ABC of Blood Pressure Reduction

Difficulties and developments in treating hypertension

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The initial papers in this series have been brief and dogmatic and undoubtedly give the impression that the treatment of hypertension is simple and straightforward. Nothing could be further from the truth. Our aim was to make safe and sensible suggestions on treatment in a manner that was short, sharp, and to the point.

Compliance

Because high blood pressure usually causes no symptoms a major stimulus for the patient to continue drug treatment is removed. For this reason responsibility for ensuring continued

to and interest in his condition. Calendar packs are a good reminder to the patient to take his treatment. The patient's attendance for appointments may indicate how well he complies with his medication. Direct questioning of the patient about his present tablet regimen often yields surprising results and all patients should be instructed to bring their tablets to the consultation. The "little yellow tablets" that the patient describes may not be the same "little yellow tablets" that the doctor is thinking about.

The reduction of blood pressure and fall in pulse rate with beta-blockers, the fall in serum potassium with thiazide diuretics, and the rise in pulse rate with vasodilators are all markers of treatment which can be readily checked. Testing urine and

TABLE I—Initial severity and degree of blood pressure control achieved in 1075 consecutive patients attending hospital blood pressure clinics

Diastolic blood pressure before treatment (mm Hg):	90-99	100-109	110-119	120-129	≥130	Total (%)
No (%) of patients	49 (5)	200 (19)	304 (28)	222 (21)	300 (28)	1075
No with diastolic pressures (mm Hg) during treatment of:						
<90	20	41	28	11	20	120 (11)
90-99	25	87	114	76	56	358 (33)
100-109	3	62	113	76	91	345 (32)
110-119	1	9	37	44	67	158 (15)
≥120	0	1	12	15	66	94 (9)

TABLE II—Initial severity and degree of blood pressure control achieved in 138 consecutive patients attending a health centre blood pressure clinic

Diastolic blood pressure before treatment (mm Hg):	90-99	100-109	110-119	120-129	≥130	Total (%)
No (%) of patients	15 (11)	38 (28)	41 (30)	26 (19)	18 (13)	138
No with diastolic pressures (mm Hg) during treatment of:						
<90	8	14	8	3	0	33 (24)
90-99	6	22	23	8	8	67 (49)
100-109	1	2	8	11	7	29 (21)
110-119	0	0	2	3	2	7 (5)
≥120	0	0	0	1	1	2 (2)

treatment rests on the patient's general practitioner. The primary objective is to explain to the patient the reason for and the importance of taking tablets—usually for the rest of his life. Newer drugs allow treatment regimens which are simple and relatively free of side effects. The involvement of the patient in his own care through blood pressure record cards and home blood pressure recordings should improve the patient's attitude

blood for the presence of drugs or their metabolites indicates whether the patient is taking his drug immediately before his appointment but the presence of an expected concentration of the drug does not mean that he is taking it regularly in the required dose.

The responsibility to recall the patient who fails to attend rests with the doctor and it is important that defaulters are chased up.

Response to therapy

Even when patients are regular attenders and appear to comply well with their treatment, blood pressure control is still a problem. In both general practice and in special hospital clinics the failure to achieve adequate blood pressure reduction is staggering. Tables I and II show the frequency of different

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levels of blood pressure control in patients with mild, moderate, and severe hypertension attending a general practice¹ and a hospital-based blood pressure clinic² respectively. Many patients had totally uncontrolled blood pressures and a correspondingly poor prognosis.³ Occasionally the use of new and potentially dangerous drugs and relatively unorthodox drug regimens may be needed to control pressure in such cases.

The ideal

As in all forms of medicine the ideal would be prevention of the condition. At present prevention seems an unlikely possibility, but adjustments to such factors as overall reduction in salt intake, obesity, and alcohol intake together with increased physical exercise and reduction of stress may have a profound influence on mild hypertension. In patients with mild hypertension small reductions in blood pressure could have a considerable influence in reducing the national mortality and morbidity for vascular disease. As prevention is unattainable early discovery and prevention of complications should be a major therapeutic goal. At present public and medical attitudes are against mass screening programmes so blood pressure measurements are confined to those times when patients seek help for other reasons. It is a pity if such opportunities are missed or information so obtained is ignored.

The discovery/invention of beta-blockers by Sir James Black has been the single most important development in the management of hypertension since the early 1960s. When these drugs can be given once daily or, if necessary, in a single tablet combined with a diuretic treatment of large numbers of hypertensive patients is rendered simple and relatively free of side effects.

