

General practitioners' knowledge of and attitudes to the management of hypertension in elderly patients

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SUMMARY

Background. *It is not known whether the results from randomized controlled trials influence general practitioners' knowledge of and attitudes to clinical practice.*

Aim. *This study set out to assess general practitioners' knowledge of and attitudes to the management of hypertension in patients aged 65 years and over after the publication of three randomized controlled trials.*

Method. *A cross-sectional survey of principals in general practice was undertaken using a self-administered questionnaire. The study was confined to 35 randomly selected general practices whose patient catchment area lay within the boundary of Northamptonshire Family Health Services Authority. A total of 92 general practitioners from 27 practices responded. The main outcome measures were: the reported use of a protocol to manage elderly patients with hypertension; method and frequency of blood pressure measurement; influence of patients' age on diagnosing and initiating treatment of hypertension; and use of non-pharmacological and pharmacological therapies.*

Results. *Eighty four per cent of the general practitioners reported starting treatment only after measuring blood pressure on three separate occasions; 99% measured blood pressure with the patient seated while 29% also measured blood pressure while the patient was standing. Half of the respondents reported treating patients with isolated systolic hypertension once systolic blood pressure exceeded 179 mmHg. All the general practitioners reported recommending non-pharmacological treatment prior to drug therapy; 83% would use a diuretic as their drug of first choice.*

Conclusion. *It appears that despite the publication of several sets of guidelines for the management of hypertension in elderly people, based on randomized controlled trials, there is still considerable variation in the knowledge and attitudes of general practitioners. However, compared with a previous survey in Leicestershire in 1991, the general practitioners in this study reported a lower blood pressure threshold for initiating treatment of elevated blood pressure in elderly patients, including those with isolated systolic hypertension, which may in part be attributed to the introduction of the guidelines.*

Keywords: *hypertension; elderly; management of disease; protocols; doctors' knowledge; doctors' attitude.*

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Introduction

THE benefit of treating hypertension with pharmacological agents to reduce cardiovascular and cerebrovascular morbidity and mortality is well accepted for middle aged patients.¹ However, until recently controversy existed over whether similar benefits extended to elderly people. This uncertainty was reflected in attitudes to treatment among general practitioners in a survey carried out in Leicestershire during 1991.² Since then the results of three large randomized controlled trials have been published which have confirmed a clear benefit from treating patients aged 60 years and above with elevated systolic and/or diastolic blood pressure.³⁻⁵ All of these reports were published in major medical journals which are readily accessible to general practitioners, and a number of editorials and review articles were also published recommending modification of current clinical practice for treatment of hypertension in elderly people.⁶⁻⁸ The Systolic Hypertension in the Elderly Program demonstrated that treatment with a diuretic as first line therapy, and addition of a beta-blocker if needed, reduced the total number of episodes of stroke by 36% and of all episodes of cardiovascular illness by 32%.⁴ Similar results were obtained in the Medical Research Council trial where there was a 25% reduction in the total number of episodes of stroke and a 17% reduction in all episodes of cardiovascular illness.⁵ In the Swedish trial the benefits of treatment were most marked; there was a 47% reduction in episodes of stroke and a 40% reduction in all episodes of cardiovascular illness.³

The objective of this study was to assess the extent to which this information had influenced general practitioners' attitudes to and knowledge of the management of hypertension in elderly people (aged 65 years and over). A survey was conducted among general practitioners and a study of the blood pressure records of their elderly patients carried out. The results of the records study will be presented elsewhere.

Method

This study was confined to general practices which had their practice population wholly within the boundary of Northamptonshire Family Health Services Authority. Of the 85 practices which met this criteria, 35 were selected at random (41%). A letter was sent to the practice manager requesting access to examine the notes of a random selection of 100 patients aged 65 years or over from the practice age-sex register. If the practice agreed to participate a self-administered questionnaire was sent to each full-time partner; all completed questionnaires were collected from the practice by one of the investigators (TF) on the same day that the practice notes were examined. The survey was carried out from April to June 1993.

The questionnaire addressed the following issues: the reported use of a protocol to manage elderly patients with hypertension; method and frequency of blood pressure measurement; influence of patients' age on diagnosing and initiating treatment of hypertension; and use of non-pharmacological and pharmacological therapies. Respondents were asked to state the blood pressure level at which treatment was normally commenced.

Results were entered onto a portable computer and analysis was carried out using the *EPI INFO* statistical package.⁹ Results are expressed as percentages for each question. For variables which were not normally distributed the median value and range are given. A number of indirect comparisons were made with the results of a similar survey carried out among Leicestershire general practitioners in April 1991.² Non-parametric tests of statistical significance were used in comparisons. All *P* values quoted are two-tailed and 95% confidence intervals have been calculated using the *Confidence interval analysis* software package.¹⁰

Results

Twenty seven of the 35 practices invited to participate agreed to take part in the study (77%). Of the 97 partners in these practices, 92 completed questionnaires (95%).

Protocol

Sixteen of the 27 practices (59%, 95% CI 39% to 78%) reported having a formal protocol for the management of elderly patients with hypertension, although in four of these practices there was disagreement among the partners as to whether such a protocol existed.

