International Journal of Research in Medical Sciences
Zaidi I et al. Int J Res Med Sci. 2024 Dec;12(12):4871-4877
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20243756

Review Article

Navigating the complexities of hypertension: guidelines, screening and treatment approaches

Insia Zaidi[1], Riya Nag[2], Sanchita Srivastava[3], Syed T. Raza[2]*, Ale Eba[3], Saliha Rizvi[3], Naseem Fatima[3], Farheen Khan[3]

[1]Era's Lucknow Medical College and Hospital, Lucknow, Uttar Pradesh, India
[2]Department of Biochemistry, Era's Lucknow Medical College and Hospital, Era University, Lucknow, Uttar Pradesh, India
[3]Department of Biotechnology, Era's Lucknow Medical College and Hospital, Lucknow, Uttar Pradesh, India

Received: 18 October 2024
Accepted: 21 November 2024

***Correspondence:**
Dr. Syed T. Raza,
E-mail: tasleem24@gmail.com

ABSTRACT

Hypertension or high blood pressure, is a prevalent condition and a leading cause of cardiovascular morbidity and mortality worldwide. This review provides an in-depth analysis of the current epidemiology, diagnosis and management of hypertension, with a focus on integrating guidelines from major health organizations such as the American College of Cardiology (ACC), American Heart Association (AHA) and European Society of Hypertension (ESH). Key factors contributing to primary and secondary hypertension are discussed, along with their respective diagnostic strategies. The review highlights the importance of accurate blood pressure measurement and the challenges posed by resistant hypertension. Moreover, it examines the disparities in hypertension management across various populations, underscoring the need for individualized care. A unique aspect of this review is the inclusion of telemedicine and digital healthcare solutions in the management of hypertension, particularly in the wake of the COVID-19 pandemic. Telehealth services, which have been increasingly integrated into primary care, offer significant potential for improving blood pressure control, especially in underserved and high-risk populations. The review concludes with a discussion on future directions in hypertension management, including advancements in remote monitoring and personalized treatment strategies. By synthesizing guideline-driven approaches and exploring innovative healthcare solutions, this review aims to provide healthcare professionals with a comprehensive understanding of the evolving landscape of hypertension diagnosis and management.

Keywords: Cardiovascular disease, Hypertension, High blood pressure

INTRODUCTION

Hypertension, commonly referred to as high blood pressure (HBP), it is a common condition that primary care professionals regularly diagnose and manage. It is one of the most leading factors in cardiovascular disease-related illness as well as death within the United States. According to a national outpatient survey, which also gathers data from federally qualified health centers, hypertension is the most common long-term illness among patients. In the US, the probability of developing hypertension at some point in life is greater than 80%.[1,2] A national survey of outpatient medical care examined chronic conditions in clinical environments and found that hypertension accounted for the largest proportion of patient visits, making up 33.6% of visits in metropolitan areas and 27.7% in nonmetropolitan areas.[3]

Additionally, hypertension is among the most frequent reasons for the long-term use of prescription medications.[4] According to prevalence statistics, 46.7% of adults in the United States are affected by hypertension, This translates to approximately 122 million individuals, comprising 62.8

million men and 59.6 million women.[5] Over half of those diagnosed with hypertension struggle to maintain proper blood pressure control.[6] It is important to recognize that high blood pressure has also risen among children and adolescents, largely due to increasing rates of obesity.[7]

Hypertension is highly prevalent in primary care, making it essential for clinicians to effectively diagnose and manage the condition. Despite this, the guidelines for its identification and treatment have frequently been inconsistent. Over the years, several expert organizations have released recommendations that vary slightly from one another. These varying guidelines can make it difficult for both patients and clinicians to reach effective treatment goals. Additionally, hypertension disparities persist, especially within underserved populations, certain patient groups may benefit from customized interventions. Therefore, it is vital for healthcare providers to thoroughly understand the guidelines and the evidence backing them to improve patient outcomes and make informed, fair decisions.

