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).*

Mitral valve hypoplasia in children with isolated coarctation of the aorta

SIR,—Venugopalan *et al* concluded that, compared with controls, patients with coarctation of the aorta have relative hypoplasia of the mitral valve which is likely to be more pronounced in patients with mitral diastolic murmurs.[1] Unfortunately, they do not mention our previous study in which we found that patients with mitral diastolic rumble and coarctation of the aorta have minor abnormalities of the mitral valve or minimal mitral stenosis that significantly increase the rapid ventricular filling and pressure half times and decrease the mitral valve area.

LUIS E ALDAY
Division of Cardiology, Hospital de Niños, Bv. Chacabuco 1016, 5000 Cordoba, Argentina

1 Venugopalan P, Bu'Lock FA, Joffe HS. Mitral valve hypoplasia in children with isolated coarctation of the aorta. *Br Heart J* 1994; 71:358–62.
2 Bruno E, Juaneda E, Moreyra E, Alday LE. The mitral mid-diastolic rumble in isolated coarctation of the aorta. Cross-sectional and Doppler echocardiographic study. *J Cardiovasc Technol* 1990;9:143–6.

Please Sir! GPs treat cardiac failure too!

SIR,—General practitioners did not feature in your supplement on diuretics in heart failure,[1] yet mild to moderate cardiac failure is essentially a general practice diagnosis. In a recent postal survey[2] of 1897 members of the Irish College of General Practitioners most GPs reported that they treat most patients with heart failure without hospital referral.[2] Only 14% would refer more than 50% of patients, and those who were qualified longer were more likely ($P<0.05$) to refer to hospital. Cardiac failure is seen as a condition of the older age group, with most cases presenting between 65 and 75 (66%). Most patients are in New York Heart Association grade 1 (50%) or grade 2 (44%) when they attend initially.

Almost all GPs (89%) attempt first line therapy in general practice and only 51% would refer without at least two changes of therapy. GPs believe that drug treatment usually (in 90% of cases) controls symptoms and such control is the priority for 70% of practitioners. GPs are less sure that drug treatment prolongs life (65%) and prolonging life is the priority for only 18%. Those more recently qualified ($P<0.01$) and those who are vocationally trained ($P<0.01$) were less likely to believe that drug treatment prolongs life. Differences in beliefs about the value of drug therapy are reflected in treatment aims. More of those who were qualified longer were more likely to cite prolonging life as their main priority ($P<0.001$) and fewer of those who were vocationally trained ($P<0.05$). In addition, those who were vocationally trained were less likely to initiate treatment with the aim of delaying progression of the disease ($P<0.05$).

In contrast, control of symptoms was the priority of those most recently qualified ($P<0.001$) and those vocationally trained ($P<0.01$): 80% of those who qualified after 1980 compared with 69·8% of those who qualified from 1970 to 1979 and 58·2% of those who qualified before 1970 cited symptomatic control as their main treatment priority. Of those vocationally trained 76% gave symptomatic control as their main priority compared with 64% of those who were not.

Side effects are a major problem and 73% reported that more than 10% of patients suffer from side effects. Not surprisingly this is reflected in compliance: 70% of practitioners believed that more than 10% of patients have poor compliance.

Clearly GPs have considerable experience and expertise in the management of mild to moderate cardiac failure and this experience is quite different from that of hospital specialists. There is a need to share community and hospital experience and develop guideline and protocols that recognise this continuity of care.

DOMHNALL MACAULEY
Hillhead Family Practice, 33 Stewartstown Road, Belfast BT11 9F2

1 Taylor SH, ed. Diuretics in heart failure. *Br Heart J* 1994;72, (suppl Dec).
2 MacAuley DC, ed. Cardiac failure *Forum* (Journal of Irish College of General Practitioners) 1994:3 (suppl).

Peripheral vascular disease: consequence for survival and association with risk factors in the Speedwell prospective heart disease study

SIR,—We were interested in the findings of Bainton *et al* that a raised white cell count predicts the development of intermittent claudication.[1] An epidemiological study also found a correlation between a raised white cell count and a significant risk of myocardial infarction and stroke.[2]

It is generally accepted that massive tissue ischaemia followed by reperfusion has an adverse effect on the systemic vascular endothelium, particularly the pulmonary microcirculation.[3] Evidence suggests an important role for oxygen-derived free radicals, activated neutrophils, and endothelial mediators in this injury, resulting in a systemic increase in vascular permeability. This may be quantified by a local increase in renal permeability, which is reflected by a change in urinary protein excretion—microalbuminuria.[4]