Blood pressure measurement

When presented with the scenario of a 70-year-old man with an initial blood pressure of 199/115 mmHg but no evidence of end organ damage, 84 of the 92 general practitioners (91%, 95% CI 84% to 96%) would not commence treatment until the patient's blood pressure had been measured on at least three separate occasions (Table 1). Almost all general practitioners measured blood pressure with the patient in the sitting position (99%, 95% CI 94% to 100%); just over a quarter (29%, 95% CI 20% to 40%) stated that they would also routinely measure blood pressure with the patient standing.

Diagnosis and treatment of hypertension

Combined systolic/diastolic hypertension. Nearly all general practitioners (98%, 95% CI 94% to 100%) would treat high blood pressure in patients aged 65–79 years. In patients aged 80–89 years, 78% of general practitioners (95% CI 65% to 83%) stated that they would start treatment for high blood pressure. However, the threshold at which treatment would be commenced was consistently lower among the Northamptonshire general practitioners in 1993 than among their Leicestershire colleagues in 1991 (Table 2).

Isolated systolic hypertension. The definition of isolated systolic blood pressure was: systolic blood pressure \geq 160 mmHg and diastolic blood pressure $<$ 90 mmHg. Half of the Northamp-

tonshire general practitioners reported that they would treat patients with isolated systolic hypertension once systolic blood pressure exceeded 179 mmHg (Table 3). There was a consistent trend among Northamptonshire general practitioners to start treatment for isolated systolic blood pressure at lower levels of systolic blood pressure when compared with their Leicestershire colleagues.

Non-pharmacological strategies. All of the 92 general practitioners stated they would offer some form of non-pharmacological treatment before commencing drug treatment. Nearly all of the respondents would advise patients with high blood pressure to give up smoking (99%, 95% CI 94% to 100%) and to lose weight (98%, 95% CI 92% to 100%). A large proportion would advise their patients to take more exercise (61%, 95% CI 50% to 71%), eat less salt (54%, 95% CI 44% to 65%) and reduce their alcohol consumption (72%, 95% CI 61% to 81%). Only, nine general practitioners (10%, 95% CI 5% to 18%) reported that they routinely measured patients' blood cholesterol level if their blood pressure was high.

Pharmacological therapy. The first line treatment for a 70-year-old patient with hypertension but no end organ damage was reported to be a diuretic by 76 respondents (83%, 95% CI 73% to 90%); 54 (59%, 95% CI 48% to 69%) specified that they would prescribe a thiazide diuretic. Only five general practitioners reported that they would use beta-blockers as first line therapy (5%, 95% CI 2% to 12%), while 22 general practitioners stated that they would never use this class of drug as initial therapy (24%, 95% CI 16% to 34%).

Discussion

The British Hypertension Society guidelines for the management of hypertension in elderly people, based on the results of randomized controlled trials, recommend that 'several recordings should be obtained' prior to the commencement of treatment.¹¹ In practice they suggest that blood pressure be measured on up to four separate occasions and that two measurements should be taken during each consultation. Furthermore, they emphasize the importance of a standing blood pressure measurement in elderly patients.¹¹ In this survey the majority of general practitioners reported taking three measurements before starting treatment; however, only a minority reported taking a standing as well as a sitting measurement.

There are three possible explanations for the discrepancy between current guidelines and clinical practice: a lack of knowledge about the existence of the guidelines (unfortunately, the percentage of general practitioners who claim to have seen the British Hypertension Society guidelines is not known), a failure of general practitioners to accept or implement guidelines,¹² and a time lag between publication and dissemination of guidelines and the subsequent change in clinical practice. The publication of the second British Hypertension Society guidelines occurred just before the start of the study.¹¹

In contrast to the situation with blood pressure measurement, reported clinical practice for the level at which pharmacological therapy is initiated for the treatment of hypertension in elderly patients is closer to the current guidelines.¹¹ Nearly all general practitioners in this survey (98%) would treat patients aged 65–79 years. The blood pressure threshold at which treatment would reportedly be commenced among Northamptonshire general practitioners was lower in all patient age groups than among Leicestershire general practitioners two years previously. It was surprising to find that 78% of Northamptonshire general practitioners would commence treatment in patients aged 80–89 years. At present there is no clear evidence that commencing treatment

Table 1. Blood pressure measurement prior to commencement of treatment in a 70-year-old man with an initial blood pressure of 199/115 mmHg but no evidence of end organ damage.

Treatment commenced:	% of GPs	
	Northamptonshire 1993 (n = 92)	Leicestershire 1991 (n = 360) ^a
Immediately	1.1	3.1
After 2 visits	7.6	13.9
After 3 visits	83.7	56.1
After >3 visits	7.6	25.0

Northamptonshire versus Leicestershire GPs: chi square = 22.4, 3 degrees of freedom, *P* < 0.001. *n* = total number of GPs in group. ^aRef 2. Seven GPs (1.9%) in Leicestershire stated that they would not treat raised blood pressure at all in this patient.

