Management of hypertension in the elderly: attitudes of general practitioners and hospital physicians

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- 1 The attitudes of general practitioners and hospital physicians to the management of hypertension in the elderly, were examined by responses to a postal questionnaire distributed within the Northern Region, concerning the management of a healthy 75 year old male non-smoker with sustained diastolic or isolated systolic hypertension.
- 2 Two hundred and fourteen (64%) general practitioners and 127 (70%) hospital physicians responded to the questionnaire. General practitioners stated they would most commonly measure to the nearest 2 mm Hg (47%) as compared with nearest 5 mm Hg (61%) by physicians; $P < 0.05$. When measuring diastolic blood pressure 16% general practitioners and 31% physicians would use phase IV sounds; $P < 0.01$.
- 3 Median levels of hypertension, confirmed by repeated readings, at which anti-hypertensive therapy would be commenced were similar: 180 (150–230)/100(90–120) mm Hg vs 180 (150–200)/100 (90–120) mm Hg; median (range). The stated use of non-pharmacological methods to lower blood pressure before starting drug therapy was similar (74% vs 63%). General practitioners were more likely to prescribe a thiazide diuretic (70% vs 54%) and less likely to prescribe a calcium channel blocker (14% vs 28%) as first line therapy; data for diastolic hypertension, $P < 0.001$.
- 4 Considerable variation exists amongst both general practitioners and physicians in their stated assessment and management of a healthy elderly non-smoking male with sustained hypertension. General practitioners and physicians have similar stated thresholds for treating hypertension but differ in their choice of first line therapy. These results suggest that effective interventions in addition to guidelines need to be developed if hypertension in the elderly is to be consistently managed.

Keywords hypertension elderly prescribing

Introduction

Recent studies have demonstrated clear benefits of treating diastolic hypertension and isolated systolic hypertension in otherwise healthy elderly individuals below 80 years age [1–4]. Current expert recommendations are that elderly individuals with sustained systolic or diastolic blood pressures of greater than 160/90 mm Hg should be treated [5]. Hypertension is the main risk factor for stroke with systolic blood pressures of more than 140 mm Hg accounting for 40% strokes in epidemiological studies of attributable risk [6]. It has been suggested that a practical

approach to reducing stroke incidence would be to increase to 50% the proportion of people with raised blood pressure (>160/95 mm Hg) that had their blood pressure controlled (<140/90 mm Hg) [7]. For the population aged 65–80 years, case recognition and initiation of effective treatment for hypertension has become an urgent aim, because this population has a low level of pre-existing disability, an appreciable annual incidence of stroke (about 1%) and clear evidence of treatment benefit. Despite wide dissemination of the results of the recent studies of hypertension in

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the elderly, the detection and treatment of elderly hypertensives appears to be poor. Studies in the 1970s from the USA demonstrated that only 12% of hypertensives were treated satisfactorily and the 'rule of halves' was described [8]. The most relevant study in the UK suggests that the rule of halves still applies to Scotland with half of young hypertensives remaining undetected, half of the detected patients untreated and half of the treated patients uncontrolled [9]. No similar studies have been performed in an elderly population but a study that examined the stated management of elderly hypertensives by general practitioners in early 1991 suggests that many elderly patients would remain untreated even if detected [10]. Since this time further evidence for the benefits of treating hypertension in the elderly has become available from the systolic hypertension in elderly patients trial (SHEP), Swedish trial in old patients with hypertension (STOP) and the Medical Research Council trial of hypertension in older adults [2–4]. In addition guidelines on the management of elderly patients with sustained hypertension have been published [5]. It is unclear whether hospital physicians and general practitioners differ in their attitude to treating hypertension in the elderly, and this may be important if general practitioner prescribing is influenced by hospital practice. The aims of the present study were to determine the attitudes of general practitioners and hospital physicians within the Northern Region towards the management of hypertension in the elderly during the period Dec 1992–Mar 1993 when definitive data for the benefits of treating hypertension in the elderly were available.

