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HYPERTENSION IN ELDERLY:OUR CURRENT TRENDS

General Medicine

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ABSTRACT

Hypertension is a common disease in the elderly associated with significant morbidity and mortality. Due to the complexity of this population, the optimal target of blood pressure (BP) control is still controversial. In this article, we conduct a literature review of trials published in English in the last 10 years which were specifically designed to study the efficacy and safety of various BP targets in patients who are 70 years or older. Using these criteria, we found that the benefits in the positive studies were demonstrated even with a minimal BP control (systolic BP [SBP] <150 mmHg) and continued to be reported for a SBP <120 mmHg. On the other hand, keeping SBP <140 mmHg seemed to be safely achieved in elderly patients. Although the safety of lowering SBP to <120 mmHg is debated, Systolic Blood Pressure Intervention Trial study has shown no increased risk of falls, fractures, or kidney failure in elderly patients with SBP lower than this threshold. While the recent guidelines recommended to keep BP <130/80 mmHg in the elderly, more individualized approach should be considered to achieve this goal in order to avoid undesirable complications. Furthermore, further studies are required to evaluate BP target in very old patients or those with multiple comorbidities.

KEYWORDS

Blood pressure, cardiovascular, elderly, geriatrics, hypertension, stroke

INTRODUCTION

In the last decades, the number of elderly patients continued to increase dramatically to be 8.5% of the current world's population and is expected to reach about 17% by 2050.[1] In parallel, hypertension (HTN) tends to increase with age affecting more than 75% of people older than 75 years in the United States.[2],[3] Due to the high prevalence of multiple comorbidities, frailty, and poly-pharmacy, the management of HTN in geriatric population is more challenging than in younger patients. Furthermore, older patients were minimally represented in HTN trials, leaving several unanswered clinical questions for physicians who provide care to this age group.

The optimal blood pressure (BP) control should achieve the maximum preventive benefits without causing harms or complications. Yet, this target in the elderly is still controversial. In this article, we review the trials that studied the efficacy and safety of different BP targets in old patients and discuss the guidelines which were released recently from different medical societies.

MATERIAL AND METHODS

We conducted a literature review to analyze the trials which were published in English in the last 10 years which specifically included patients aged 70 years or older. We used in our search the words "hypertension," or "blood pressure" combined with "elderly," "geriatrics," "older than 70 years," .All other studies which do not meet these criteria were excluded. At the end, a manual search of the references of the selected articles was performed to look for any relevant articles that we might have missed.

Why the Hypertension Management in the Elderly is Special?

For many years, HTN was considered a physiological response of aging related to degeneration of elastic fibers and deposition of calcium and collagen in the arterial walls.[4] However, various studies have shown that HTN is not a benign finding in elderly patients but can be a strong independent risk factor of morbidity and mortality of cardiovascular diseases.[5],[6] Besides, many clinical trials have proven that appropriate management of HTN reduces the risk for cardiovascular diseases, cerebrovascular diseases, and death.[7]

That being said, the strict control of BP in geriatric population raises valid concerns of increasing the risk of hypotension, especially in those older than 80 years. Interestingly, it is estimated that more than half of octogenarian and nonagenarian patients are at risk of having masked hypotension which means they may develop hypotension at home even if they have normal BP in the office visit.[8] This risk was especially reported in those with diabetes, coronary heart disease, or who are on many antihypertensive medications.[8] Due to frailty, hypotension in the elderly can associate with a higher risk of falls, leading to serious fractures and immobility.[9] Moreover, several studies have shown that hypotension due to antihypertensive agents can result in frequent incidences of stroke and acute renal failure, besides an increase in all-cause and cardiovascular mortalitie.

Since both HTN and medication-related hypotension are associated with an increased mortality and poor outcomes, it is widely believed that the relationship between BP and mortality and morbidity in older patients shows a J-curve (or U shape) phenomenon. In other words, BP in geriatric population must be controlled to avoid stroke and cardiovascular diseases but without causing hypotension, falls, and other complications. To define this perfect range of BP, two different questions should be addressed: first, what is the ideal BP goal in the elderly to achieve the maximum benefits of antihypertensive therapy? And second, to which level can we safely control BP without causing harm or increasing mortality?

Is Lowering Blood Pressure Targets More Beneficial in the Elderly?

Although the benefits of BP management are indisputable, it was unclear whether intensive control of BP is superior to moderate control in geriatric population or not. Using our search criteria, we identified five trials which have been specifically conducted in patients older than 70 years to answer this question.

The earliest study was the Hypertension in the Very Elderly Trial (HYVET) which randomly assigned individuals older than 80 years with initial SBP >160 mmHg to either treatment or placebo. With medications, the reduction in BP to 150/80 mmHg resulted in significant decrease in the incidence of fatal stroke, all-cause mortality, any cardiovascular events, and heart failure. Moreover, after applying per-protocol analyses, the active treatment of the elderly added more benefits such as decreasing the rate of any stroke by 34% and the rate of death from cardiovascular causes by 27%.

What is the Threshold to Safely Control Blood Pressure in the Elderly?

The safety of BP control is the other very important component of HTN management in the elderly particularly since several early population-based studies suggested that lowering BP in older patients may associate with worsening mortality.

