Hypertension in Ireland: public awareness and doctors choice of therapy

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Abstract

Background Hypertension is the commonest medical condition in Ireland.
Aims (1) To examine the level of awareness of blood pressure (BP) in the population and (2) to ascertain the opinion of general practitioners (GPs) in diagnosis and management of hypertension.
Methods BP measurements and assessment of BP awareness were performed in a sub-sample of the general population (n = 1,071). The opinion of GPs (n = 1,037) on hypertension was determined in a postal survey.
Results Amongst the population sampled (45 ± 13 years, mean age ± SD), almost half had elevated BP (>140/90 mmHg) but only half of those were already on antihypertensives. 40% had no knowledge of their BP and 54% were not aware of what constituted normal BP. While some 80% of GPs said they followed British guidelines, their practice was more in keeping with the European guidelines. Approximately, 90% of GPs required ambulatory BP recording to confirm diagnosis of hypertension. First choice antihypertensive agents were ACE inhibitors and angiotensin receptor antagonists in younger patients and diuretics and ACE inhibitors in older patients.
Conclusion These results suggest that there is a need for further public education on BP and nationally agreed hypertension guidelines.

Keywords Hypertension · Blood pressure · Population screening · General practitioners · Guidelines · Antihypertensives

Introduction

Hypertension is the single most important risk factor for stroke and myocardial infarction in both developed and developing countries [1, 2]. There is abundant evidence that optimal control of blood pressure (BP) significantly reduces deaths from myocardial infarction and stroke [3]. However, hypertension is usually asymptomatic and thus poses a challenge for diagnosis and management. There are over 150 antihypertensive preparations on the Irish pharmaceutical market [4]. In the absence of a specific Irish guideline, practitioners may adopt either the British or European Hypertension Guidelines. There are, however, fundamental differences in the recommendations in each of these guidelines with regard to the diagnosis of hypertension, the threshold for initiation of drug therapy and in particular the choice of agent [5, 6]. Little information is known with regard to the views of Irish general practitioners (GPs) on these issues.

We conducted two surveys to further increase our knowledge on hypertension in Ireland. One study was conducted in a sample of the general population to determine their casual BP and participant’s awareness of BP including knowledge of normal BP. The second survey was conducted amongst GPs to ascertain which guidelines they follow in managing hypertension, their use of ambulatory BP recording and their choice of particular drug categories in different hypertensive populations.
Methods

Population BP Study

1,071 individuals (45 ± 15.3 years, mean age ± SD, 66% female) were sampled from a shopping centre in Dublin (n = 225) and visitors attending St James’s Hospital, Dublin (n = 846). Volunteers completed a questionnaire and had their BP measured in sitting position by a validated automated, oscillometric sphygmomanometer [Omron 705] [7]. The questionnaire included age, smoking status, knowledge of own BP, treatment status and awareness of normal BP. The BP was taken by trained clinical year 4/5 medical students.

General practitioners survey on hypertension

The opinion of GPs was determined in an Intercontinental Marketing Services (IMS) postal survey which was sent to 1,094 GPs of whom 1,037 completed the questionnaire. The GPs were chosen as representative of Irish general practice. The questionnaire on hypertension included choice of guidelines, use of ambulatory BP recording, choice of treatments in uncomplicated essential hypertension, important reasons for choosing an agent, estimates of patients on multiple antihypertensive therapies and estimates of compliance in patients.

Statistical analysis

Analysis was carried out using the SAS statistical software package version 9.1 (SAS Institute Inc., Cary, NC, USA). Adjusted odds ratio (OR) with 95% confidence interval (CI) were calculated using logistic regression in determining the odds of high BP according to participant characteristics. Results are expressed as frequency and percentages, means with standard deviations and OR and 95% CI. Significance at P < 0.05 was assumed.