Methods

A postal questionnaire with a stamped addressed envelope concerning the management of a healthy male non-smoker with hypertension was sent to 337 general practitioners and 177 hospital physicians, registrar to consultant grade, in specialties likely to treat hypertension in Dec 1992. A 1 in 5 random sample of general practitioners within Northern Region was taken from a list compiled from individual family health service authorities. Hospital physicians were identified from the record of medical registrar, senior registrar and consultant posts held by the Northern Region. Individuals in the specialties of general medicine, geriatrics, cardiology, nephrology and neurology were included. Returned forms were identified by a number specific to each doctor and a second mailing made after 8 weeks. The questionnaire consisted of nine questions examining a) levels of sustained diastolic and systolic hypertension at which antihypertensive therapy would be commenced in an otherwise well asymptomatic 75 year old male non-smoker, b) accuracy of blood pressure measurement, use of Korotkoff sounds and number of measurements made before initiation of therapy, c) use of non-pharmacological methods and first choice of drug therapy and d) whether they believed treatment of hypertension at their stated level would result in a reduced incidence

of stroke, myocardial infarction or death. The questionnaire wording was as follows: 1) At what level of diastolic hypertension confirmed by repeated readings (systolic < 180 mm Hg) would you begin antihypertensive therapy in an otherwise well, asymptomatic 75 year old male non-smoker? 2) At what level of systolic hypertension, confirmed by repeated readings (diastolic BP < 90 mm Hg) would you begin antihypertensive therapy in an otherwise well, asymptomatic 75 year old male non-smoker? 3) When measuring blood pressure in the elderly do you measure to the nearest: 1, 2, 5, 10 mm Hg. 4) When measuring diastolic blood pressure would you take the reading at the point of muffling (phase IV) or the disappearance of sounds (phase V)—assuming both are audible? 5) On how many occasions would you measure blood pressure before making a decision to initiate antihypertensive therapy in an elderly asymptomatic patient (systolic < 200 mm Hg, diastolic < 120 mm Hg): 1/2/3/4. 6) Would you use non-pharmacological methods to lower blood pressure in such a patient before starting drug therapy? Yes/No. If Yes please specify non-pharmacological methods used. 7) What is your drug of first choice in the treatment of hypertension in an otherwise well, asymptomatic 75 year old male non-smoker? Please tick one only for systolic and diastolic hypertension respectively: ACE inhibitor, alpha-blocker, beta-blocker, calcium channel blocker, thiazide diuretic. 8) Do you believe that the treatment of systolic hypertension (at the level you initiate therapy) in an otherwise well, asymptomatic 75 year old male non-smoker results in a reduction in the incidence of: stroke, myocardial infarction, death: Yes/Not Established/No for each. 9) Do you believe that the treatment of diastolic hypertension (at the level you initiate therapy) in an otherwise well, asymptomatic, 75 year old male non-smoker results in a reduction in the incidence of: stroke, myocardial infarction, death: Yes/Not Established/No 10) Do you have any further comments on the treatment of hypertension in the elderly?

Data analysis

Results were compared between groups by Chi square testing.

Results

The response rate after two mailings was: 64% (214 replies) from general practitioners, and 70% (127 replies) from hospital physicians.

Method of measurement

General practitioners stated they would most commonly measure to 2 mm Hg (47% vs 33%) compared with physicians who would measure to the nearest 5 mm Hg (47% vs 60%), $P < 0.05$, range 1–10 mm Hg both groups. When measuring diastolic blood pressure 16% general practitioners and 34% hospital physicians would use phase IV Korotkoff sounds; $P < 0.01$. Both

groups would most commonly measure blood pressure on 3 (range 1–4) occasions before initiating therapy; 78% vs 67%, $P < 0.01$.

Level of blood pressure at which therapy initiated

The median (range) level of hypertension, confirmed by repeated readings, at which antihypertensive therapy would be initiated for isolated systolic and diastolic hypertension were not significantly different between general practitioners (180 (150–230)/100 (90–120) mm Hg and hospital physicians 180 (150–220)/100 (90–120) mm Hg.