Table 2. Blood pressure levels at which treatment would be commenced, by age of patients, in Northamptonshire in 1993 (*n* = 92) and in Leicestershire in 1991 (*n* = 360).

Age of patients (years)	Median blood pressure (mmHg) at which treatment given (range) [no. of GPs who would treat age group]			
	Systolic		Diastolic	
	Northamptonshire	Leicestershire	Northamptonshire	Leicestershire
65–69	166 (140–200) [90]	175 (140–220) [353]	100 (85–110) [90]	100 (90–120) [353]
70–79	170 (160–200) [90]	180 (150–240) [346]	100 (90–120) [90]	106 (90–120) [346]
80–89	180 (160–229) [78]	190 (150–240) [223]	100 (90–130) [66]	110 (90–135) [223]
90+	185 (160–220) [26]	195 (150–240) [112]	105 (90–130) [29]	110 (90–135) [112]

n = total number of respondents.

Table 3. Cumulative percentage of general practitioners who would treat isolated systolic hypertension, by level of systolic blood pressure.

Systolic blood pressure (mmHg)	% of GPs who would treat systolic hypertension		
	Northamptonshire 1993 (<i>n</i> = 92)	Leicestershire 1991 (<i>n</i> = 360)	Difference (95% CI)
160–179	13.0	1.1	11.9 (4.9 to 18.9)
180–199	50.0	15.8	34.2 (23.3 to 45.1)
200–219	85.9	44.7	41.1 (32.4 to 49.9)
220+	96.7	63.6	32.0 (25.6 to 38.5)
Do not know	0	2.8	2.8 (1.1 to 4.5)
Would not treat	4.4	33.6	29.3 (22.8 to 35.7)

n = total number of respondents. CI = confidence interval.

in people aged over 80 years is of any benefit in reducing cardiovascular morbidity or mortality.⁷

Nearly all general practitioners in this survey (97%) agreed that treatment of isolated systolic hypertension, once systolic blood pressure exceeds 219 mmHg, is necessary. The threshold at which they would commence treatment did vary, with only 13% stating that they would commence treatment when systolic pressure was 160–179 mmHg. Despite this, the Northamptonshire general practitioners still had a lower threshold for initiating treatment in patients with isolated systolic hypertension, than the respondents in the earlier Leicestershire study.

All of the general practitioners in this survey reported that they would recommend some form of non-pharmacological lifestyle modification as part of their anti-hypertensive treatment strategy. Most general practitioners (83%) stated that they would commence treatment with a diuretic. Both these findings concur with the lifestyle modifications and use of pharmacological interventions recommended by the British Hypertension Society.¹¹

An important limitation in interpreting the results of this study is the design, which focused on the reported knowledge and attitudes of the general practitioners towards the management and treatment of elderly patients with hypertension. Whether such responses reflect actual clinical practice cannot be elucidated from this study. It was not possible to validate general practitioner's responses from the questionnaire against their actual clinical practice. However, the concurrent survey of the patients' notes did show that the majority of general practitioners started treatment after fewer than three separate blood pressure recordings and seldom measured blood pressure while the patient was standing, suggesting a discrepancy between reported and actual practice. Recent reports have suggested that enquiring into physicians' management of hypertension is a useful gauge to clinical practice.¹³ However, in a survey of general practitioner records,

blood pressure, weight and smoking control and follow up were documented 'unimpressively'¹⁴ revealing a gap between what is said to be practised and what actually takes place.

Furthermore, to examine the impact of the findings from the three recent randomized controlled trials, any comparisons should have been carried out on the same sample of general practitioners before and after the publication of trial results. However, this study was instigated in Northamptonshire as part of the local health of the nation¹⁵ strategy, and hence only an indirect comparison of the results of the present survey in Northamptonshire with those of the earlier survey in Leicestershire could be made.

Although the sample size of Northamptonshire general practitioners was small, there was no systematic difference in the proportion of doctors practising in training practices, urban/rural practices or single handed/group practices when compared with the rest of the general practitioners in Northamptonshire (data not presented). The eventual number of general practitioners invited to participate was small because of the nature of the multi-stage random sampling. However, the response rate among those invited to complete a questionnaire was high.

From the range of responses given by general practitioners in Northamptonshire it is clear that there is still wide variation in the reported management of elderly patients with hypertension, with room for further improvement. However, the blood pressure levels at which treatment is reportedly initiated have fallen, for both combined systolic/diastolic hypertension and isolated systolic hypertension compared with that documented two years previously in the Leicestershire survey.

The results of the indirect comparison made between the two surveys indicate a marked change in the knowledge and attitudes of the general practitioners over a relatively short time period which coincided with the publication of three key randomized controlled trials and a series of editorials and review articles in

major medical journals.³⁻⁸ A recent report highlighted the impact of results from clinical trials on clinical practice in the treatment of acute myocardial infarction.¹⁶ A time lag before the results of the randomized trials were incorporated into clinical practice was reported as well as a disparity in clinical practice between clinicians in different district health authorities. It seems reasonable to postulate that the results and dissemination of the three randomized trials might, at least in part, have contributed to the differences in the reported management of elderly patients with hypertension found in these two surveys.

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