Factors contributing to high blood pressure

Primary hypertension, formerly referred to as essential hypertension, is of unknown origin and is far more common than secondary hypertension, which results from identifiable and potentially reversible causes. While the exact cause of primary hypertension is unknown, its development is influenced by genetic factors and environmental risks, including diet, physical activity and substance use. Secondary hypertension, on the other hand, affects approximately 10% of adults with high blood pressure.[2]

Although less frequent, secondary causes should be assessed in patients with elevated blood pressure, as identifying and addressing these can significantly lower cardiovascular risk through potential cures or marked improvement. Patients with resistant hypertension should be thoroughly assessed for secondary hypertension and in younger individuals experiencing elevated blood pressure. The main causes of secondary hypertension include renovascular disease, primary aldosteronism and obstructive sleep apnea.[2]

Various causes of secondary hypertension exhibit distinct clinical features that assist healthcare providers in diagnosing the underlying condition and determining when to offer appropriate treatment or referrals. Additionally, clinicians should recognize that various external factors can lead to increased blood pressure. Frequently utilized substances, such as prescription drugs, non-prescription pain relievers, dietary supplements, herbal remedies and certain foods, may contribute to elevated blood pressure levels, can all impact blood pressure. By addressing and eliminating these factors, blood pressure can frequently be lowered, this may reduce the need for antihypertensive medications.[2]

High blood pressure and cardiovascular disease

An increased risk of cardiovascular illnesses and their accompanying fatalities is linked to elevated blood pressure. This includes diseases such as peripheral artery disease, heart failure, myocardial infarction (MI), angina and stroke. The chance of dying from heart disease, stroke or other vascular-related illnesses is dramatically doubled for every 20 mm Hg increase in systolic blood pressure and every 10 mm Hg increase in diastolic blood pressure. Out of all the modifiable risk factors, hypertension accounts for the greatest number of fatalities related to cardiovascular disease and is connected to around 25% of all cardiovascular events, including heart failure, revascularization, coronary artery disease and stroke.

Additionally, approximately one-third of instances of end-stage renal disease in the United States are caused by hypertension, with diabetes mellitus being the primary cause.[2]

GUIDELINES

Numerous expert organizations have published guidelines and recommendations regarding hypertension. The United States Preventive Services Task Force (USPSTF), the American Academy of Family Physicians (AAFP), the European Society of Cardiology/European Society of Hypertension (ESC/ESH), the American College of Cardiology/American Heart Association (ACC/AHA), are a few of these. Despite being evidence-based, guidelines can offer conflicting advice about thresholds or objectives for screening, diagnosis and therapy. Despite these differences, the recommendations generally emphasize the need of screening and the need for reliable blood pressure measurement using the right methodologies and the importance of integrating multiple readings when diagnosing hypertension. The main suggestions and guidelines for managing hypertension are outlined in this overview. Based on these recommendations, it offers methods for diagnosis, treatment and screening.

The seventh Joint National Committee (JNC 7) was established in 2003 to prevent, detect, evaluate and treat high blood pressure, published its report, which was regarded as a significant milestone. This document introduced a streamlined system for classifying blood pressure, provided guidelines for prevention and management strategies and suggested the frequency of screening for hypertension according to previous readings.[8] The report by the Eighth Joint National Committee (JNC 8) panel members in 2014, which focused more on therapy than diagnosis, replaced this. JNC 8 offered management guidelines based on factors such as age and concurrent health issues.[9] While the JNC guidelines are regarded as outdated compared to more recent recommendations, Because of their important historical background, they are featured here. Recommending ambulatory blood pressure monitoring to increase the precision of hypertension diagnosis, the ESC

and ESH released guidelines in 2018.[10,11] With an "A" grade for screening all individuals aged 18 and older, the United States Preventive Services Task Force (USPSTF) revised its guidelines for hypertension screening in 2021. They recommended taking baseline blood pressure readings in a clinical setting (office blood pressure measurement or OBPM) and obtaining confirmation readings elsewhere before making a diagnosis and starting treatment. In 2022, the American Academy of Family Physicians (AAFP) published blood pressure target guidelines for individuals with hypertension but omitted information on diagnosis, treatment or screening. Due to concerns about the rigor and conflicts of interest in newer criteria, the AAFP chose to uphold the JNC 8 goals.[12,13]

THE STRATEGY BASED ON GUIDELINES FOR HYPERTENSION SCREENING

Hypertension often presents without symptoms, but it is the leading cause of negative cardiovascular as well as cerebrovascular events. Previously mentioned, its widespread occurrence in the community continues to be significant. These circumstances highlight the necessity for individuals to participate in hypertension screening as part of preventive healthcare.[12]