Choice of therapy

When asked, 74% general practitioners and 63% physicians stated they would use non-pharmacological methods to lower blood pressure. No significant differences existed between general practitioners and hospital physicians in the type of non-pharmacological therapy used; weight loss 65% vs 58%, $P = 0.22$; reduce alcohol 28% vs 30%, $P = 0.73$; exercise 40% vs 44%, $P = 0.35$; salt restriction 24% vs 20%, $P = 0.35$. Some respondents also listed stopping smoking as non-pharmacological therapy despite a statement that the subject was a non-smoker. These responses have been excluded for the present analysis. General practitioners and physicians differed in their choice of initial first line therapy for diastolic and isolated systolic hypertension (Table 1). Respondents who stated no preference were excluded; four general practitioners and four hospital physicians for isolated systolic hypertension, two and none for diastolic hypertension. More general practitioners would use a thiazide diuretic, whereas calcium channel blockers were a more common choice amongst hospital physicians. Use of β -adrenoceptor antagonists, angiotensin converting enzyme inhibitors and α -adrenoceptor antagonists were similar in both groups.

Efficacy of treatment

The majority of doctors believed that treatment of hypertension results in a reduction in the incidence of stroke (Table 2), whereas this was not the case for myocardial infarction or total mortality. Only views on

Table 2 Views of general practitioners and hospital physicians on effectiveness of treating sustained hypertension in reducing incidence of stroke, myocardial infarction and overall mortality. % figures refer to isolated systolic/diastolic hypertension respectively. P value refers to comparison of general practitioners and hospital physicians

	<i>General practitioners (%)</i>	<i>Physicians (%)</i>	<i>P value</i>
<i>Stroke</i>			
Benefit	88/83	85/84	0.31/0.95
Uncertain	11/13	12/13	
No benefit	1/4	3/3	
<i>Myocardial infarction</i>			
Benefit	20/29	20/28	0.56/0.22
Uncertain	44/40	50/49	
No benefit	36/31	30/23	
<i>Death</i>			
Benefit	39/42	42/49	0.23/0.55
Uncertain	37/35	43/39	
No benefit	24/23	16/12	

efficacy of the effect of treating diastolic hypertension on total mortality were significantly different between the two groups ($P < 0.01$).

Discussion

These results confirm that significant variation exists amongst both general practitioners and physicians in their stated assessment and management of a healthy elderly non-smoking male with diastolic hypertension or isolated systolic hypertension. The reasons for variability between individual doctors is unclear but the variation is similar to that observed with the management of younger hypertensives [11–14]. This indicates that variability between doctors in the threshold at which they would treat sustained hypertension is unlikely to be solely explained by differing ageist attitudes, although good evidence exists that thrombolytic therapy for acute myocardial infarction is frequently denied to patients on the basis of age alone [15]. A number of other reasons may account for the reluctance of doctors to treat elderly patients with hypertension such as concerns about poor compliance, side-effects and adverse effects of lowering blood pressure excessively [16–17]. These issues remain unexplored with respect to hypertension.

The stated number of blood pressure measurements taken before initiation of therapy and use of non-pharmacological methods were similar in both groups. Despite recommendations from the British Hypertension Society made 6 years before this survey, significant numbers of doctors still use phase IV diastolic blood pressures as a basis for treatment decisions although two groups observed a reduction in the proportion of hospital doctors using phase IV [13, 14, 18]. Why more hospital physicians than general practitioners favour phase IV measurements is unclear, a finding observed in a previous study [13]. Similarly general practitioners stated blood pressure

Table 1 Stated choice of first line therapy by general practitioners and hospital physicians for systolic/diastolic hypertension in a healthy 75 year old non-smoker. Choice of therapy was significantly different between the two groups for both diastolic and isolated systolic hypertension ($P < 0.001$)

	General practitioners (%)	Physicians (%)
Thiazide diuretic	72/71	49/54
Calcium channel blocker	11/14	30/28
β -adrenoceptor antagonist	8/8	12/8
Angiotensin converting enzyme inhibitor	8/6	9/10
α -adrenoceptor antagonist	1/1	0/1

measurement accuracy was greater than that of hospital physicians, perhaps indicating a greater awareness of the importance of accurate blood pressure determination.

