Cardiological services for the elderly

Most of the common cardiovascular disorders increase in frequency with advancing age, including disabling and life threatening conditions such as heart valve disease (particularly aortic stenosis), arrhythmias (particularly heart block and atrial fibrillation) and coronary artery disease. Angina affects up to 10% of the British population over 70 years [1]; despite this, elderly patients constitute only 20% of new referrals to cardiology outpatient departments, and only 5% of patients selected for coronary angiography in the UK [2]. There are two main reasons for this reluctance to refer elderly patients for cardiological investigations and treatment. The first is the general shortage of cardiac resources, such that the elderly often lose out to younger patients. This will only be overcome by increasing resources—a Royal College of Physicians report published in 1991 estimated an annual requirement for 7,000 coronary bypass operations, 1,000 valve operations and 3,000 angioplasties in patients over 70 years of age in England and Wales [3]. The second reason is the erroneous impression that the elderly have little to gain from active investigation and treatment.

Common cardiac conditions, such as acute myocardial infarction and heart failure, frequently present with atypical symptoms in elderly patients and specialised investigations are often required to establish the true diagnosis [4,5]. The slightly increased risk of cardiac catheterisation (0.2% mortality) [2,6] is justified by the effective relief of intractable symptoms that can often be obtained from percutaneous or surgical revascularisation. The risk is increased largely because referral is delayed in elderly patients so that they have worse coronary disease and left ventricular (LV) function, more serious non-cardiac disease, and a higher proportion of emergency procedures than younger patients. Nevertheless, coronary angioplasty is successful in 90% of patients over 70 years of age, with a total serious complications rate, which includes death, myocardial infarction (MI) or emergency surgery, of less than 5% [7,8]. Coronary bypass surgery also carries greater risks in the elderly (perioperative mortality approximately 5% for elective cases compared to 1-2% in younger patients) [6,9,10] but the symptomatic results are as good as in younger patients, and for many the relatively small excess risk is justified. Valve replacement is more hazardous with an overall perioperative mortality of around 10% in patients over 70 years [11]. The risk is higher in mitral than aortic valve replacement and is also increased when there is co-existing coronary artery disease. Risk stratification can, however, identify a subset of elderly patients, such as those with aortic stenosis, good LV function and no significant coronary disease, who have an operative mortality of only 1%. Once past the perioperative period, the one and five year survival rates following aortic or mitral valve replacement in the elderly are 80% and 74% respectively [12]. Thus excellent results can be achieved by coronary angioplasty, bypass surgery or valve replacement in carefully selected elderly patients, but it is important not to forget the potential for disaster following high risk procedures.

The elderly can also derive considerable benefit from prompt and appropriate medical treatment. Perhaps the best example is the management of acute myocardial infarction which carries a greatly increased risk in the elderly compared to younger patients [13,14], though the mortality can be substantially reduced by early thrombolysis and admission to a coronary care unit (CCU) [14,15]. Because they are at higher risk, elderly patients have more to gain from treatment—in the ISIS-2 trial a combination of streptokinase and aspirin saved 25 lives for every 1,000 patients treated aged below 60, compared with 80 lives for every 1,000 patients over 70 [16]. Similarly, post infarction administration of a beta blocker can reduce reinfarction and late sudden death in high risk groups including the elderly [17]. Despite these proven benefits, the elderly are still frequently denied admission to CCUs and thrombolysis [18].

In the light of this evidence the Royal College of Physicians published a report in 1991 entitled *Cardiological intervention in elderly patients* [3]; its main recommendations were:

1. Non-invasive diagnostic facilities, cardiac pacing, coronary care and thrombolytic therapy should be available to all age groups.
2. Cardiac catheterisation is indicated in elderly patients with angina or valve disease who are otherwise fit for surgery.
3. Provision is required for the resulting increase in demand for angioplasty, coronary bypass and valve surgery (see paragraph 1 for details).

Has this report had the intended impact on clinical practice?

Two studies published in this issue of the *Journal* describe current practices in the management of cardiac disease in the elderly three years after the publication of this report. Two complementary techniques were used in both studies—first, attitudes to the care of elderly patients with heart disease were assessed by means of postal questionnaires sent to general practitioners in one study and consultant geriatricians

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and cardiologists in the other. Second, current referral practices were determined by analysis of the use of non-invasive and invasive investigations and interventions in elderly patients.

Both studies show that referral rates have been steadily increasing, 80% of cardiologists reporting that they are seeing more elderly patients than before. But most of the increase in referral was for assessment of heart failure, valve disease and bradyarrhythmia, while GPs still prefer to treat the much more frequent problem of coronary disease with medical therapy only. The increase in referral rates was mirrored by an increase in the use of non-invasive investigations for patients over 70 in the Plymouth Health District. Echocardiography (ECG) was the most fruitful investigation in this age group—of 492 patients referred, 57% had impaired LV function and 22% had significant aortic stenosis. The pick-up rate for symptomatic arrhythmias by 24-hour ambulatory ECG monitoring was much lower, only 17%, and although 28 out of 66 exercise tolerance tests showed ischaemic ECG changes, only six of these patients were ultimately referred for bypass surgery. Although some hospitals in the Trent region still operate age restricted CCU and thrombolysis policies, Plymouth does not and 44% of patients admitted there with acute MI were over 70 years. These patients had an in-hospital mortality of 34%. The Sheffield based study investigated recent trends in pacing, cardiac catheterisation and cardiac surgery in the elderly in three cardiothoracic referral centres. There has been an increase in all procedures in the elderly but patients over 75 still account for only 3% of angioplasties, 2.7% of bypass operations and 9.5% of valve procedures.

Was the 1991 Royal College of Physicians report responsible for stimulating the small but definite increase in investigation and treatment of cardiac disease in the elderly? This is difficult to assess but undoubtedly other factors have also played a part because referral rates and interventions in the elderly were already increasing before the report appeared, and the rate of increase has not changed since the publication of the report in 1991 [2,19]. Perhaps the last word comes from the questionnaire sent out in Sheffield—only one half of the cardiologists and geriatricians who responded were aware of the Royal College of Physicians report, one third had read it, and none thought it had influenced their practice! This is in keeping with the findings of Grimshaw and Russell in their systematic evaluation of the effects of introducing clinical guidelines, which showed that national guidelines have much less direct impact on medical practice than local, internally developed ones [20]. However, it must be hoped that the publication of these two papers will remind physicians that many elderly patients have much to gain, particularly by improved quality of life, from active investigation and treatment of cardiac disease, and that substantial increases in resources are needed before they will get a fair crack of the whip.

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