

Should we screen for hypertension in general dental practice?

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IN BRIEF

- Raises awareness of the prevalence of undiagnosed and/or poorly controlled hypertension.
- The results of the survey show that there is no correlation between elevated blood pressure and anxiety.
- Suggests that dentists in practice may be useful in identifying patients with elevated blood pressure who would benefit from further investigation.

Hypertension is reported by the World Health Organisation as one of the most important causes of premature morbidity and mortality, although it is often asymptomatic. Approximately 40% of the UK population are thought to be affected, however, only one third of these are currently detected. Dental practice offers an ideal opportunity to screen for hypertension, due to the large cohort of the general population who regularly attend. A pilot study was carried out to screen for hypertension and associated risk factors in 114 consecutive patients who attended a city general dental practice. Results revealed that 39% (44) of the population screened had a high blood pressure reading but only 18% (8) of these were previously diagnosed as hypertensive, and 16% (7) had systolic readings greater than 160 mmHg. Of those currently receiving treatment for hypertension, the blood pressure was still elevated in 63% (5). This suggests that screening for hypertension in general dental practice may be of benefit to the population at large.

INTRODUCTION

Hypertension is defined as persistently raised blood pressure greater than 140/90 mmHg and is a major but modifiable contributory factor in cardiovascular diseases (CVD) such as stroke (CVA) and coronary heart disease (CHD),¹ leading to premature morbidity and mortality.² The exact prevalence of hypertension in the UK population is unknown but is thought to be as high as 40% with a third receiving treatment and third of those being controlled.³ These figures indicate that the current screening and treatment programmes are not effective in the management of hypertension for the majority of the affected population. The incidence of hypertension among dental patients has been reported to be as high as 32%.¹⁷ The adult dental health survey in 1998 reported that 59% of the population attend for a regular dental check-up⁵ and would thus be available for screening.

We carried out a preliminary survey of the prevalence of high blood pressure in patients attending a city dental practice to determine if screening this population would offer any health benefit.

MATERIALS AND METHODS

Over a period of three days all patients over the age of 18 were offered the opportunity to have their blood pressure recorded before treatment or check up with the dentist. They were also requested to complete a Corah's Dental Anxiety Scale (DAS)¹⁴ to determine if their perceived level of anxiety affected the blood pressure recorded. One measurement was taken using an automated sphygmomanometer (Phillips M3046A M3) with the correct cuff size for each patient. Patients with readings greater than 140/90 mmHg were advised to contact their doctor for further investigation.

RESULTS

See Figures 1 to 3. The total number of patients screened was 114 with an average age of 41.2 years. Thirty-eight percent were male and 62% female. Forty-four (39%) patients were found to have either a systolic reading greater than 140 mmHg or a diastolic reading greater than 90 mmHg or both. Eight (7%) patients were known hypertensive, taking regular medication

and five (63%) still had elevated blood pressure readings. Seven (5%) patients had readings greater than 160/110. Seventeen (39%) patients had a DAS score >9 and elevated blood pressure. There was no correlation between the DAS score and blood pressure elevation.

DISCUSSION

The study revealed that a significant number of the patients had elevated blood pressure readings before either dental treatment or check up and that many patients already on treatment for hypertension appeared to be inadequately controlled. This confirms results from studies carried out in a dental school patient population¹² and a Hungarian study of patients in dental practice.¹³

There is currently a lack of perceived need among dental practitioners to routinely measure blood pressure or to give health and lifestyle advice to patients with regard to vascular risk factors. Many practitioners do not feel that this is a role that dentists should undertake and it may provoke hostility from patients who are not used to receiving this type of advice from their dentist.¹⁶ Hypertensive patients have an increased risk of acute complications during dental treatment as result of anxiety related elevation in blood pressure

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and an increased incidence of associated cardiovascular pathology eg angina or previous myocardial infarct. Many anti-hypertensive medications also have oral side effects or may interact with medicine prescribed during a course of dental treatment.¹⁰ The incidence of acute cardiovascular complications as a result of dental treatment is very low¹⁵ despite the prevalence of hypertension in the general population and this is a testament to the safety of treatment, however, this does not imply that dentists should be complacent, as deaths from cardiovascular and cerebrovascular emergencies do occur in dental practice.

Currently dentists are only required to measure a patient's blood pressure before administering intravenous sedation,⁹ a procedure which has been shown to reduce blood pressure. As healthcare providers all dentists are trained to take blood pressure and educated as to the causes, consequences and treatment of hypertension during their undergraduate courses. However, little emphasis appears to be placed on health promotion and screening for systemic diseases. A study of dental practitioners showed that 85.3% thought that education about hypertension would be valuable, 82.1% possess equipment for measuring blood pressure, however only 4.8% actually routinely measure it.¹¹

The Department of Health stipulated in the 2004 White Paper that all NHS staff should give appropriate advice on basic health and lifestyle issues, promoting physical and mental wellbeing.⁴ This includes information on smoking, alcohol, diet, exercise and hypertension.