Results

Population BP Study

The population was representative of younger adults and middle-aged people with approximately 20% under 30 years old and 20% in each subsequent decade to 60 years old and 20% were older than 60 years old. One quarter of participants were smokers. The percentage of smokers was highest in the below 40 years old age group. Table 1 shows the characteristics of participants in this study and their views regarding BP according to age groups. Some 40% did not know their own BP, 36% knew their own BP to be normal and the rest knew that their BP was elevated. Furthermore, less than half of those with elevated BP were on antihypertensive medication. Only 40% of the population knew what constituted a normal level of BP (<140/90 mmHg) and 65% of participants from the over 60 year age group had no knowledge of normal BP.

Overall, the mean SBP/DBP was 134 ± 21/85 ± 13 mmHg (mean ± SD) and of the population some 47% were hypertensive according to the European Society of Hypertension (ESH) guidelines, the majority with grade 1 hypertension (140–159/90–99 mmHg). A normal BP was more common in younger individuals. 53% of males and 43% of females were found to have elevated BP with 13% of participants had isolated systolic hypertension. 68% of those who knew that their BP was high and 64% of those receiving antihypertensive therapy had elevated BP (>140/90 mmHg). Amongst those who were not aware of their own BP and those people without knowledge of what constitutes normal BP, 41% and 58% were found to have high BP, respectively.

The adjusted OR for high BP in those who knew they were hypertensive compared to those who did not know was OR = 2.8 (95% CI 2.1–3.94, P < 0.01) and those who were aware of their own BP compared to those who were not aware was OR = 1.56 (95% CI 1.21–2.02, P < 0.01). No significant differences in BP were found between those recruited from the shopping centre and those recruited from the hospital.

General practitioners survey on hypertension

In response to a question on the choice of guidelines amongst GPs in Ireland, 80% indicated British, 17% European and 3% other. 90% of GPs either perform or arrange an ambulatory 24 h BP recording to confirm the diagnosis of hypertension prior to initiation of therapy. Some 40% of GPs estimated that they had more than 200 patients being treated for hypertension in their practise and the remainder had lesser numbers. In addition, they estimated that over 90% of their patients were receiving more than one antihypertensive agent.

The first choice antihypertensive agent for uncomplicated hypertension in younger patients was reported as ACE inhibitors followed by angiotensin receptor antagonist, diuretics and beta blockers. In older patients, the first choice antihypertensive agent was reported as diuretics followed by ACE inhibitors, calcium channel blockers and angiotensin receptor antagonists. Table 2 indicates the GPs’ choice of first-line antihypertensive agent for uncomplicated essential hypertension (<160/110 mmHg) in a typical 40- and 70-year-old patients. The former question was presented for both the genders; however, as
there was no appreciable difference between drug choice between genders, the data are presented as aggregate.

Efficacy was the primary determinant of first choice of antihypertensive agents in 58% of GPs followed by guidelines (26%) and fewer side effects (9%). In making a second choice of agents, fewer side effects are the major determinant, with guidelines and costs having a lesser influence. Concerning compliance with antihypertensive therapy, GPs estimated that only 50% of patients took their medicines more than 80% of the time.

Discussion

The results of the population survey are very much in keeping with the prevalence of hypertension in Cork & Kerry survey [8] and the prevalence in Europe [9]. The Cork & Kerry study of 1,018 people estimated that up to 50% of middle-aged men and women had elevated BP and the prevalence of hypertension in Europe was estimated at 47% [8]. Since we completed our study, a recent survey conducted on behalf of the Department of Health and Children, the Survey of Lifestyle, Attitudes and Nutrition in Ireland (SLAN) on 1,207 people reported that 60% of male and 43% of female over 45 years old had elevated BP on a single examination [10]. Our study also reinforces the so-called “rule of halves”, namely less than half of those with elevated BP are receiving treatment and less than half of those who are receiving treatment have BP controlled [11, 12]. There is the caveat with our study that only single measurement of BP was used and the diagnosis of hypertension requires three measurements [8, 10]. While it is accepted that ours is not a representative population the prevalence is in keeping with the other studies suggesting this is a valuable population to study.

This study also confirms the Irish Heart Foundation Lansdowne Market Research findings suggesting that only half of the population knows what constitutes elevated BP [13]. These studies in Ireland strengthen the need to have additional public health education with regard to what is elevated BP and the need to have BP measured. The opportunistic measurement of BP may detect asymptomatic individuals with high BP and thus early lifestyle intervention or medications can be advocated to prevent cardiovascular complications. The British guideline recommends routine measurement of BP every 5 years while the US taskforce on screening recommends screening for hypertension in all adults aged 18 years and above [6, 14]. However, no such guideline exists here.

