

HYPERTENSION IN THE ELDERLY

EOIN O'BRIEN

The Charitable Infirmary, Jervis Street, Dublin

When to prescribe drug treatment for hypertension is a problem at all ages, but particularly so in the elderly. Sustained elevation of diastolic blood pressure above 110 mm Hg (5th phase) is generally accepted as an indication for drug treatment.¹ The greatest problem, however, is deciding what to do with those patients with sustained diastolic levels in the range of 90 to 110 mm Hg, and although there is now some evidence that drug treatment may be beneficial in moderate hypertension in younger patients, the case is far from proven in the elderly.²

We know that hypertension is an important risk factor for stroke and coronary heart disease in the elderly³, but it has not been shown that reducing blood pressure diminishes either morbidity or mortality.

In 1973, the European Working Party on High Blood Pressure in the Elderly (EWPHE) was set up to try and determine if treatment was beneficial to elderly patients with mild to moderate elevation of blood pressure. Six hundred patients over the age of sixty have now been allocated to two groups in a double blind multi-centre trial. Half the patients have been given a placebo and half have been treated with a combination of hydrochlorothiazide and triamterene, methyl dopa being added if control of blood pressure was not adequate.

An analysis of the results to date shows that drug treatment does effectively reduce the blood pressure—the systolic pressure was 25 mm Hg and the diastolic 10 mm Hg lower in the treatment than in the placebo group. Moreover, this fall in blood pressure was maintained in the treatment group during the period of follow-up, which in some cases has been far more than five years.⁴ These results show that it is possible to reduce blood pressure and to maintain this reduction with drug treatment, but does the lowering of blood pressure improve morbidity and mortality or, alternatively, does drug treatment have any adverse effects that might in themselves contribute to morbidity and mortality? The results of the EWPHE study are analysed regularly to determine this, and the study would be terminated if a significant difference was noted. We

can take it, therefore, that the substantial fall in blood pressure has not yet been accompanied by a statistically significant reduction in stroke, myocardial infarction and death.

What then of adverse drug effects? With advancing years, many physiological and pathological changes occur and modify both pharmacokinetics and the response to drugs in the elderly.⁵ Distribution, metabolism and renal elimination of drugs are affected by ageing, and this in turn causes changes in responsiveness to drugs. Elderly patients, because of deteriorating mental function, may misunderstand or forget the prescriber's instructions.⁶ Doctors often forget to adjust the dosage of medication as the patient's age increases and, because more diseases occur in the elderly, a variety of drugs are often prescribed at once. It is hardly surprising, therefore, that the frequency of adverse drug reactions are two to three times more common in patients over sixty than in younger adults.⁶ Our aim should be to prescribe drugs for elderly patients only when there are absolute indications and, furthermore, we should endeavour to prescribe in the lowest possible dose and for the shortest possible time. Unfortunately, in hypertension anti-hypertensive drug medication once begun is usually needed for the rest of the patient's life. For these reasons it is particularly important that we examine carefully not only the beneficial effects of antihypertensive drug treatment in the EWPHE study but also any undesirable effects.

So far there have been no major disturbances in the concentrations of serum electrolytes.⁷ The serum creatinine concentration rose in both the placebo and treatment groups, but the initial rise was greater than in those having treatment. This biochemical alteration may not be of much clinical significance. There was also an increase in the serum urate and this correlated with the rise in creatinine concentration. At the end of one year's active medication the concentration of urate was on average 0.06 mmol/l (1 mg/100 ml) higher than in the placebo group. This small rise was not associated with clinical gout.

The most disturbing biochemical abnormality in the study was a rise in fasting blood glucose concentration in patients on treatment. Diabetes is a major risk factor for cardiovascular disease, and any benefits from reduction in blood pressure may be offset by thiazide-induced impairment of glucose tolerance.⁸

These interim results permit us to draw a few conclusions. First, there is as yet no evidence to show that reducing blood pressure in patients with mild to moderate hypertension improves the prognosis in the elderly and, in practice, we should confine antihypertensive drug treatment for our patients over the age of sixty to those with sustained elevation of blood pressure above 100 mm Hg (5th phase); this policy is modified if the systolic pressure is persistently 180 mm Hg or higher and if there is evidence of cardiovascular involvement. Furthermore, we must bear in mind the European study is using a thiazide diuretic the adverse effects of which may in the course of time be shown to outweigh the benefits derived from blood pressure reduction. Whatever answers eventually come from the study will apply only to the particular treatment chosen, and there is a great need to mount a similar study using other antihypertensive drugs; for example, beta-adrenergic blocking drugs.

References

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