In Blann et al's study only the subgroup of subjects with myocardial infarction and hypertension or raised cholesterol (and not the subgroup without these risk factors) had higher concentrations of vWFAG than controls. In Table 4 in our paper (British Heart Journal 1991;66:351–5) the results of multivariate Cox regression analysis demonstrate that the association between high concentrations of vWFAG and reinfarction or cardiovascular death was independent of these and other risk factors.

JAN-HAKAN JANSSON
Department of Internal Medicine, Skellefteå Hospital, S-95186 Skellefteå, Sweden

angiography. Thus it is impossible to estimate a possible lower limit for the true incidence of abnormal scans in such patients.

The assertion that the scan abnormalities detected represent microvascular distur-

Dennis Halse, Wales. This also shows that the reduction of reference standards has lead to a lower incidence of abnormal scans. The study by Halse et al also shows that the subset of patients with high concentrations of vWFAG and reinfarction or cardiovascular death was independent of these and other risk factors.

Thallium scans in syndrome X

Sir—In their interesting retrospective study, Tweddell et al (British Heart Journal 1992;68:49–50) identified 100 patients with typical angina and normal coronary arteriograms (syndrome X). Thallium defects were found in 98% of the patients leading the authors to conclude that microvascular angina is commoner than generally appreciated. However, this conclusion must be treated with some scepticism because of work-up bias which commonly undermines claims for the diagnostic value of non-invasive testing in studies of this type. Thus we are told that it is the practice at the Royal Infirmary, Glasgow to use the thallium scan as a screening test to select patients for angiography. Preferential selection of patients on this basis itself ensures a high prevalence of abnormal scintigrams in the 10% of their population with normal coronary arteries. Only if selection for angiography were independent of the results of thallium imaging could firm conclusions be drawn about the role of microvascular angiography in syndrome X.

ADAM D TIMMIS
National Heart and Lung Hospital (Victoria Park), Bonner Road, London E2 9JX


Sir—Connoisseurs of the circular argument will find few better examples than that recently presented by Tweddell et al. They contend that the finding of a high incidence (98%) of abnormal thallium scans in a retrospective study of patients with angina and normal coronary arteriograms indicates of a high prevalence of microvascular disease. Unfortunately this contention is completely invalidated by their own admission. Furthermore, abnormal thallium scans were used for the selection of such patients for angiography in the first place. This being the case, it is surprising that the incidence of abnormal scans was not 100%.

The authors fail to document the number of patients seen with angina during the period under study who had normal thallium scans and as a consequence did not proceed to thallium studies. Thus it is impossible to estimate a possible lower limit for the true incidence of abnormal scans in such patients.

The assertion that the scan abnormalities detected represent microvascular disturbances is entirely speculative. Very few such patients have true myocardial ischaemia (reflected by lactate production on stress testing). Indeed, the inability to demonstrate a correlation between severity of the scan defect and limitation of exercise capacity seems to indicate their lack of functional significance. On the contrary, as only 30% of the study patients had abnormal exercise tests the primary conclusion from this study must be the poor positive predictive accuracy and specificity of abnormal thallium scans for detecting significant coronary artery disease where the exercise electrocardiogram is normal.

CLIVE S LAWSON
Cardiovascular Research, Royal Infirmary, St Thomas Hospital, London SE1 1EH


These letters were shown to the author, who replies as follows: Sir—A more thorough reading of our paper would have shown that we were of course careful to emphasise that our unit's general practice of using positive thallium tests as a pre-catheterisation screening test inevitably determines that a very high proportion of our patients have positive thallium tests. Our study was not, did not intend to be, and could not have been an epidemiological study. It set out to provide a description of thallium test findings in an otherwise unselected group of patients presenting with typical effort angina, with and entirely normal coronary arteriograms. These patients with normal arteriograms represented about 10% of all those undergoing coronary arteriographic investigation in our unit, a proportion that is not greatly different from general experience where thallium is not used as a pre-screening test. Our finding that 98% of these patients showed abnormal thallium tests thus at least suggests—we claimed no more—that abnormal thallium tests are not uncommon in such patients and indeed might be found, by extrapolation, in some 5% of patients undergoing diagnostic coronary arteriography in other units unless our population is very peculiar. We were of course also careful to emphasise that an abnormal thallium does not necessarily imply reduced perfusion, or "microvascular angina" (one current word for the cardiologist's syndrome X in our continuing state of uncertainty) since it might also reflect abnormal potassium handling by the myocyte. Exercise tests and lactate production are recognised as having limited sensitivity in diagnosing ischaemia. Gold standards are hard to find in this area.