We have suggested that patients with claudication undergo a series of similar less severe ischaemia-reperfusion injuries with activation of the above mechanisms. This may have an adverse effect on cardiovascular morbidity and mortality in these patients. In support of this hypothesis we found an increase in neutrophil activation, lipid peroxidation, and a rise in urinary albumin excretion after exercise in patients with claudication.[5,6]

Recently we found a decrease in neutrophil deformability, suggestive of activation, and a highly significant rise ($P < 0.001$) in thromboxane B_2 concentrations after exercise in patients with claudication. No change was found in the control group and concentrations of thromboxane B_2 at rest were significantly lower in the controls. The results support the concept that intermittent claudication results in a series of repeated ischaemia-reperfusion injuries leading to neutrophil activation and increase in systemic vascular permeability. These events seem to play a part in atherogenesis, and we suggest that this may contribute to the excess cardiovascular mortality found in these patients.

HARMEET KHAIRA
Department of Surgery, Queen Elizabeth Hospital, Birmingham
PAUL TISI
CLIFFORD SHEARMAN
Department of Vascular Surgery, Royal South Hants Hospital, Southampton

1 Bainton D, Sweetnam P, Baker I, Elwood P. Peripheral vascular disease: consequence for survival and assosciation with risk factors in the Speedwell prospective heart study. *Br Heart J* 1994;72:128–32.
2 Ernst E, Hammerschmidt DE, Bagge U *et al.* Leukocytes and the risk of ischemic diseases. *JAMA* 1987;257:2318–24.
3 Welbourn CRB, Goldman G, Paterson IS *et al.* Pathophysiology of ischaemia reperfusion injury: central role of the neutrophil. *Br J Surg* 1991;78:651–5.
4 Gosling P, Shearman CP. Increased levels of urinary proteins: markers of vascular permeability? *Ann Clin Biochem* 1988;25 Suppl:150s–1s.
5 Hickey NC, Gosling P, Baar S, Shearman CP, Simms MH. Effect of surgery on the systemic inflammatory response to intermittent claudication. *Br J Surg* 1990;77:1121–4.
6 Shearman CP, Gosling P, Gwynn BR, Simms MH. Systemic effects associated with intermittent claudication. A model to study biochemical aspects of vascular disease? *Eur J Vasc Surg* 1988;2:401–4.

Direct access exercise electrocardiography: a new service that improves the management of suspected ischaemic heart disease in the community.

SIR,—The paper by McClements *et al* on direct access exercise testing (*Br Heart J* 1994; 71:531–5) is surely incorrectly titled. A new service that *alters* the management of suspected ischaemic heart disease would be appropriate but to suggest that it *improves* the management – I think not. As a result of the open access facility more than half of the patients with chest pain thought to be due to coronary artery disease who had an abnormal exercise test were not referred for specialist examination and advice, thereby being deprived of access to two of the three available treatment options. Indeed apparently more than 10% of these patients received no treatment at all.

In the current environment where quantity rather than quality of management seems to be the important factor perhaps I

am the one out of step, but I know how I would prefer my own chest pain to be managed.

CLIVE LAYTON
Cardiac Department,
The London Chest Hospital,
Bonner Road
London E2 9JX

SIR,—We were interested to read of the experience of McClements *et al* of a direct access exercise electrocardiography service for general practitioners.[1] We have developed a fast track clinic for GP patients with recent onset (<48 h) chest pain or palpitation. GPs are asked to book the patients into the clinic by telephone and all patients are seen within 24 hours. A 12 lead electrocardiogram is performed and the patient is reviewed by a cardiology registrar who decides upon appropriate management within previously defined guidelines. Those patients requiring further follow up are seen in a dedicated clinic by a consultant cardiologist after appropriate tests. Of the first 100 patients presenting to this fast track clinic, over a four month period, 60 had recent onset chest pain, 37 palpitation, and three murmurs or dyspnoea. This indicates that the referral pattern was appropriate. McClements *et al* also found that GP referrals largely followed their predefined guidelines. Thirty five patients were sent for exercise electrocardiography and 16 (47%) had positive tests, compared with only 34 of 192 (18%) in their unscreened population (χ^2=13·5; P<0·001). In an audit of our exercise testing service, which is available to all hospital physicians, 44% of the tests were positive (235 of 533 tests). Thus, far more patients had negative tests when they were not screened by a hospital doctor. Overall 41% of the patients presenting to the fast track clinic with chest pain were found to have a final diagnosis of ischaemic heart disease. This did not differ significantly from an incidence of 33% in 100 patients seen in the routine cardiology outpatient service during the same period. The capital costs of setting up the service were low because it was based on an existing outpatient electrocardiogram service for GPs.

