

Influence of age on general practitioners' definition and treatment of hypertension

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Recent guidelines on management of hypertension may unwittingly have focused some attention on the question of when treatment should start in younger patients. Although younger patients have a high relative risk of premature vascular disease,¹ they gain little from treatment in short term studies. The implication from the Medical Research Council trials of treatment in hypertension^{2,3} and the British Hypertension Society guidelines⁴ is that the cut off point for treatment falls from a diastolic blood pressure of 100 mm Hg in younger patients without coexistent risk factors to one of 90 mm Hg in elderly patients (see figure). Since general practitioners manage most patients with hypertension we investigated whether current practice mirrors existing guidelines and, in particular, whether the cut off point for treatment changes with patient age.

Subjects, methods, and results

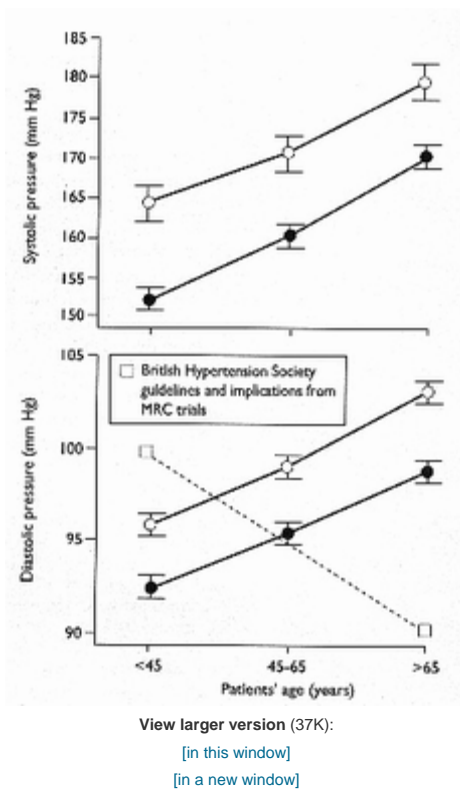
Questionnaires, endorsed by the British Hypertension Society and identified by number only, were sent to 200 of the 1145 general practitioners in East Anglia in May 1993. This sample was randomly selected. Follow up included a thank you or reminder letter and a second questionnaire to non-responders. General practitioners were asked the lowest systolic blood pressure they would use to define hypertension, the lowest diastolic pressure to define mild hypertension, and the lowest diastolic and systolic pressures at which they would start drug treatment for three age groups: less than 45, 45-65, and greater than 65.

One hundred and twenty five (62.5%) completed questionnaires were returned. Results are expressed as means (95% confidence intervals). We used the STATGRAPHICS computer package to examine the influence of patients' age on the cut off points for defining and treating hypertension in a two way analysis of variance. The cut off points for definition and treatment were compared by repeated measures analysis of variance, incorporating the differences at each age group, and by paired t test at each age.

The cut off points for systolic and diastolic blood pressure for both definition and treatment rose significantly with age in all three groups ($P < 0.0001$ by two way analysis of variance; figure), but only 64 general practitioners treated isolated systolic hypertension. The cut off points for systolic pressure were 10.9 mm Hg (9.3 to 12.5 mm Hg) higher for treatment than for diagnosis; those for diastolic pressure were 3.8 mm Hg (3.3 to 4.2 mm Hg) higher for treatment than for diagnosis ($p < 0.0001$ for both). Age did not affect the difference between these cut off points.

Comment

There is an age paradox in the treatment of hypertension. A man of 75 with a blood pressure of 150/95 mm Hg could be regarded as having protective factors in order to have reached his age without evidence of vascular disease; yet recent studies show him to be at high absolute risk of having an event within five years that could be prevented by antihypertensive treatment.^{3,5} In contrast, a man of 30 with the same blood pressure is at high relative risk of developing premature vascular disease over the next 20 years,¹ but his absolute risk is minimal within the next decade and so treatment would confer no apparent benefit. This paradox translates into a disparity between the influence of age on the definition of hypertension and the pressure requiring treatment.



Lowest systolic and diastolic blood pressures at which 125 general practitioners would define (*-*) and treat (o-o) hypertension. Values are means (95% confidence intervals); MRC=Medical Research Council.

The tendency of respondents to treat only a diastolic blood pressure of 100 mm Hg or above in older patients is contrary to the recently shown benefits of treating lower pressures. However, it is tempting to consider whether these general practitioners' more aggressive approach to managing hypertension in younger patients may not after all be correct. Since patients of 30 with a blood pressure of 150/95 mm Hg may later develop severe hypertension, is it worth treating them at 30 to arrest the processes causing this progression? From a general practitioner's perspective of long term care, might treatment of mild hypertension in a younger patient now be easier than treatment of severe hypertension or its complications in the future? The answers are unknown, but the awareness that general practitioners are paying more attention to relative risk than absolute risk may help in finding a solution.

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1. Hart JT, Edwards C, Hart M, Jones J, Jones M, Haines A, et al. Screen detected high blood pressure under 40: a general practice population followed up for 21 years. *BMJ* 1993;306:437-40.
2. Medical Research Council Working Party. MRC trial of treatment of mild hypertension: principal results. *BMJ* 1985;291:97-104.
3. MRC Working Party. Medical Research Council trial of treatment of hypertension in older adults: principal results. *BMJ* 1992;304:405-12.
4. Sever P, Beevers G, Bulpitt C, Lever A, Ramsey L, Reid J, et al. Management guidelines in essential hypertension: report of the second working party of the British Hypertension Society. *BMJ* 1993;306:983-7.
5. Beard K, Bulpitt C, Mascie-Taylor H, O'Malley K, Sever P, Webb S. Management of elderly patients with sustained hypertension. *BMJ* 1992;304: 412-6.

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