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Antihypertensive prescribing

A survey of general practice supervisors and registrars

Background
Hypertension is a common problem in general practice. Prescribing guidelines vary, but generally favour thiazide diuretics as first line treatment for uncomplicated essential hypertension. This study looks at antihypertensive prescribing habits of primary care practitioners and their knowledge of prescribing guideline recommendations.

Methods
General practitioner supervisors and registrars from the Sydney Institute of General Practice Education and Training completed an online survey between April and July 2007. In response to a clinical vignette, participants indicated which agent they would use as first line therapy. In addition, they described what they knew about existing prescribing guidelines for essential hypertension.

Results
One hundred and thirty-eight surveys were sent and 31 were returned completed. Angiotensin converting enzyme inhibitors were favoured as first line agents. Most believed current guidelines recommend more than one class of antihypertensive agent as appropriate for the initiation of single agent therapy. Angiotensin converting enzyme inhibitors were nominated most often as first line treatments recommended by guidelines.

Discussion
The study is limited by a small sample size, a low response rate and the fact that participants all came from a similar location. Prescribing habits in the study group were not consistent with two out of three Australian guidelines on management of hypertension. Further research may allow generalisation to the wider Australian general practice community and indicate underlying reasons for this inconsistency. Hypertension management is an important educational topic for general practice registrars and GPs.

Hypertension is a common problem in general practice. Data from the 2002–2003 study of general practice activity in Australia showed that hypertension was the most common problem managed by general practitioners.[1] The disease process has significant individual and public health consequences, however it appears that the condition remains undertreated. The Australian Diabetes, Obesity and Lifestyle (AusDiab) study found that more than 75% of study participants with untreated hypertension had had their blood pressure checked in the 12 months before being surveyed.[2]

Reasons for undertreatment of hypertension are likely to be multifactorial. One contributor may be a lack of clarity and consistency in consensus evidence based treatment guidelines on the choice of first line agents in those without other risk factors.

What should the Australian GP or general practice registrar do when confronted with a hypertensive patient whose blood pressure remains elevated despite lifestyle measures? This question was raised in discussion with other general practice registrars and provided the impetus for this study.

The aim of this project was to survey general practice registrars and supervisors about prescribing habits in uncomplicated hypertension and whether their choices conformed to guideline recommendations. Nelson and colleagues[3] conducted a similar study in 1999. Other researchers have investigated overseas practitioners antihypertensive prescribing patterns using either individual surveys[4–6] or large database information.[7–9] However, only Nelson and colleagues examined the opinions of individual Australian practitioners.[3]

Recommendations on blood pressure management from Australian and international expert groups[10–12] have changed significantly since 1999 in response to evidence. Numerous studies comparing blood pressure lowering drugs have been undertaken, and the Blood Pressure Lowering Trialists' Collaboration have conducted two large meta-analyses of antihypertensive agents.[13,14] This survey was designed to examine whether prescribing habits have changed in

response to the new evidence and updated guidelines. The author obtained permission from Nelson to use the same survey used in the 1999 study.[3] The survey has undergone some limited validity testing and its use allows comparison with the 1999 study.

What do the guidelines say?

The 2004 National Heart Foundation guidelines did not make a specific recommendation as to first line therapy in hypertension, instead suggesting that treatment be initiated with medications from any of the five major classes of antihypertensives. These guidelines combine dihydropyridine and nondihydropyridine calcium channel blockers as 'calcium channel blockers'.[10]

The 2008 National Heart Foundation guidelines no longer recommend beta blockers as first line agents in the management of hypertension.[15] This is partly in response to two recent meta-analyses suggesting increased risk of stroke associated with their use.[16,17]

Both the 2003 World Health Organization (WHO)/International Society of Hypertension (ISH) statement on management of hypertension[11] and the seventh report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure[12] support the use of thiazide diuretics for the initiation of therapy in those without compelling indication for a particular drug class. The use of thiazides was supported in a 2005 Australian review looking at first line medicines in the treatment of hypertension,[18] by the 2003 Cardiovascular Therapeutic Guidelines[19] and by the National Prescribing Service.[20]

The 2006 British National Institute for Health and Clinical Excellence (NICE) and British Hypertension Society guidelines[21–23] expanded the treatment algorithm by stratifying patients by age and ethnicity. Treatment recommendations are based on these characteristics; the guidelines recommend an angiotensin converting enzyme inhibitor (ACEI)/angiotension blocker or possibly a beta blocker (BB) for nonblack patients and patients aged less than 55 years, and a calcium channel blocker or diuretic for black patients and patients aged over 55 years. These guidelines also considered accumulating evidence that regimens involving BBs were associated with a greater number of cases of new onset diabetes.

