospital admission for infarction". Were routine statistics on hospital discharges as "hard" as all that, we in Dundee would not have had to commit as much time and effort as we have to their validation, with colleagues in Glasgow, in the Scottish and World Health Organisation MONICA studies, and we would not have been designated as a WHO Quality Control Centre and Collaborating Centre in cardiovascular epidemiology for training and methodology in this area. Equivalent validation work is also being done in the USA in the ARIC study.

The penultimate paragraph appears to be suggesting that we are accusing physicians of systematic misdiagnosis, and then goes on "It is irresponsible for epidemiologists to present incomplete and not fully developed observations and theories because publication of such ideas in a clinical journal implies that they should be incorporated into clinical practice." Even out of context the statement is extraordinary if you analyse it. What are referees and editors responsible for? Where is the epidemiologist, or the clinician, who thinks that epidemiological survey methods are both necessary and sufficient for clinical diagnosis of surgical disease?

There is nothing incomplete or undeveloped about either the theoretical basis of the paper or the observations. The findings were presented to the International Epidemiological Association in Helsinki in 1987 and to the European Congress of Cardiology in Vienna in 1988, to critical acclaim, before submission to the *British Heart Journal* in 1989. The question to which we addressed ourselves (like much of epidemiology) is relevant to clinicians. Variations in coronary heart disease mortality could correlate with morbidity (and therefore the need for clinical services) or with sudden cardiac death alone, largely inaccessible to clinicians. That mortality and morbidity do indeed correlate is of great importance to clinicians in areas of high coronary heart disease mortality whose resources are not commensurate. Clinicians frequently leap across from mortality rates to the need for clinical services. In this case an epidemiological study has provided essential stepping stones.

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We apologise for inadvertent offence caused to the authors by the editorial. If an implication could have been drawn that the authors were attempting to apply epidemiological methods to clinical practice, we know this not to be so.—Ed. British Heart Journal

Cardiac catheterisation with 5 French catheters

SIR,—I should like to comment on the article by O'Sullivan *et al* (*British Heart Journal* 1990;64:211-3). They cited a recent paper by Kohli *et al* in which the quality of coronary angiograms obtained with 5F and 7F catheters was compared in the same group of patients.¹ These workers concluded that "the conventional 7F coronary catheter appears to be superior to the 5F catheter in regard to diagnostic accuracy and image quality because of the higher flow rate possible with the former, allowing greater coronary filling.

Also, while high flow may be possible in 5F catheters, thinner outer walls may compromise torque . . . However, in view of the frequent incidence of non-diagnostic angiograms in patients using 5F catheters, angiographers must be aware that in some patients it may be necessary to up size to larger bore catheters to achieve adequate angiographic results . . ." Brown and MacDonald reviewed 100 cases in which 5F catheters were used and encountered such a major problem of engagement and stability in the right coronary artery with the Judkins curve that they abandoned it after their first six cases and used a modified right coronary Amplatz catheter.² These workers, however, thought the 5F catheters were as easy to manipulate as bigger catheters. They also had difficulty in entering the left ventricle with a pigtail catheter until they changed their technique. With these modifications they thought the 5F catheters were satisfactory and have continued to use them as standard for day case catheterisation.

Molajo *et al* conducted a formal prospective randomised comparison of 5F super-flow and conventional 8F catheters in 34 patients.³ They concluded "that the 8F catheter is more manoeuvrable and thus reduces x-ray dose received by both patient and investigator. Furthermore, the super-flow (5F) catheter neither reduced the time to achieve haemostasis after catheterisation, nor the incidence of bruising. It produced poor quality left ventriculograms".

As recently as June 1990, in a study of early ambulation after coronary arteriography, Kern *et al* used special large lumen 5F catheters to overcome these previously noted problems and obtained a 92% success rate for coronary opacification with a limited range of catheter shapes and seemingly without loss of angiographic quality.⁴ They did not experience diminished torque control with their catheters.

In view of the differences of opinion in published reports we need a proper randomised study to compare the latest 5F catheters with traditional 7F catheters.

