Hypertension management in older patients—Are the guideline blood pressure targets appropriate?


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Hypertension management in older patients - Are the guideline blood pressure targets appropriate?

Key words

Hypertension; Blood Pressure; Ageing; Guidelines; Frailty

Key points

• Trials of blood pressure lowering in older people show treatment to be highly beneficial, reducing the risk of cardiovascular disease and stroke.

• The inclusion and exclusion criteria used in such trials often preclude patients with frailty and multimorbidity from being eligible, limiting the generalisability of the findings.

• This leads to uncertainty about how to manage such patients in routine clinical practice, as reflected in the wide variation in blood pressure targets recommended by clinical guidelines across the world.

• In routine practice, clinicians should seek to identify individuals with frailty and multimorbidity, for whom decisions on blood pressure management should be tailored to the patient’s health priorities.

• Tools now exist to support identification of frailty and multimorbidity and future research should examine how these can be used to facilitate more personalised management of hypertension in older adults.
Optimal blood pressure control in older adults has been a controversial issue for decades. Treating hypertension has led to significant reductions in cardiovascular morbidity and mortality globally[1]. Only a handful of randomised controlled trials have been conducted to assess the safety and efficacy of antihypertensive treatment and optimal treatment targets in older people, but these have had a major influence on clinical guidelines and the management of hypertension in routine clinical practice. Key studies, including The Systolic Hypertension in the Elderly Program (SHEP), the Swedish Trial in Old Patients with Hypertension (STOP-Hypertension), The Systolic Hypertension in Europe (Syst-Eur) and the Hypertension in the Very Elderly Trial (HYVET) provided compelling evidence for the treatment of hypertension in older people and have resulted in blood pressure control into older age being both accepted and expected as best practice[2]. Recommendations for specific populations are often incorporated into clinical guidelines, but there is a trade-off between keeping a guideline specific enough to apply to the patient being treated but simple enough to be translated to routine clinical care. Trial evidence that underpins guidelines may not apply to understudied groups, and some have questioned the extent to which these trials are generalizable to all older patients, including those with frailty and multimorbidity[3,4].

The challenge that clinicians face in making blood pressure treatment decisions for older people is reflected in the different interpretations of the existing evidence by experts internationally. In their paper published in Age and Ageing, Bogaerts et al.,[5] provide a systematic overview of the thresholds and targets for blood pressure management in older people in guidelines worldwide. The authors identified 42 blood pressure guidelines for primary prevention, 34 of which made recommendations for blood pressure management in ageing and/or frailty. This paper highlights a lack of concordance in recommended blood pressure targets for older people, despite being broadly based on the same evidence. Blood pressure targets recommended for older people ranged from <150mmHg (recommended by 20 guidelines for people aged 80 or older, such as the National Institute for Health and Care Excellence (NICE) guidelines) to <120mmHg (recommended by 4 guidelines including Australia and Canada), with some guidelines recommending less tight control in
older people and others recommending tighter targets for older people than the general population. Their analyses suggested that these differences were not explained by the geographical origin of the guideline, intended users (e.g. cardiologists, primary care physicians, geriatricians, etc.) or the evidence appraised and synthesised to produce each guideline[5]. The differences in interpretation of evidence can be partly be attributed to the debate around the extent to which existing trials are representative of the wider population of older adults. In particular the Systolic Blood Pressure Intervention Trial (SPRINT)[6], which was highly influential in adoption of lower blood pressure targets, as it provided evidence of a cardiovascular and mortality benefit to treating to a target of <120mmHg versus <140mmHg even in people aged over 75 and those with frailty, has been variably interpreted and endorsed by guideline committees for older people. This may be, in part, due to the composition and experiences of assembled committees.

As we see in clinical practice, variation in the health of the population increases in older age – ranging from fit, independent individuals with limited comorbidity most likely to participate in clinical trials, to severe frailty, with limitations in cognition and mobility that can be major barriers to study participation [3]. Hypertension affects over 75% of those aged over 70[7] and is more common in individuals with frailty[8]. As Bogaerts et al. state, frail older people are both at higher risk of cardiovascular outcomes and higher risk of adverse outcomes[5]. A more personalised understanding of the balance of risk for older individuals is key to improving safe clinical care. Ageing can result in impaired blood pressure homeostasis leading to increased blood pressure variability or postural hypotension [9]. The potential risk of hypotensive episodes is enhanced in older people, both from relative hypoperfusion deleteriously affecting the kidney or brain, and from potential adverse events such as falls. Changes in physiology, accumulation of comorbidity and polypharmacy may significantly affect the individual risk profile. This has been reflected in observational studies inclusive of older people which have shown that systolic blood <130mmHg is associated with excess mortality, without significant reductions in cardiovascular risk.[10] This apparent association between lower blood pressure and excess mortality may be due to longer term blood pressure
declines, accelerated by cancers, dementia, heart failure and frailty[11], while healthier individuals better represented by clinical trials may benefit more from tighter BP control[12]. Importantly, prevention of cardiovascular risk may not be the priority for some groups of older people, particularly those with significant multimorbidity or frailty. While some studies have included frailty measures, no clinical trials to date have randomised people to specific blood pressure treatment targets by frailty at baseline. With the complexities of ageing and the numerous possible combinations of comorbidity and medication, providing more detailed evidence for personalised care is challenging.

Given the paucity of evidence on antihypertensive prescription in older patients with frailty and multimorbidity, specific advice in guidelines is lacking and resulting clinical uncertainty. For clinicians, the key is understanding whether the guideline applies to the individual patient. Specific comorbidity may provide additional information on weighing up risk and selecting appropriate blood pressure targets. Antihypertensive medications can result in a drop in blood pressure on standing or postural symptoms, which may be exaggerated in older people as a result of autonomic changes with age and other factors contributing to frailty. The 2019 NICE hypertension guideline recommends measuring postural blood pressure in people with postural symptoms, all aged over 80 and those with specific co-morbidities such as diabetes, with treatment to a standing blood pressure in those with symptoms or a significant postural hypotension[14]. Frailty measures such as the electronic frailty index[13] are now widely implemented in primary care clinical systems in the UK and further tools to measure multimorbidity have been recently developed[12]. Such tools could be used to identify more complex patients for whom standard guideline blood pressure targets may not be appropriate. For these individuals, decisions on blood pressure management should be tailored to the patient’s health priorities. Failure to do this may result in harm to patients such as falls due to postural hypotension, cerebrovascular events due to reduced cerebral perfusion, or renal impairment.
In conclusion, more research is required to enable a more personalised understanding of optimal blood pressure, so that clinicians can guide shared decision making in older people with varied levels of comorbidity, frailty and cardiovascular risk. Until we have clear targets for complex patients with frailty and multimorbidity, clinicians should aim to lower blood pressure as much as is acceptable for the specific patient, with consideration of the guideline targets.
References