Methods

All general practice supervisors and registrars involved with the Sydney Institute of General Practice Education and Training (SIGPET) consortium had the opportunity to access an electronic survey between April and July 2007. This was a convenience sample; the researcher had access to the population through training links. In addition, surveying both registrars and supervisors allowed for recruitment of respondents of varying age, experience and skills. Comparison of the respondents to the Australian GP community was undertaken using workforce data from the Bettering the Evaluation and Care of Health (BEACH) study.[24]

Respondents were asked for demographic data including gender, employment status and whether they were a supervisor or a registrar. They were then provided with a scenario involving an otherwise well male, aged 50 years with persistent hypertension who had not responded to lifestyle advice. Respondents were asked to consider which class of agent they would use to start monotherapy in this situation. In addition they were asked which of the major classes of antihypertensives (*Table 1*) they believed were recommended for uncomplicated essential hypertension.

Results

Access to the online survey was available to 138 individuals; 31 surveys were completed (response rate 22%). Of the 31 respondents, all were vocationally registered, 61% were women, 74% worked full time, 52% were supervisors and 48% were registrars. When respondent characteristics were compared with Australian workforce data for the period 1991–2003[24] the proportion working full time were similar but there were proportionally more women and vocationally registered practitioners in the current sample. The small sample in this study prevented meaningful statistical analysis, therefore only descriptive data is presented.

Response to the fictional clinical vignette

Four of the six classes of antihypertensives were chosen as first line monotherapy in response to the clinical vignette. Angiotensin converting enzyme inhibitors were most favoured, with 68% of total respondents ranking them as first choice. Diuretics and angiotensin II antagonists (A2RA) were the next most popular, with 13% of respondents choosing these therapies respectively. Nondihydropyrodine calcium channel blockers (NDCCB) were the least favoured, with 68% of total respondents ranking them as their last preference.

Guideline recommended first line monotherapy agent

The majority of respondents believed the current guidelines recommend more than one class of antihypertensive agent as appropriate for the initiation of single agent therapy. Nineteen percent of respondents believed treatment should be initiated with a single class, the majority (five of six) choosing diuretics.

Angiotensin converting enzyme inhibitors were nominated most often as recommended first line treatment agents, with 84% choosing them either on their own or in a list with other antihypertensives. Diuretics were nominated by 74% of respondents, two of the 31

Table 1. Major classes of antihypertensives

- Angiotensin converting enzyme inhibitors
- Angiotensin II antagonists
- Diuretics
- Beta blockers
- Dihydropyrodine calcium channel blockers
- Nondihydropyrodine calcium channel blockers

respondents nominated all six drug classes as being recommended first line therapy, and three reported they didn't know.

Discussion

The results of this small survey are similar to those previously reported by Nelson and colleagues,[3] with ACEI the most popular choice in a scenario involving uncomplicated essential hypertension.

When the Australian Cardiovascular Therapeutic Guidelines[19] and National Prescribing Service[20] guidelines are considered, only the 13% of respondents who chose thiazides as first line monotherapy for a well male, aged 50 years with uncomplicated hypertension chose correctly. The 2004 National Heart Foundation guidelines recommend that treatment could be initiated with any of the major classes of antihypertensives;[10] comparing aginst these guidelines, 100% of respondents chose correctly. Comparison was not made to the 2008 National Heart Foundation guidelines as these were not available in 2007 when the survey was undertaken.

This variation between guidelines highlights the difficulties faced by GPs in implementing evidence based best practice and suggests that uniformity between guidelines should be a goal for the relevant bodies.

Limitations of this study

This study is limited by a small sample size and the fact that participants all came from a similar location. Statistical analysis was not performed, making extrapolation to the wider GP community problematic. The low response rate may also be a source of bias. Respondents may have represented a group within the survey group who had a particular interest in hypertension.

However, this study is important because it looks at antihypertensive prescribing by Australian GPs – a topic not often presented in the literature. The focus is on a disease process with high prevalence and significant public health consequences. This study highlights an area for further discussion and research on a larger scale. Hypertension management is an important educational topic for general practice registrars and GPs. Perhaps antihypertensive prescribing in particular is an area which requires designated teaching time in continuing medical education and registrar educational activities.

Conflict of interest: none declared.

Acknowledgments

Thanks to Dr Jeremy Bunker and SIGPET for assistance with the survey, and Professor Mark Nelson for permission to use the survey.

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