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- 1 Kohli RS, Vetrovec GW, Lewis SA, Cole S. Study of the performance of 5F and 7F catheters in coronary angiography: a functional comparison. *Cathet Cardiovasc Diagn* 1989;18:131-5.
- 2 Brown RI, MacDonald AC. Use of 5F catheters for cardiac catheterisation and coronary angiography: a critical review. *Cathet Cardiovasc Diagn* 1987;13:214-7.
- 3 Molajo AO, Ward C, Bray CL, Dobson D. Comparison of the performance of super-flow (5F) and conventional 8F catheters for cardiac catheterisation by femoral route. *Cathet Cardiovasc Diagn* 1987;13:275-6.
- 4 Kern MJ, Cohen M, Talley JD, *et al*. Early ambulation after 5 French diagnostic cardiac catheterisation: results of a multicentre trial. *J Am Coll Cardiol* 1990;15:1475-83.

A controlled trial of community based coronary rehabilitation

SIR,—We read with interest the excellent study of Bethell and Mullee (1990;64:370-5). In a large randomised controlled trial they showed both the safety and the benefits of a coronary rehabilitation programme after infarction which included exercise training three times a week for three months.

As an index of physical fitness or of exercise capacity Bethell and Mullee estimated peak oxygen consumption ($\dot{V}O_{2max}$) using the Astrand-Ryhming nomogram. Though the

$\dot{V}O_{2\max}$ recorded during a progressive maximal exercise test is a reliable index of exercise capacity,¹ there are methodological difficulties with the prediction of $\dot{V}O_{2\max}$ when the Astrand-Ryhming nomogram is used. This nomogram is based upon extrapolation from paired observations of heart rate and either oxygen uptake or (as in the present study) external work rate during a submaximal test. Unfortunately the predicted $\dot{V}O_{2\max}$ may differ widely from the actual $\dot{V}O_{2\max}$, the standard error of the estimate being some 15%.² Furthermore, the original nomogram was based on data from young healthy students of physical education,³ and may not be applicable to older subjects or to those with cardiac disease. Astrand himself and other authors have recently discussed the limitations of the nomogram.⁴ Finally, the effect of physical training in the present study may have been to improve cycling efficiency, which by altering the relation between external work rate and oxygen uptake would lead to artificially high values of predicted $\dot{V}O_{2\max}$.

Rather than extrapolate data to predict $\dot{V}O_{2\max}$, the submaximal data themselves could be used. For example, in the study by Bethell and Mullee, a standardised measurement of heart rate at a given work rate may have been a more appropriate way of assessing exercise capacity. Despite reservations about the Astrand-Ryhming nomogram there is no doubt that Bethell and Mullee have shown valuable improvements in their patients after rehabilitation both in general well-being and in the rate-pressure double product at submaximal work rates.

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- 1 Astrand P-O, Rodahl K. *Textbook of work physiology*. 3rd ed. New York: McGraw-Hill, 1986:299-304.
- 2 Astrand P-O, Rodahl K. *Textbook of work physiology*. 3rd ed. New York: McGraw-Hill, 1986:376.
- 3 Astrand P-O, Ryhming I. A nomogram for calculation of aerobic capacity (physical fitness) from pulse rate during submaximal work. *J Appl Physiol* 1954;7:218-21.
- 4 Legge BJ, Banister EW. The Astrand-Ryhming nomogram revisited. *J Appl Physiol* 1986; 61:1203-9.

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

SIR,—We thank Dr Davies and Dr Greig for their kind comments.

We agree that there are problems with using the Astrand-Ryhming nomogram to measure $\dot{V}O_{2\max}$ (though we were less aware of this in 1979 when the trial was conceived). Nevertheless, changes in the $\dot{V}O_{2\max}$ as predicted from this test do reflect proportional changes in physical fitness.

A small part of the apparent increase in fitness of the treatment group may have come from improved cycling efficiency. Unfortunately a standardised measurement of heart rate at a given work rate would have been subject to the same error.

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BOOK REVIEW

An Era in Cardiovascular Medicine.
Edited by Suzanne B Knoebel and Simon Dack. (Pp xiv + 330; \$59.50.) New York, Amsterdam, and London: Elsevier Science Publishing Company, 1991. ISBN 0-444-01580-9.