ANN C TWEDDELL
University Department of Medical Cardiology, Royal Infirmary, 10 Alexandra Parade, Glasgow G31 2ER

Atiial fibrillation, J Rawles. (Pp243;[49.50]

Atrial fibrillation is the commonest of all chronic sustained arrhythmias and until recently there was little to add to the early descriptions. The past decade has seen significant advances, with confirmation of the circus movement hypothesis. The other major development is in the understanding of how the atrioventricular node influences the ventricular response. Simple conduction of a proportion of the impulses from the fibrillating atria has been disputed by others in the past, and Rawles now adds his voice (and very usefully) his mathematical model to explain the behaviour of the atrioventricular node as an oscillator. Is this all too obvious and too basic for the practising clinician? By no means: this slim volume deserves the attention of all cardiologists.

This is the work of one author. Some of the mathematical aspects are difficult, but they are worth studying and you will see that the explanations are quite clear. From them, phenomena such as concealed conduction and therapeutic regularisation of the ventricular rate are now easier to understand in logical terms.

The author's own interest in the changes in the cardiac output that occur during atrial fibrillation is explained, on the basis of the use of non-invasive measurements and with the promise of further and better understanding with the continued use of Doppler techniques. The causes, ways of presentation, and treatment are all discussed, but more in terms of understanding than as a "cook book" list. What is particularly helpful is the bibliography. This is not just an accumulation of references, but a carefully selected list, and is of great value to anyone who reads the book.

While the clinical section is comprehensive it is rather tightly written. Why do coronary artery disease and myocardial infarction each have a subsection, yet lone atrial fibrillation and the sick sinus syndrome do not? The omission of any mention of the syndrome of alternating bradycardia and tachycardia is a surprise in a book written in Aberdeen. The role of chronic bronchitis, previously commonly believed to be important, also deserves more attention and a section of its own.

The discussion on drug actions is relevant with understandable considerable emphasis on what is known about the way in which digitalis works. Others will have to do more work on the mode of action of calcium antagonists before the author can give them corresponding depth of treatment, but what he says about each group of agents is ample and appropriate. He mentions also the use of techniques of ablation and devices of ablative therapy, the need for prevention of embolic stroke and the ways in which this can be done.

John Rawles has provided us with an extremely useful addition to the literature and his book on atrial fibrillation is one that
would strongly recommend. I think it should be in all medical libraries as well as in all departmental libraries in cardiology units. Quite apart from this, it is useful reading for all cardiologists, and certainly required reading for any who espouse an interest in cardiac electrophysiology.

DENNIS KRILIKER


This short book, one of the Cardiovascular Clinic Series, brings another contribution to the burgeoning field of old age cardiology. Elderly patients with heart disease present special diagnostic and treatment challenges, because other vital organs may exhibit changes associated with ageing, wear and tear, and often disease. Some diseases occur only in old age: senile cardiac amyloidosis and conduction system degeneration to name but two. Lifestyle, socioeconomic and quality of life considerations often play a more important part in therapeutic decision-making in older people than they do in the young, and cardiologists need to have a grasp of some of the more important principles of geriatric medicine if they are to treat their elderly patients optimally.

Geriatric Cardiology is principally written by American cardiologists with some contributions by those from other disciplines. It is divided into four sections: epidemiology and clinical, therapy, and socioeconomic considerations.

The first section has a good short review of demography in the United States and a summary of the risk factors for cardiovascular disease by Dr Kannel in his usual inimitable style. The description of the ageing process in the heart is short but reasonably comprehensive and well-illustrated by line drawings, graphs, and tables in the second section.

In the third section the chapter on hypertension addresses the difficult problems that are encountered in evaluating the need for treatment in elderly people, but does not give any clear guidelines about treatment regimens. It seems to underestimate the importance of angiotensin converting enzymes in relation to calcium channel and beta blockers in this age group.