Screening for hypertension is not covered in the NICE 2006 guidelines for management of hypertension in adults in primary care.¹ However, the British Hypertension Society (BHS) has suggested future guidelines should include an increase in the detection and treatment of undiagnosed hypertension by routine screening and increase awareness of hypertension among the public. They also indicate a need for an extended role for nurse practitioners, pharmacists and other health care professionals, to provide the foundation for more widespread and effective detection, monitoring and treatment of blood pressure and CVD risk.⁷ The US guidelines support this

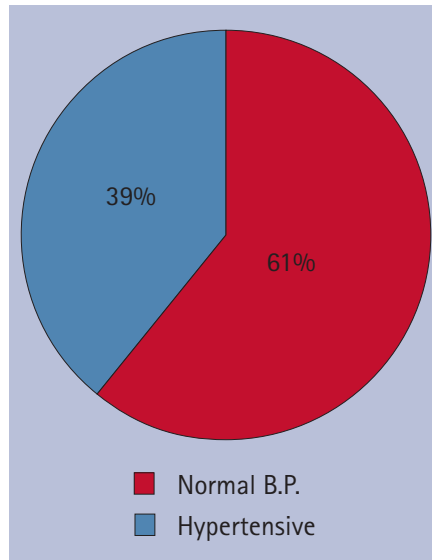


Fig. 1 Percentage of patients with high blood pressure reading in sample observed

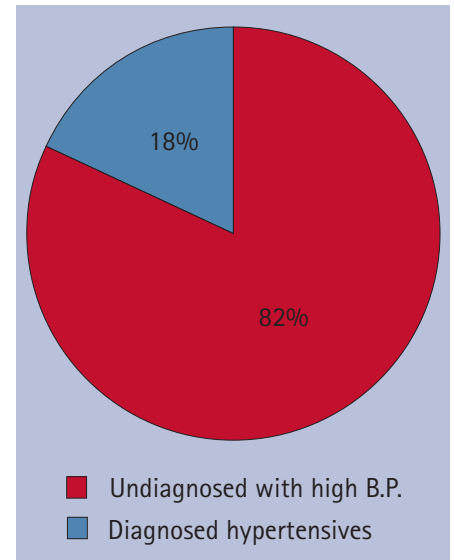


Fig. 2 Percentage of patients with high blood pressure

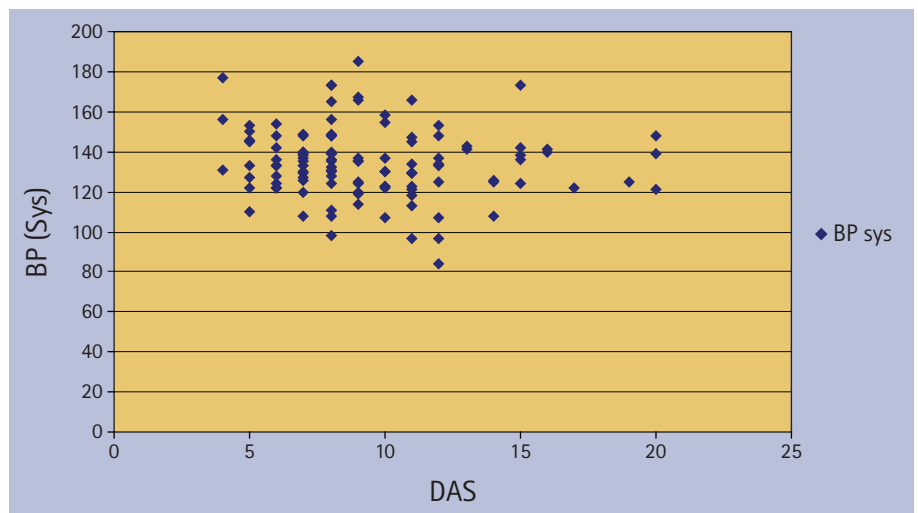


Fig. 3 Scatter graph showing systolic blood pressure v DAS

suggestion and indicate blood pressure screening for any patient over 18 years of age in the health care system at every health care encounter.⁸ The implementation of screening in dental practice would help to increase detection rates, as over 50% of the population attend for dental treatment or check up every year⁵ and many patients who attend are undiagnosed hypertensives.^{12,13}

The current barriers to screening for hypertension in dental practice include:

1. Lack of perceived need to routinely measure the patient's blood pressure
2. Unclear government guidelines with regard to screening and dentistry
3. Time constraints in practice to carry out the procedure
4. Lack of remuneration for equipment needed and time required

5. Validity of readings due to the 'white coat effect'.

These issues could be tackled by improved training and education with more emphasis on the importance of health and lifestyle advice. The necessary funding would have to be included in dental remuneration in much the same way as it is for general medical practitioners.

The incidence of 'White coat hypertension' is reported to be 9%.¹⁵

In our population there was no correlation between the patient's anxiety, as measured by the DAS score, and the blood pressure recorded. This would suggest that there is a limited white coat effect.

From a dental treatment perspective, there is no simple answer to the problem posed by patients with elevated BP needing

urgent dental care, such as an extraction. There are no professionally recognised criteria based on BP values to indicate when it is safe to proceed. Elevation of SBP higher than 180 mmHg or DBP higher than 110 mmHg is used by many dental clinicians as a cutoff point for offering urgent treatment without medical consultation and referral. It would also be sensible to delay routine treatment in patients whose SBP is higher than 160 mmHg or DBP higher than 110 mmHg. Pending clear guidelines from research or professional consensus, this appears to be sound advice.

CONCLUSION

It appears that hypertension is currently under-diagnosed in the UK population and inadequately treated in many of those detected; there are no clear guidelines as to when it is safe to proceed with dental treatment in hypertensive patients or

if there is a health benefit in screening for hypertension in dental practice. This study has revealed that a significant proportion of patients attending for routine dental care have elevated blood pressure readings which do not correlate with anxiety scores and would benefit from further investigation.

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