During 1989 the American College of Cardiology celebrated the fortieth anniversary of its founding. From a nucleus of cardiologists based in New York it has grown into an influential organisation with members in all parts of the world and international influence largely, but by no means exclusively, exerted through two major activities—its annual scientific sessions and the *Journal of the American College of Cardiology*. The journal and its predecessor must be unique in that they have had a single editor, Simon Dack, since the college first started its own journal in 1958. One of the ways in which the college celebrated its anniversary was to invite Suzanne Knoebel of Indianapolis, as guest editor, to produce a series of scientific papers to appear each month in the journal. These have now been gathered together in a volume, supplemented by original material and two valuable commentaries.

Each chapter can stand on its own and reflects expert views on diseases, techniques of diagnosis and treatment, pathology, molecular biology, and decision making—a wide range of topics of current concern. Each is dealt with in an individual fashion and reflects the approach, experience, and quirks of an author or small team. Arrhythmias exemplify this well. Borys Surawicz illuminates the difficulties in finding medications for ventricular arrhythmias; Wellens and Brugada concisely take this further and explore the whole range of treatments for arrhythmias in general; and Richard Cohen and his group remind us of the mathematical concepts that may underlie the physiological and pathological expressions in these disorders. This links very well with Charles Fisch's chapter on the evolution of the electrocardiogram which itself, of course, has wider implications directly relevant to many other chapters.

One could go on and on listing and analysing contributors and contributions but that would only distract from the important message—that this is a book well worth reading and an essential source of up to date information. Various other groupings easily come to mind. Two important additional chapters do, however, orientate the reader, and the respective authors raise important issues. Eugene Braunwald writes lucidly of the golden age of cardiology encompassed by the era commemorated; and in a concluding chapter Sylvan Weinberg, editor of the college's influential audiotape journal *ACCEL*, expresses the clinician's point of view and compares current issues with those that dominated the scene in 1949, reminding us of the emphasis in that year as seen in the pages of the only two English language cardiological journals then published, the *American Heart Journal* and the *British Heart Journal*. The comments by these distinguished educators put in perspective the topical and authoritative contributions that

cover the spectrum of cardiology so helpfully. This expanded version of the symposium is a great credit to the editorial selection and presentation undertaken by Dr Knoebel and Dr Dack.

DENNIS M KRIKLER

The title reviewed here is available from the BMJ Bookshop, PO Box 295, London WC1H 9TE. Prices include postage in the UK and for members of the British Forces Overseas, but overseas customers should add £2 per item for postage and packing. Payment can be made by cheque in sterling drawn on a UK bank, or by credit card (MasterCard, VISA, or American Express) stating card number, expiry date, and your full name.

BRITISH CARDIAC SOCIETY NEWSLETTER

The annual meeting of the society in Glasgow had a larger attendance than for any we have had previously. The total (excluding exhibitors) was 1266. Of these, 766 were physicians or surgeons, 400 were nurses, and 150 were technicians. The venue proved to be popular. The programme met with general approval; the facilities within the conference centre were generally excellent. The proximity of the exhibition kept people together, and saved valuable time during breaks in the programme; and the convenience of an adjoining hotel was an advantage that will be missed when we return to Wembley. The success of the meeting is a tribute to Ian Hutton and his colleagues, who took much of the burden of preparation, and ensured that we enjoyed something of the ambience of the "city of culture".

When we consider we have had the perfect meeting, we can relax our efforts. That has not happened, nor of course will it. Even Glasgow had its blemishes. The numbers who will be attracted by particular topics cannot always be predicted; thus some sessions required a larger hall than was allocated and were overcrowded. Signposting for the break out meetings within the hotel was judged inadequate, especially on the first day when the layout was unfamiliar. The standard of slides was not uniformly good. Colour seems sometimes to be a substitute for careful composition rather than an aid to clarity. Colour used judiciously can enhance a presentation, but a few speakers do themselves less than justice with psychedelic displays of overcrowded data. Whatever happened to the old guideline of not more than seven words to a line or five lines to a slide? Posters remain a problem. They form an integral part of the scientific meeting and many subjects lend themselves better to this form of exposure than to spoken presentations. In Glasgow, the posters may have been set too closely together. Some authors seemed diffident about discussing their content, or perhaps those of us who were viewing the posters did too little to initiate debate.