The chapter on myocardial infarction emphasises the significance of this condition when it occurs without pain and quotes extensively from Pathy’s work. However, those of us who deal extensively with acute geriatric emergencies are usually rather less impressed by the apparent absence of chest pain as one of the main presenting symptoms of acute myocardial infarction. There is a lack of balanced reports on the presentation of this condition in elderly people. It may well remain so while developed countries adopt such widely differing and disintegrated ways of managing acute medical emergencies in elderly people.

Valvar heart disease, cardiomyopathies, pericarditis and heart failure are well documented and there are excellent reviews on these subjects. The chapter on arrhythmias is reasonably comprehensive, although the effectiveness of permanent cardioversion in atrial fibrillation, by chemical or electrical means, is overemphasised. There is no discussion of the potential dangers of atrial fibrillation as far as thromboembolism is concerned. A more comprehensive discussion on the indications for, and type of, permanent pacemakers would have been welcome.

The chapters on drug therapy, intervention therapy for coronary heart disease, and cardiac surgery are well balanced and comprehensive. They reflect the increasingly aggressive line that physicians should adopt towards coronary and valvar diseases in elderly patients when they uncomplicated by other significant ageing processes or disease. The chapter on rehabilitation and lifestyle modification is excellent and underlines the growing enthusiasm in this area—one about which we shall doubtless hear much more in the future.

The final section has two chapters on socioeconomic and ethical considerations and these are welcome in any modern text. They given considered reviews—albeit with a North American perspective—of the problems that are rightly attaining ever greater prominence in the health care systems of developed countries. Perhaps is it is nit picking to highlight the sudden appearance in the final stages of the text of the word “elders” when previously they had been “elderly”, “old people”, or “the aged”, but this is one of the disadvantages of a multi-authored book in which 95% of the contributors are physicians.

Generally Geriatric Cardiology is a welcome contribution to books on heart disease in old age. It is also well presented, illustrated, referenced, and indexed and thus deserves a place on the bookshelves of all British hospital libraries, but priced at £54.00 few doctors are likely to buy it themselves.

ANTHONY MARTIN


Few would argue against the view that the techniques now available in molecular biology have, and will continue, to advance our understanding of human cardiac disease. Most practising cardiologists have come to terms with the production of therapeutic substances such as plasmogen activator by recombinant DNA technology. Molecular biology has far more to offer in terms of diagnosis and understanding the basic mechanisms of disease. These aspects require a deeper knowledge of the principles of the technology, which are not always easy to acquire by those who do not practise the trade of molecular biology. Few clinicians will be totally conversant with northern, western and Southern blots and even the meaning of a lod score is not immediately obvious.

This primer first aims to bridge this gulf and then sets out to show how the techniques have been used to give an understanding of mechanisms in cardiac disease.

The first objective has been achieved extremely well. The role of nucleic acids and genes in the synthesis of proteins is well explained and illustrated by numerous line diagrams. Those who wish to know what Southern blots are will find the technique clearly explained and illustrated. There are lucid sections on the essentials of molecular genetics, the concepts of linkage and lod scores, and restriction fragment mapping in the isolation of genes.

The second objective of the book, to show how these techniques have been used, is less successful largely because it is incomplete. What is there is done well. There are chapters on the molecular biology of contractile filaments, myocyte growth and hypertrophy, and myocyte ion channels. Even within these sections, however, the clinician will find little help in understanding how the clinical picture is produced. Put another way, in the terminology of molecular biology, there is little discussion of the link between genotype and phenotype. For example, the abnor-malities of heavy chain myosin are described but not how these might cause the disease of hypertrophic cardiomyopathy.

There are notable omissions. For example, there is no discussion of the genetic abnormalities of lipid metabolism or of connective tissue synthesis, thus familial hypercholes-terolaemia and Marfan disease are not mentioned.

The authors no doubt believe, with some justification, that if the book were comprehen-sive in this regard it would be larger and more expensive.

For those who wish to understand the basic technology of molecular biology and to have some examples of its use, this book is an option. There are competitors in this market and potential readers should look around—but this book is both effective and relatively cheap.

MJD AVIES

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.

NOTICE

The 1993 Annual Meeting of the British Cardiac Society will take place at the Wembley Conference Centre from 18 to 21 May.