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Review

Executive summary

Detection, adherence and control of hypertension for the prevention of stroke: a systematic review

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Executive summary

Objectives

The objectives were to find out the most effective methods of:

- detecting hypertension
- improving patient adherence with treatment
- improving control of blood pressure
- improving professional compliance with standards of good practice.

Methods

The evidence was reviewed using systematic review methods of material published between 1966 and July 1996. The quality was assessed using a comprehensive assessment schedule. All articles abstracted were assessed by two readers independently. In studies where blood pressures were used as outcomes, net blood pressure changes were calculated.

Results

Detection

Population screening when compared with usual care or case finding does not appear to increase coverage of the population assessed for hypertension or detection of people with hypertension. Screening programmes in shopping centres or housing blocks do not reach the disadvantaged groups often intended. Case finding appears to be particularly effective when linked with professional training, protocols and reminders to record blood pressure given to both patients and doctors. Labelling of hypertensive patients does not appear to have any long-term effects on sickness absence or psychological well-being provided patients are managed by high-quality, comprehensive services. Ambulatory monitoring does not have any role in the detection of hypertension in the population.

Patient adherence

No single approach to improving adherence can be recommended based on the evidence reviewed. Complex interventions involving education, easier access to care, and use of protocols may improve adherence and control in some patients. Educational interventions are unlikely to be effective on their own. While simpler drug regimens are likely to improve adherence, simple reminder packaging does not improve adherence or control.

Blood pressure control

A comprehensive 'stepped-care' approach (i.e. education, free care, specialist clinics, and protocols) achieves the greatest improvements in control. Self-monitoring of blood pressure at home appears to have a small but significant effect on blood pressure control and may be cost-saving. Patient education alone is unlikely to improve blood pressure control. Professional education may make a small contribution to blood pressure control, but is probably due to increased use of drug therapy.

Professional standards of care

The issuing and use of guidelines does not result in improvements in care. Locally, rather than expert, produced guidelines that are integrated into clinical practice improve both practice and clinical outcomes. The evidence to support nurse-led clinics is surprisingly sparse, and the only British trial found worse control in the nurse-led clinic.

Conclusions

Implications for health care

Policy and practice on high blood pressure might best be considered in conjunction with a review of all cardiovascular disease prevention advice to health authorities and general practitioners, as focusing on individual risk factors in isolation is unlikely to produce coherent proposals.

Detection

Standardisation of methods of blood pressure measurement is essential. Use of Korotkov V (disappearance of sounds) should be widely promoted in primary health care. Facilities for the routine maintenance of sphygmomanometers should be available in all health districts.

The British Hypertension Society guidelines on thresholds for starting treatment require review following publication of the New Zealand guidelines and the wider recognition of the importance

of absolute disease risk in formulating preventive health care policy.

Evidence to support detection and treatment of high blood pressure in older people is very strong. This evidence should be widely disseminated, and professional barriers to treating older people recognised as unacceptable and not consistent with best practice.

Ambulatory monitoring methods increase the cost and complexity of blood pressure detection without providing any tangible benefits, and should not be promoted in primary health care.

Blood pressure is only one of a number of powerful risk factors which predict the chances of suffering a stroke or ischaemic heart disease. Greater emphasis should be placed on examining risk factor scores (or profiles).

Adherence

Improving professional adherence to best practice in the management of high blood pressure through a range of mechanisms is required. More direct methods such as financial incentives and penalties require investigation as they may prove more effective than educational or clinical guideline approaches.

Evidence is lacking to support any specific approaches to improving patient adherence with antihypertensive drugs or lifestyle changes. Standardisation of methods of measuring and reporting on patient adherence is required. Further research on patient adherence should be linked with the associated question of improving blood pressure control.

Control

The British Hypertension Society's recommended target blood pressures which should be achieved on drug treatment need to be reviewed. Criteria should take into account co-morbidity, age and level of hypertension.

A stepped-care approach to management is supported by American randomised controlled trial evidence, but this is not directly applicable to British practice.

Evidence to support nurse-led compared with doctor-led care as a better option in achieving blood pressure control is very sparse.

Research recommendations

Little attention has been given to hypertension detection, adherence and control among the poor and ethnic minorities. Trials of specific interventions tailored to their special needs might be conducted.

Recommended research areas (in order of relative priority) are:

- A multicentre primary care randomised controlled trial comparing nurse-led management with general practitioner-led management in hypertension, including economic evaluation. Important outcomes include hypertension detection rates, professional adherence to best practice, patient adherence to treatment, and blood pressure control achieved.
- Large-scale randomised controlled trials including economic appraisal, of interventions that aim to improve patient adherence to treatments. Possible interventions that should be compared in factorial designs with usual care include educational/motivational approaches, follow-up, feedback, simplification of medication regimens. Outcomes should also include blood pressure control achieved.
- Randomised controlled trials to test the value of risk factor scores (or profiles) in giving general practitioners and nurses the information they need to reduce cardiovascular disease risk. Comparisons might include computer-aided prompts, and visual and interactive methods involving patients. Outcomes might also include actions taken and their effectiveness in reducing risk factors.
- Controlled comparisons of the effects of organisational and managerial initiatives on improving professional adherence to best practice in the management of high blood pressure compared with professional education and clinical guidelines.

Publication

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NHS R&D HTA Programme

The overall aim of the NHS R&D Health Technology Assessment (HTA) programme is to ensure that high-quality research information on the costs, effectiveness and broader impact of health technologies is produced in the most efficient way for those who use, manage and work in the NHS. Research is undertaken in those areas where the evidence will lead to the greatest benefits to patients, either through improved patient outcomes or the most efficient use of NHS resources.

The Standing Group on Health Technology advises on national priorities for health technology assessment. Six advisory panels assist the Standing Group in identifying and prioritising projects. These priorities are then considered by the HTA Commissioning Board supported by the National Coordinating Centre for HTA (NCCHTA).

This report is one of a series covering acute care, diagnostics and imaging, methodology, pharmaceuticals, population screening, and primary and community care. It was identified as a priority by the Population Screening Panel and funded as project number 93/05/02.

The views expressed in this publication are those of the authors and not necessarily those of the Standing Group, the Commissioning Board, the Panel members or the Department of Health. The editors wish to emphasise that funding and publication of this research by the NHS should not be taken as implicit support for the recommendations for policy contained herein. In particular, policy options in the area of screening will, in England, be considered by the National Screening Committee. This Committee, chaired by the Chief Medical Officer, will take into account the views expressed here, further available evidence and other relevant considerations.

Reviews in *Health Technology Assessment* are termed 'systematic' when the account of the search, appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

The editors have tried to ensure the accuracy of this report but cannot accept responsibility for any errors or omissions. They would like to thank the referees for their constructive comments on the draft document.

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