SHORT REPORT

Management of older patients with hypertension in primary care: improvement on the rule of halves

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Abstract

Objectives: the benefits of treatment of hypertension in older people are well-established but implementation of this knowledge may be sub-optimal. We have determined recent primary care management of older people with hypertension.

Methods: we examined health records (n = 6986) of a 1 in 7 sample of patients aged 65–80 years from a random sample of practices (n = 51) in the former Northern Region of the UK, stratified by health authority, for the previous 6 years. We recorded documented risk factors, diagnosis of hypertension, three most recent blood pressure readings, current drug therapy and previous blood pressure lowering therapy, and presence of coexistent pathology.

Results: blood pressure was defined as hypertensive (>160/>90 mmHg; one or both values above these limits), normotensive or undetermined using a validated algorithm. In 30% of patients, blood pressure status was undetermined. Thirty-five percent of subjects were found to be hypertensive. Of these, 70% were receiving antihypertensive treatment but only 30% of treated patients had controlled (<150 and 90 mmHg) and 13% well controlled (<140 and 85 mmHg) blood pressure. In all, 14% of older hypertensive patients were detected, treated and had their hypertension controlled. There were significant differences between practices in the proportion of hypertensive patients treated (P < 0.001) and in the proportion of hypertensive patients whose blood pressure was controlled (P < 0.01).

Conclusions: treatment of hypertension in older people in primary care has improved in terms of detection and treatment but in only one-third of patients is high blood pressure controlled. There remain important opportunities for prevention of stroke and myocardial infarction in this age group through achieving improved blood pressure control.

Keywords: audit, blood pressure measurement, hypertension, primary care

Introduction

Hypertension is associated with substantial mortality and morbidity in older people, with stroke being the major cause of disability in this age group in most industrialized countries. Case recognition and effective management of hypertension has become an important aim in the 65–80-year-old population, which has a low level of pre-existing disability, a high prevalence of hypertension, an appreciable annual incidence of stroke (about 1%) and clear evidence of treatment benefit [1].

The Health Survey for England 1994 [2] confirmed that the ‘rule of halves’, first described in the United States in relation to middle-aged hypertensive subjects [3], still applied. (Only half of older patients had their blood pressure status determined and only half of those who were hypertensive were being treated.) We determined the detection, treatment and control of hypertension in older people (65–80 years) in practices in the former Northern Region.

Methods

We randomly selected practices in each of the nine district health authorities of the former Northern
Region and invited them to participate in the study. We aimed to recruit six practices in each district.

A single data collector examined the health records over the last 6 years (since the recommendations are for blood pressure measurement every 5 years) of a 1 in 7 sample of 65–80-year-olds in each practice during the period January 1995–January 1996. The following information was recorded: date of birth, date and measurements of blood pressure readings in the last 6 years (the most recent, up to a maximum of three), diagnosis of hypertension, current drug therapy, previous antihypertensive therapy in the last 6 years and the presence of the following coexisting pathology: target organ damage (indicated by angina/ischaemic heart disease, heart failure, stroke/transient ischaemic attack, peripheral vascular disease or renal failure), chronic obstructive airways disease, atrial fibrillation, oedema and diabetes mellitus.

Blood pressure status was defined as normotensive, hypertensive or undetermined. We used an average of three blood pressure readings of \( \geq 160/90 \) mmHg (one or both values above these limits) as the threshold for definition of hypertension. We defined subjects as hypertensive if they had an average blood pressure at or above this threshold or an average blood pressure of \(< 160/90 \) mmHg but were taking antihypertensive medication without a separate indication and were not recorded to be hypertensive in the notes. We defined subjects as undetermined if they had no blood pressure readings in the last 6 years or had 1–2 elevated blood pressure readings and were not taking antihypertensive medication. We considered all other subjects to be normotensive.

Treatment of hypertensive patients was defined as recorded prescription of antihypertensive medication. Non-pharmacological management and/or advice was not considered to be treatment. We defined control as an average blood pressure of \(< 150/90 \) mmHg, the audit standard recommended in the most recently published British Hypertension Society guidelines [4]. Analysis was also undertaken for recommended optimal control (\(< 140/85 \) mmHg). Categorization was performed using a computer-based algorithm, which was validated previously to have a sensitivity of 98% and specificity of 88% [5].

Statistical analysis using \( \chi^2 \) tests was performed using SPSS (Statistical Package for Social Sciences).

**Results**

A total of 6986 patient records were reviewed in 51 out of the 487 primary care practices in the Northern Region. Fifty-seven (45%) of the 126 practices approached agreed to participate in the study. Median practice size was four partners (range 1–8). The median number of records reviewed per practice was 128 (22–315).