The GP survey shows that while the majority of GPs subscribed to the British guidelines this is true only in certain respects as there is a very high reliance on ambulatory BP recording. This is contrary to the British guideline and more in keeping with the European [5, 6]. The Dublin Outcome study demonstrated that use of ambulatory BP recording was more superior in predicting cardiovascular mortality compared to clinic BP measurements in both middle-aged and elderly hypertensive populations [15, 16]. This may influence the use of the ambulatory BP recording in the primary care population.
With regard to drug choice in younger people, the popularity of ACE inhibitors suggests GPs are in keeping with the British guidelines but the high use of angiotensin receptor antagonist is not favoured by the same guideline [6]. In contrast, the European guidelines offer a choice of all major drug groups and the frequent use of ACE inhibitors in the elderly and angiotensin receptor antagonists in general suggests Irish practitioners are more European when it comes to drug choice [5]. A recent study showed a fivefold increase in angiotensin receptor antagonists prescribing from year 2000 to 2005 reflecting GP’s preference for these relatively new agents in Ireland [17]. Of some concern is the failure to differentiate between women and men under the age of 40 with regard to use of ACE inhibitors and angiotensin receptor antagonists as these agents have considerable potential for teratogenicity [18, 19]. However, the data with regard to their use and contraindication in the first trimester have only recently emerged [9, 18] and previously it was suggested that these agents were acceptable in the first trimester. Clearly, there needs to be greater awareness with regard to the hazards of these agents in women of child bearing age.

Beta blockers have fallen out of favour as GP’s choice of antihypertensive agent; in contrast they constituted the most frequently prescribed new antihypertensive agent in 2000–2005 in Ireland [17]. This rapid decline reflects the Joint British and NICE guidelines for uncomplicated hypertension advocating the use of ACE inhibitors (or angiotensin receptor antagonist if ACE poorly tolerated) in younger patients and calcium channel blockers and diuretics for older patients as first-line treatment compared to previous recommendations which included beta blockers [20]. Atenolol in particular has been found to be less effective in preventing stroke and cardiovascular events compared to other agents and is associated with increased risk of diabetes [21, 22].

Most patients in primary care receive multiple antihypertensive therapies in order to achieve target BP [5]. Combination of antihypertensive agents has been shown to produce better results in terms of clinical end points associated with hypertension compared to use of single agents [2, 23]. In addition, fixed dose combination agents are now widely available to overcome the problem of compliance associated with multiple therapies and are well tolerated [24, 25]. Preliminary result of fixed low dose combination of four of the major classes of antihypertensive also showed that the combination agent is more efficacious than monotherapy [26]. GPs are aware of this situation and estimate that some 90% of patients will require multiple agents to achieve BP control.

It is interesting that in the choice of first agents, efficacy is ranked highest, considered above adherence with guidelines. However, in subsequent choices, avoidance of adverse effects seemed to be more important which may suggest one reason for switching therapy was the presence of adverse effects. European guidelines emphasized the importance of paying attention to adverse side effects as experienced by patients as this is associated with poor compliance to treatments [5]. This may be one reason for the popularity of angiotensin receptor antagonists. The data with regard to compliance suggest that GPs have a realistic expectation that approximately half of their patients will not regularly be compliant accepting that greater than 80% medicine intake is regarded as “good” compliance. Poor adherence to antihypertensive medications is a major factor associated with poor control of BP [27–30]. Thus, patient education on the importance of compliance should be emphasized in order to achieve better control of hypertension in the population.

Conclusion

Awareness of BP is still lacking in the Irish population. The estimate of hypertension in this study at almost 50% is similar to other recent studies. Management of such at-risk populations is essential for a further decline in cardiovascular morbidity and mortality. The disparity between practitioners advocating British guidelines but their practice more in keeping with European guidelines suggests a need for a national guideline.

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References


