

Evidence assessment: Summary of a systematic review

Who is this summary for?

This systematic review is meant for decision makers and clinicians involved with the policies and day-to-day care of people with high blood pressure.

Interventions used to improve control of blood pressure in patients with HBP

Key findings

Health services providing care to people with high blood pressure (HBP) need to have an organized system of regular follow-up and review for patients. Antihypertensive drug therapy should be implemented by means of a vigorous stepped care approach when patients do not reach target blood pressure levels. Self-monitoring and appointment reminders may be useful adjuncts to the above strategies to improve blood pressure control but require further evaluation.

Background

HBP is an important public health problem. It is associated with stroke and other cardiovascular events. Its cause is often unknown, but it is easy to diagnose. The complications of HBP can be prevented by life style modifications and blood pressure lowering drugs (antihypertensives). There is insufficient evidence as to how services should be organized for people with HBP.

High Blood Pressure in Cameroon: In Cameroon the prevalence of HBP has increased significantly over the last two decades. In response the government has created national level prevention and control programs. Despite these efforts, HBP is still in major problem in Cameroon. The provision of services by non-physicians has been investigated with promising results, but high drop-out rates. It is unclear how services should be organised in order to improve compliance rates and ultimately blood pressure levels.

Question

What interventions improve the control of high blood pressure?

Table 1: Summary of the systematic review		
	What the review authors searched for	What the review authors found
Studies	Randomized trials of interventions that sought to evaluate different models of care for patients with HBP with the overall aim of improving blood pressure control or follow-up care of patients.	72 RCTs were identified, of which 4 were factorial design, 2 were three-armed and 14 were cluster design.
Participants	The population of interest was composed of adult patients (aged 18 years or over) with essential HBP (treated or not currently treated with blood pressure lowering drugs) in a primary care, outpatient or community setting.	Adult patients receiving treatment for HBP
Interventions	The interventions were aimed at improving control of blood pressure or clinic attendance and were classified as: (1) self-monitoring (2) educational interventions directed to the patient (3) educational interventions directed to the health professional (4) health professional (nurse or pharmacist) led care (5) organisational interventions that aimed to improve the delivery of care (6) appointment reminder systems	(1) self-monitoring (18 RCTs) (2) educational interventions directed to the patient (20 RCTs) (3) educational interventions directed to the health professional (10 RCTs) (4) health professional (nurse or pharmacist) led care (12 RCTs) (5) organisational interventions that aimed to improve the delivery of care (9 RCTs) (6) appointment reminder systems (8 RCTs)
Controls	No intervention or usual care.	Include what the intervention(s) was compared to
Outcomes	Studies were included if they reported: <ul style="list-style-type: none"> • mean systolic blood pressure (mean SBP) and/or mean diastolic blood pressure (mean DBP) • control of blood pressure (blood pressure threshold that determines “control” being pre-specified or defined by each randomized trial’s investigators) • proportion of patients followed-up at clinic 	50 studies reported mean systolic BP changes; 55 studies reported mean diastolic BP changes; 36 studies reported control of BP and 5 reported improvements in follow-up
Date of the most recent search: July 2008		
Limitations: A brief statement about the quality of the systematic review. E.g. This is a good quality systematic review with only minor limitations. Mention any limitations (if present e.g. study selection and data extraction was not done by at least two independent authors).		
Review citation: Glynn LG, Murphy AW, Smith SM, Schroeder K, Fahey T. Interventions used to improve control of blood pressure in patients with HBP. Cochrane Database of Systematic Reviews 2010, Issue 3. Art. No.: CD005182. DOI: 10.1002/14651858.CD005182.pub4		

Summary of Findings table

Patients:	Adult patients receiving treatment for HBP			
Settings:	Ambulatory			
Intervention:	Self monitoring/physician education/ Health professional leadership/ Organisational or protocol driven/ appointment reminders			
Comparison:	Usual care			
Outcomes	Mean difference or Odds ratio (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments

Self monitoring (SBP)	MD: -2.53 [-3.73, -1.34]	2492 (12 studies)	<p>????</p> <p>VERY LOW</p> <p>Serious limitations related to poor descriptions of randomization, inadequate allocation concealment, outcome assessors not blinded and large numbers of losses to follow up.</p>
Self monitoring (DBP)	MD: -1.81 [-2.39, -1.23]	2598 (14studies)	
Self monitoring (BP control)	OR: 0.97 [0.81, 1.16]	2237 (6studies)	
Patient Education (SBP)	MD: -0.57 [-1.22, 0.08]	8901 (11studies)	
Patient Education (DBP)	MD: 0.46 [0.07, 0.86]	9050 (13studies)	
Patient Education (BP control)	OR: 0.83 [0.75, 0.91]	7950 (7studies)	
Physician Education(SBP)	MD: -0.43 [-1.07, 0.22]	9998 (7studies)	
Physician Education (DBP)	MD: 0.59 [0.21, 0.96]	9998 (7studies)	
Physician Education (BP control)	OR: 0.85 [0.80, 0.90]	21144 (7studies)	
Health Professional led care(SBP)	MD: -2.52 [-3.77, -1.27]	2235 (10studies)	
Health Professional led care (DBP)	MD: -1.49 [-2.02, -0.96]	2682 (11studies)	
Health Professional led care (BP control)	OR: 0.30 [0.24, 0.38]	1506 (6studies)	
Organisational /protocol driven care(SBP)	MD: -6.00 [-8.81, -7.18]	7664 (9studies)	
Organisational /protocol driven care (DBP)	MD: -4.27 [-4.65, -3.89]	7664 (9studies)	
Organisational /protocol driven care (BP control)	OR: 0.45 [0.41, 0.48]	7664 (9studies)	
Appointment reminder(SBP)	Mean difference: 0.41 [0.32, 0.51]	787 (2 studies)	
Appointment reminder (DBP)	Mean difference: -0.53 [-2.01, 0.95]	787 (2 studies)	
Appointment reminder (BP control)	OR: 0.54 [0.41, 0.73]	787 (2 studies)	

Applicability

More than half of these studies were conducted in the USA and others in Canada, the UK, Finland, Holland, Brazil, Turkey, Spain, Australia, Mexico, Switzerland, France and Germany. These findings may not be applicable to low resource settings in Africa.

Conclusions

Family practices and community-based clinics need to have an organized system of regular follow-up and review of their hypertensive patients. Antihypertensive drug therapy should be implemented by means of a vigorous stepped care approach when patients do not reach target blood pressure levels. Self-monitoring and appointment reminders may be useful adjuncts to the above strategies to improve blood pressure control but require further evaluation.

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