Although safety was not one of the endpoint outcomes of the HYVET study, the results revealed no difference between the placebo and the active-treatment group regarding the changes in electrolytes and kidney function after 2 years of follow-up. Besides, the reported serious adverse events were comparable in the two groups.

The VALISH trial found that BP of <140 mmHg can be safely achieved in healthy patients older than 70 years old. The rates of adverse events such as renal failure, gastrointestinal symptoms, or respiratory symptoms were similar in the two groups. This was also correct for more serious adverse events which were reported equally regardless of BP control strategy.

The Target Of Blood Pressure Control According To The Published Guidelines

Due to the complexity of BP management in the elderly, several medical committees have released their specific guidelines on when to initiate pharmacotherapy and the best goal of BP management in elderly patients. Depending on the evolving evidence over the last few years, different targets have been suggested.

DISCUSSION

In 2011, the National Institute of Health and Care Excellence recommended a higher target for patients older than 80 years compared to the general population. Likewise, the European Society of Hypertension and European Society of Cardiology suggested to lower SBP to <150 mmHg in elderly individuals with SBP ≥160 mmHg. However, elderly patients who are younger than 80 years and fit and tolerant to treatment should be managed to maintain BP.

In 2014, the Eighth Joint National Committee updated their BP guidelines and recommended starting medical management in patients aged 60 years or older when their BP is higher than 150/90 mmHg and to keep it all the time less than this threshold.

A new Canadian Hypertension Education Program guideline agreed on higher targets of patients older than 80 years. However, they considered patients aged between 75 and 80 years at a high risk and recommended to initiate treatment if SBP is >130 mmHg aiming to a SBP target of <120 mmHg.

While the guidelines of American College of Physicians and the American Academy of Family Physicians suggested to treat HTN when SBP is more than 150 mmHg in elderly patients with low risk factors, more intense target was recommended if the patient has a history of stroke or cardiovascular events.

The most recent recommendations were released by several American societies including the American Heart Association/American College of Cardiology, American Geriatrics Society, and American Society of Hypertension. These guidelines are important being the first scientific paper to recommend the same HTN treatment goals in persons who are older and younger than 65 years. Instead of age, the new guidelines determined target BP based on a combination of absolute cardiovascular disease risk and BP level. Since the majority of old patients have a history of cardiovascular disease or a high atherosclerotic cardiovascular disease, BP of 130/80 mmHg was considered a reasonable treatment goal in geriatric population.

In a review, we can notice a tendency in the recent guidelines to lower BP targets for older patients, especially in those who are considered at a higher cardiovascular risk. Yet, these guidelines recommended to use clinical judgment, patient preference, and team-based approach to assess the risk/benefit of management, especially in those with dementia, advanced heart failure, and nursing home residents.

CONCLUSION

HTN is a very common and challenging disease in geriatric population. Although the benefits of BP control in the elderly are well documented, the optimal BP target in this group is still controversial. The most recent guidelines suggested a treatment goal of 130/80 mmHg in patients older than 65 years. However, many factors need to be considered to reach this goal, and clinical judgment and team-based approach is recommended. Additional studies are required to evaluate patients who are very old or those with other comorbidities who used to be either excluded or underrepresented in previous studies.

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REFERENCES

1. He W, Goodkind D, Kowal P. U.S. Census Bureau, International Population Reports, P95/16-1, An Aging World. Washington, DC: U.S. Government Publishing Office; 2016. Available from: https://www.census.gov/content/dam/Census/library/publications/2016/demo/p95-16-1.pdf. [Last accessed on 2018 Feb 27].
2. Duprez DA. Systolic hypertension in the elderly: Addressing an unmet need. Am J Med 2008;121:179-84.e3
3. Whelton PK. The elusiveness of population-wide high blood pressure control. Annu Rev Public Health 2015;36:109-30.
4. Lee HY, Oh BH. Aging and arterial stiffness. Circ J 2010;74:2257-62. Chobanian AV. Clinical practice. Isolated systolic hypertension in the elderly. *N* Engl J Med 2007;357:789-96
5. Tsimploulis A, Sheriff HM, Lam PH, Dooley DJ, Anker MS, Papademetriou V, *et al.* Systolic-diastolic hypertension versus isolated systolic hypertension and incident heart failure in older adults: Insights from the cardiovascular health study. Int J Cardiol 2017;235:11-6
6. Dahlöf B, Lindholm LH, Hansson L, Scherstén B, Ekbom T, Wester PO. Morbidity and mortality in the Swedish trial in old patients with hypertension (STOP-hypertension) Lancet 1991;338:1281-5.
7. Divisón-Garrote JA, Ruilope LM, de la Sierra A, de la Cruz JJ, Vinyoles E, Gorostidi M, *et al.*
8. Magnitude of hypotension based on office and ambulatory blood pressure monitoring: Results from a cohort of 5066 treated hypertensive patients aged 80 years and older. J Am Med Dir Assoc 2017;18:452.e1-452.e6
9. Butt DA, Mamdani M, Austin PC, Tu K, Gomes T, Glazier RH, *et al.* The risk of hip fracture after initiating antihypertensive drugs in the elderly. Arch Intern Med 2012;172:1739-44.
10. Vokó Z, Bots ML, Hofman A, Koudstaal PJ, Witteman JC, Breteler MM. J-shaped relation between blood pressure and stroke in treated hypertensives. Hypertension 1999;34:1181-5