An important new approach is the use of angiotensin-converting enzyme inhibitors (ACE inhibitors). The first of these, captopril, prevents the conversion of angiotensin I to angiotensin II. It is an important new drug and it, or less toxic analogues, will probably be useful in the future.

The development of centrally acting drugs without the common side effects of depression and disturbance of sleep, which are a problem with methyldopa and clonidine, would make these agents very attractive. They could be used as first-line treatment in cases where beta-blockers are contraindicated or as an additional drug in resistant cases.

Diuretics that lacked the common metabolic effects of glucose intolerance, hypokalaemia, hyperuricaemia, and raised serum lipids, would be ideal. Unfortunately the uricosuric diuretic agent, tienilic acid, was withdrawn from use because of hepatic side effects but we hope for similar less toxic agents in the future.

Conclusion

Hypertension should be regarded as a risk factor which should be managed mainly by general practitioners. Only a tiny minority of patients need to attend hospital clinics. The achievement of good blood pressure control requires the correction of contributing factors, the use of good drugs, adequate and lifelong follow up, and a sympathetic understanding of patients' needs. In treating patients with diastolic pressures consistently over 100 mm Hg (phase 5) a doctor can be completely confident that by reducing pressure he is doing the patient some good. Strokes associated with hypertension should be regarded as completely avoidable, and there is now evidence that myocardial infarction can also be prevented.

References

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- ² Glasgow Blood Pressure Clinic. *J Roy Coll Physicians Lond* 1972;7:87.
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MATERIA NON MEDICA

Pennine Way conquered

Pennine Way conquered, or so it says on my tie. Several times during the journey I thought it would conquer my son and I, but we survived.

Two intrepid (and fairly clean) fools set off from Edale one bright sunny morning with hope in their hearts and toiled up the nearly vertical head of Grindsbrook, wondering if they would manage to get to Crowden that night, let alone complete the Way. The same two fools, fairly clean once again, walked down into Kirk Yetholm on a bright sunny evening 20 days and 270 miles later. We had walked the last 27 miles in 11½ hours. We were thinner and much fitter, though the soles of our feet were thicker. I suppose we were wiser, if only because we both agreed that we would never do it again. In between we had been kneedeep in peat bogs, soaked to the skin, burnt by the sun, blown about by gales, frozen to the marrow, hungry, tired, soaked to the skin, thirsty, stiff, bad tempered, good tempered, but mostly soaked to the skin.

We had spent hours in pubs waiting for the rain to stop. We had plodged for hours through squishy fields and over squelchy moors with the rain beating down on us. We had enjoyed the fellowship of a wide range of pleasant, helpful people, people who would wait in the rain to help other walkers over rain-swollen becks; people who respected our reasons for not joining a large party; people who all were there for their own reasons and among whom was a mutual understanding which transcended social differences. Each walker on the Way wanted everyone else to succeed and any competition was friendly and not too serious. The major compensation for all the discomfort was

the waterfalls in spate—elegant Hardraw Scaur, bosky Jennet's Foss, foaming Low Force, mighty High Force, awe-inspiring Cauldron Snout, and many others, unnamed, spectacular. We had gone up mountains and avoided going down potholes. We had walked in cloud and sun and wind and rain and mist or any combination or permutation of any number of them.

The seven best memories are the relief at finding a peat grough on the trackless wilderness of Kinder Scout which became the Kinder River; the area around Malham Cove and the Dry Valley; Cauldron Snout, which is a waterfall, which must be approached on foot from below to get the full effect; High Cup, an unbelievable 700-foot cleft in the Pennines near Dufton in the Eden Valley; the views of the sunlit Eden Valley and the not so sunlit Tyne Valley seen through windows in the clouds from the two Dun Fells and Cross Fell; the Roman Wall; and the views from the Cheviots on the last day.

Did we enjoy it? Some of it certainly; some of it certainly not; most of it in retrospect but not at the time. Would we recommend it? Yes, do it if you want to (and are fit enough). Do it because it is there, and do it all in one journey. Do not set out on it without very careful thought and planning. Do it but don't expect to enjoy it. The pleasant memories are a bonus to be savoured for years, and as the months since we did it pass by the bad bits fade into forgetfulness.

The ties? They were on sale in the bar at the Border Hotel, Kirk Yetholm, where the wayfarers who have survived celebrate their arrival (and survival).—L M MAYER-JONES (district community physician, Durham).