Figure 1 shows the blood pressure status of all subjects. Briefly, 34.9% of all subjects were normotensive (and not taking blood pressure lowering therapy for hypertension) and 35.4% were hypertensive, while the blood pressure status of the remaining 29.7% was undetermined (20% had no blood pressure readings, 10% had only one or two elevated readings during the last 6 years). Of those patients identified as hypertensive, 30.2% were untreated, while in only 30.0% of treated patients was the hypertension controlled (\(< 150/90 \) mmHg) and in only 13.5% was it well controlled (\(< 140/85 \) mmHg).

More hypertensive patients with target organ damage (864 of 2470 hypertensive subjects) were receiving treatment than those without (80 versus 64%, \( P < 0.01 \)) and blood pressure control was slightly better in this group (blood pressure \(< 150/90 \) in 33 and 27% subjects, \( P < 0.01 \)). The presence of diabetes mellitus was not associated with higher treatment rates or improved control (70% treatment rate in patients with and without diabetes, blood pressure \(< 150/90 \), 29 versus 33%, \( P = 0.42 \)).

In order to estimate the proportion of patients detected, treated and with their hypertension controlled in the whole sample, it was assumed that the prevalence of hypertension in the undetermined group was the same as that in the group of patients whose blood pressure status could be determined (prevalence 50.3%). On this basis, the actual number of hypertensive patients was
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3515 out of the total sample of 6986. Our estimate of the proportion of hypertensive patients detected, treated and controlled (< 150/< 90 mmHg) is 14% (505/3515). The 1999 British Hypertension Society guidelines also advise that treatment for older patients with systolic blood pressure of 140–159 mmHg should be considered. Of those patients categorized as normotensive (blood pressure < 160/< 90 mmHg) in our study, a further 1265 (18% of total sample) fell into this category.

The percentage of patients whose blood pressure was undetermined differed between health authorities (range 22–41%, P < 0.001). There was no significant difference between health authorities in the percentage of hypertensive subjects on treatment (66–74%, P = 0.42), or in the proportion of patients on treatment whose hypertension was controlled (25–34%, P = 0.80). However, significant variation was found between practices in the proportion of hypertensive patients treated (P < 0.001) and in the proportion of treated patients whose hypertension was controlled (P < 0.01).

Discussion

In this study we found that the current management of hypertension in older patients has improved on the rule of halves in terms of detection and treatment. Two-thirds of older patients had their blood pressure status determined and two-thirds of hypertensive subjects were being treated. However, very few treated patients (less than 1 in 8) have their blood pressures well controlled (< 140/85 mmHg).

These findings show an improvement compared with the results of the Northamptonshire study [6] (data collected in 1993) and are similar to those of a recent study of treatment of hypertension in older subjects in Merseyside [7] (data from 1995). The Merseyside study differs in not using a validated algorithm to define hypertension and in including subjects aged 80 years and above, which may partly account for the difference in control rate. We also found considerable variation between practices in the numbers of older hypertensive patients who were treated and had their hypertension controlled.

Doctors’ negative attitudes may be a major factor contributing to sub-optimal management of older people. An attitudinal questionnaire survey of general practitioners and hospital doctors in the Northern Region at the same time as this study [8] showed that many factors appear to contribute to doctors’ reluctance to treat and control hypertension in older people. These factors include fear of adverse effects and lack of appreciation of both the risks of untreated ‘mild’ hypertension in this age group and the appreciable life expectancy of people aged 65–75 years.

How can treatment of older patients with hypertension be improved in primary care? Current guidelines, although better than earlier versions, are arguably too imprecise and vague [9]. Successful strategies to implement guidelines are also required, particularly now that treatment of hypertension is more complex, involving the assessment of other risk factors. Audit may be the most powerful tool for change. Feedback of individual practice performance and data on individual patients could facilitate change. Since the major problem is now inadequate control, explicit setting of target blood pressures in individual patients, and recording of target on blood pressure record cards could help focus both general practitioners and patients on this aspect of management [10].

This study demonstrates that there are substantial opportunities for the prevention of stroke and myocardial infarction in older people in the UK through better treatment of hypertension. The development of successful implementation strategies targeted at both patients and doctors is urgently needed.

Key points

- Detection and treatment of hypertension in older people in primary care has improved but very few patients have their blood pressure well controlled.
- Significant variation was found between practices in the proportion of hypertensive patients treated and the proportion of treated patients controlled.
- Substantial opportunities for the prevention of stroke and myocardial infarction in older people remain.

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References


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