If older men or women are found to have been treated differently from those who are younger, can we be sure that there has been discrimination, and that something must be done? Dudley et al., whose report is published in this issue of *Age and Ageing* [1], seem to have started out with this premise, and claim to have proved it. Unfortunately, life is not so simple, and must not be made to seem so.

The study of potential bias is difficult. Retrospective studies always depend on the quality of the case notes and the accuracy of diagnostic coding, and the one thing that case records usually lack is a comment on what the physician was thinking. It is difficult enough to keep good records of fact, but writing down thoughts and opinions takes time, and does not lend itself to the abbreviations beloved of the medical profession. Prospective data recording for the express purpose of studying bias is equally dangerous, because looking at a process inevitably changes it, so management will not be typical. The study of possible bias therefore has to carry a health warning, but that is no reason why it should not be attempted. Of course, once possible bias has been discovered, it is entirely proper to ask why it might have occurred, and whether remediable action is really necessary.

As Dudley et al. accept, one of the main problems is deciding whether an older patient was properly treated is a lack of evidence of the effectiveness of the treatment. They say that “lack of evidence does not equate to no evidence”, but fail to answer the obvious question as to just how convincing evidence has to be for a treatment before a doctor can be criticised for not using it. There is no effective treatment that has no associated adverse effects, and the use of any therapy depends on a judgement of the likely benefits and risks.

Strictly, the results of clinical trials apply only to those patients who were included; the problem is to decide how applicable those results are to other patients. Where a clinical trial included relatively few old people (or men, or those with diabetes, or whatever), one can never be certain that the risks and benefits will be the same in such patients as in the main trial population. A claim of bias in one subgroup suggests that a benefit of a treatment applies to all, and implies a hotline to truth possessed by few doctors. Worse, it suggests that treatment should be computer-driven, and not tailored to the needs of individual patients.

**Shortcomings of cardiological trials**

Cardiological treatment has probably been better studied by clinical trial than the treatments used by any other specialty, but a careful analysis of the trials shows how limited their results may be. Thus, in almost all the trials of angiotensin-converting enzyme inhibitors in heart failure, the mean age of the patients was in the low 60s, and the majority were men—yet the heart failure population is mainly made up of elderly women.

Similarly, in the trials of thrombolytics, most of the patients were men and youngish men at that, so do the results apply to elderly women with heart attacks? Here the risk–benefit equation becomes crucial, because of the risk of stroke associated with thrombolysis. In an elderly population where the risk of stroke is high—and in a population where a variety of things might mean that a different drug regimen from the one tested might be appropriate—the risk of treatment might easily outweigh the benefit. There is now a considerable body of opinion that questions the use of thrombolytics in elderly people.

The statins provide another, but slightly different example: most of the studies did not include many older patients, and the results suggest that there is no benefit from treatment for many months. One has to question the routine use of statins in a population with a limited life expectancy.

**Bias in use of investigations**

Dudley et al. claim a bias in the use of investigations. Not all patients have the same attitude to investigations, and expectations vary. Some may feel more strongly than others that if symptoms are adequately controlled—in angina, for example—then treadmill testing is unnecessary. Our own experience of inviting patients being treated at home with loop diuretics (and who presumably therefore are thought to have heart failure) to attend a clinic for an echocardiogram has shown that many simply do not want to come. In many cases they may be right. No test is perfect, and exercise testing is often hard to interpret, especially when the patient has problems that make exercise on a treadmill difficult.

Elderly patients often have a pattern of coronary disease that is unsuitable for percutaneous intervention, so there is little point in exercise testing unless a prior decision has been made that a positive test will be
followed by an angiogram, which in turn will lead to a coronary bypass operation if coronary disease is demonstrated.

**Co-morbidity**

Co-morbidity is perhaps the most important problem. Osteoarthritis may make exercise testing impossible. A previous stroke may make the risk of thrombolysis in myocardial infarction unacceptable. Patients with heart failure are in the main elderly, and few are completely free of non-cardiovascular disease. There are at least six types of drug with a good evidence base for benefit in heart failure (digoxin, diuretics, angiotensin-converting enzyme inhibitors, \(\beta\)-blockers, spironolactone and amiodarone) and patients who have heart disease will probably also need aspirin or anti-coagulants, anti-anginals and perhaps a statin. Add to these the treatment for diabetes mellitus, arthritis, glaucoma and all the other diseases that may beset elderly people, and it is easy to see that choices have to be made. These choices will be a matter for individual clinical judgement, not for the blind application of evidence-based medicine.

The use of warfarin in patients with atrial fibrillation provides a good example. There is no question that warfarin is more effective than aspirin in preventing arterial embolisation, and that warfarin is especially beneficial in elderly subjects and those with structural heart disease. Most patients with atrial fibrillation are elderly, but it is the elderly ones who are most at risk from warfarin treatment—they are the ones who are more likely to fall and break hips, who may get muddled about tablets, and who are sometimes treated with antibiotics without adequate checks on their international normalized ratio and who develop spontaneous haemorrhages. The use of anti-coagulants always involves a fine assessment of risks and benefits, and a claim that there is bias against elderly patients because they are less often given warfarin would suggest a lack of common sense.

**Evidence versus judgement**

Perhaps it all depends on what we want. If we see the aim of medicine as the unthinking application of the results of clinical trials to all patients with the appropriate disease, then patient management can pass from doctors to managers. To an extent we have already done that: we give a thrombolytic to a patient with a myocardial infarction on the basis that statistically he or she is likely to benefit—we seem to lost sight of the fact that if we treat 200 patients, three or four will benefit, one will have a stroke and in the other 195 the treatment will be pointless. We know that we cannot identify the patients that fall into each group and we accept that these are the risks and benefits of evidence-based medicine.

However, thrombolysis applies to a well-defined population, and there are well-defined circumstances in which the risk of treatment outweighs the benefits. Other conditions are much less clear-cut, and still call for clinical judgement. Age is of itself irrelevant: what is relevant is knowledge of the risks and benefits of treatment, and an appreciation of the other diseases and other treatments that are associated with ageing.

What can never be quantified is the individual patient's general state and his or her attitude to the illness—that indefinable glint in the patient's eye that forms the foundation of good clinical judgement.

**Reference**


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