The levels of stated sustained hypertension (median 180/100 mm Hg) at which doctors would commence treatment in this survey of general physicians and hospital physicians, are similar to those found by Fotherby *et al.* (180/106 mm Hg) with an almost identical range of threshold levels 150–230/90–120 mm Hg [6]. The 6 mm Hg difference in median diastolic blood pressure between these two studies suggests that general practitioners as a group may be lowering their average threshold for treating diastolic hypertension in otherwise healthy elderly subjects. However a direct comparison may not be appropriate as the surveys differ in question methodology, such as using a single age, 75 years, instead of age range 70–79 years. Our findings suggest that the attitudes of general practitioners to treating isolated systolic hypertension have not changed during the 18 month period between the two surveys, despite the publication of three definitive studies and the publication of guidelines. In a recent study examining the views of hospital staff on the management of hypertension the median level of blood pressure at which consultants would initiate therapy in an asymptomatic 50 year old man was 95 mm Hg (range 85–115) suggesting that doctors may have a higher threshold for initiating therapy in older individuals with hypertension [14]. If decisions to treat hypertension are based on absolute cardiovascular risk, blood pressure lowering therapy should be initiated at a lower level in older individuals with hypertension [19]. In this study we did not seek to determine whether the respondents would initiate therapy at a lower level of blood pressure.

The primary difference between the general practitioners and hospital physicians was in the choice of first line therapy for hypertension. Physicians were less likely to use a thiazide and more likely to use a calcium channel blocker as first line therapy for hypertension in the elderly. The choice of first line therapy by general practitioners in this survey was similar to that of general practitioners in Leicestershire (thiazide 71% vs 75% if use of non-pharmacological therapies excluded), calcium channel blockers (11% vs 12%) and β -adrenoceptor antagonists (8% vs 7%). Our survey reveals that a significant minority of clinicians would use as first line therapy a drug, such as a calcium channel blocker or angiotensin converting enzyme inhibitor, that has not been demonstrated in any trial of hypertension in the elderly to reduce stroke incidence. The results of published trials suggested that low dose thiazides should be the therapy of first choice for elderly hypertensives without contraindications to these drugs.

Consistent with the results of recent studies the majority of doctors believed that treating hypertension

in the elderly would reduce the incidence of stroke, although it is of concern that over 10% of both general practitioners and physicians remain uncertain that treating a healthy 75 year old healthy non-smoking male with sustained hypertension (at a median level of 180 mm Hg) would reduce his risk of sustaining a stroke. Reflecting the results of recent controlled trials, more doctors were uncertain about whether treating hypertension would reduce the risk of myocardial infarction or death.

The survey is the first to compare stated attitudes of general practitioners and hospital physicians with managing hypertension in the elderly. Despite dealing with different patient groups both groups had similar thresholds for treating hypertension and broadly similar approaches to measuring blood pressure. The extent to which the views of hospital physicians influence general practitioner management of hypertension is unclear. The management of mild to moderate hypertension is essentially a primary care activity and it is possible that general practitioners' approach to managing hypertension is now little influenced by hospital physician opinions.

One limitation of the present study is that the results are of stated rather than actual practice. It is unlikely that actual practice is 'better' than that stated with respect to the number of blood pressure measurements taken, accuracy of measurement and use of Korotkoff sounds. The use of non-pharmacological measures is likely to be an over-estimate since the questionnaire specifically enquired about this area. In the Leicester study where use of non-pharmacological therapy was not specifically questioned only 17% general practitioners stated that they would use non-pharmacological interventions as a first line therapy [6]. Studies comparing stated and actual management of hypertension in the elderly would be of interest, as assessments of practice using a postal questionnaire may be an inaccurate method of assessing variability in practice.

The medical profession has failed to develop an effective strategy to improve detection and treatment of hypertension at a community level, although individual practitioners have demonstrated that improved detection and control of hypertension can be achieved even in socially deprived communities [21]. A failure of current guidelines to address prescribers' concerns and a lack of involvement of target clinicians in the development of guidelines could be factors responsible for this problem [22]. The results of this and other surveys suggest that developing and publishing national guidelines will not on their own be effective in altering clinicians' practice. The reasons for the differences that exist between clinicians in their stated approach to managing hypertension need to be determined if a more consistent approach to the management of hypertension in the elderly is to take place throughout the community.

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