Our experience shows that offering a rapid access cardiology outpatient service for GP patients with symptoms of recent onset identifies a population with a high incidence of ischaemic heart disease. We were also able to initiate treatment and advise GPs directly, without waiting for a further referral to the cardiology outpatient clinic. McClements *et al* provide no data to support their statement that an open access exercise electrocardiography service reduces outpatient referrals. We believe that restricting access to expensive cardiological investigations, such as exercise testing, by using a screening physician is more cost effective than open access.

L O'TOOLE
KS CHANNER
Department of Cardiology,
Royal Hallamshire Hospital,
Sheffield S10 2JF

1 McClements BM, Campbell NPS, Cochrane D, Stockman S. Direct access exercise electrocardiography: a new service that improves the management of suspected ischaemic heart disease in the community. *Br Heart J* 1994;71:531–5.

These letters were shown to the authors, who reply as follows.

SIR,—The aim of our study was to allow general practitioners direct access to exercise stress testing for patients with suspected ischaemic heart disease (IHD). We believe that this service avoided inappropriate specialist consultations and that patients received a prompt and efficient diagnostic service.

In response to Dr Layton: the incidence of IHD in this population was relatively low. Most had non–cardiac chest pain and 82% had no inducible myocardial ischaemia during exercise testing. Of the minority with inducible ischaemia, all those with strongly positive tests were appropriately referred for cardiac catheterisation. Decisions regarding management of the remainder were made by GPs on the basis of symptom status and level of exercise achieved on exercise testing. The four patients who did not require regular antianginal treatment had very infrequent angina or no recurrence of symptoms. These management decisions seemed to us to be appropriate and in line with practice in our outpatient clinic. There is no question of depriving patients of any treatment option. Specialist consultation is unlikely to have altered the management of any of these patients at this stage and was available at any time if circumstances changed.

We commend Dr O'Toole and Dr Channer on the fast track service they describe. However, this service is aimed at patients with recent onset (<48h) chest pain–that is, a group with more acute disease. Our criteria excluded patients with pain thought likely to be unstable angina. Though there will be some overlap there is a difference in emphasis: their patients had usually been referred to the emergency department, whereas ours had been referred to the cardiology clinic. It is not surprising that the incidence of positive tests in the fast track system was higher, given that the populations are very different, particularly because a registrar selected patients for exercise testing, apparently on the basis of a high pre-test likelihood of IHD.

The diagnostic value, and therefore cost-effectiveness, of an exercise test is greatest when the pre-test likelihood of IHD is moderate. In our study the pre-test likelihood of IHD was assessed by the GP as low or moderate in 74% and the positive exercise test rate was relatively low at 18%. GPs see many patients with chest pain and because it is important to exclude IHD in this group the value of a negative test should not be underestimated. We believe our service is cost effective because it seems to avert many unnecessary hospital referrals. As there are at least four hospitals to which these patients could have been referred, it was not possible to assess directly the impact of the service on cardiology outpatient referral patterns. Therefore our evidence for this is the stated intentions of GPs (97% would have referred their patients to a hospital cardiology clinic had the service not been available compared with 10% after the exercise test). On the other hand, the true costs of the fast track system do not appear to have been acknowledged. The cost of a clinic staffed by a registrar is not insignificant. Some patients were also seen at a consultant's clinic and many patients with chest pain were still referred for exercise testing. There are insufficient data to claim that one approach is more cost effective than another: both are attempts to improve the management of different groups of patients.

Contrary to what Dr. Layton suggests, we feel that the title of our paper is correct. Based on the results of our study we believe that a direct access exercise electrocardiography service enhances the quality of care for this group of patients and facilitates more efficient use of the limited specialist cardiology resources available in the United Kingdom.

BRIAN McCLEMENTS
Cardiac Ultrasound Laboratory,
Massachusetts General Hospital,
Boston, MA 02114–2698
NORMAN P S CAMPBELL
Royal Victoria Hospital,
Grosvenor Road,
Belfast BT12 6BA

NOTICES

The 1995 Annual Meeting of the **British Cardiac Society** will take place at the Conference Centre, Harrogate, North Yorkshire from 23 to 25 May.

The **Seventh European Symposium on Cardiac Pacing** will be held in Istanbul, Turkey on 4–7 June, 1995. The congress will be the official meeting of the two working groups of the European Society of Cardiology (namely the Working Groups on Cardiac Pacing and Arrhythmia).