Once this "A" suggestion has been reiterated, supported by strong evidence, adult hypertension screening has substantial net benefits, according to the USPSTF's confident determination. Individuals between the ages of 18 and 39 who have previously had normal blood pressure are advised to get screened every 3 to 5 years and are not at elevated risk for developing hypertension. Those aged above 40 or younger individuals with elevated risk factors, annual screening is advised. The USPSTF lists a number of factors, such as race (Black) that increase a person's risk of hypertension, having a history of hypertension in the family, being overweight or obese, leading a sedentary lifestyle, experiencing stress, using tobacco, consuming excessive alcohol.[14,15]

According to the USPSTF, there is insufficient data to suggest hypertension screening for kids and teenagers who don't exhibit any symptoms. On the other hand, starting at age three years, the American Academy of Pediatrics recommends that all children receive testing for hypertension. Results from the National Health and Nutrition Examination Survey, which looked at high blood pressure between 2013 and 2016, suggest that the revised recommendations may classify almost 800,000 more children as having hypertension.[7,10,16]

Blood pressure measurement

For equitable and patient-centered hypertension screening, diagnosis and treatment, accurate blood pressure measurement is essential. There are three primary methods for measuring blood pressure: OBPM, 24-hour ambulatory blood pressure monitoring and home blood pressure monitoring.[13]

Using the correct technique enhances the accuracy of blood pressure measurements. This process requires using a calibrated device to take blood pressure readings from the upper arm, ensuring the brachial artery is positioned at the same height as the right atrium. For both office and home blood pressure monitoring, the person should sit comfortably after a 5-minute rest period.[17] Caffeine, smoking and strenuous activity should be avoided for at least 30 minutes before the test as these behaviours might cause higher blood pressure results.[17]

GUIDELINE-BASED STRATEGY FOR HYPERTENSION DIAGNOSIS

Diagnosing hypertension is a multifaceted process that requires several blood pressure measurements taken with proper technique in both clinical and non-clinical settings. Although these two guidelines align on numerous points, they differ primarily in the thresholds used to establish a diagnosis. Both sets of recommendations state that multiple verified blood pressure measurements should be obtained during the initial examination.[18]

People should initially get regular OBPM screenings in order to be diagnosed with hypertension. Both the AHA/ACC as well as ESC/ESH guidelines stress the importance of accurate measurements with multiple readings, though their protocols differ slightly. The ACC/AHA advises averaging at least two readings taken on 2 separate visits, while the ESC/ESH suggests taking 3 readings during the office visit, after which more measurements are taken for confirmation. A diagnosis is made if blood pressure meets the Stage/Grade 1 criteria (The ACC/AHA categorizes blood pressure levels as 130–139/80–89 mm Hg, while the ESC/ESH defines the range as 140–159/90–99 mm Hg).[2,10]

If systolic and diastolic pressures fall into different categories, the patient should be placed in the higher one. Diagnosing hypertension requires checking for organ damage, cardiovascular risks and possible secondary causes. This can be done through a detailed history, physical exam and, if needed, tests like an ECG, metabolic panel, urinalysis, thyroid function tests and lipid panel.[2,10]

Guideline-based strategy for hypertension treatment

The goal of hypertension treatment is to reduce the morbidity and mortality associated with high blood pressure, not only by lowering blood pressure but also by preventing or delaying the onset of cardiovascular diseases. According to the AHA/ACC recommendations, the 10-year ASCVD risk should be carefully assessed when deciding whether to initiate therapy. The ASCVD Risk Estimator Plus (tools.acc.org/ascvd-risk-estimator-plus) provided by the ACC is used to evaluate risks, takes into account factors such as age, sex, blood pressure, use of antihypertensive medications, cholesterol levels, smoking history and diabetes status.[19]

Table 1: Recommended blood pressure targets for elderly patients.

Blood pressure targets in elderly patients (mmHg)	60–69 years	70–79 years	80 years and older
AAFP	<140/90	<140/90	<140/90
ESC/ESH	<130/80a	<140/80a	<140/80a
ACC/AHA	<130/80	<130/80	<130/80
JNC 8	<150/90	<150/90	<150/90

Individuals are classified into risk categories according to their 10-year ASCVD risk: low risk (less than 5%), borderline risk (5% to less than 7.5%), intermediate risk (7.5% to less than 20%) and high risk (20% or greater). To achieve the goals of hypertension management, both nonpharmacologic and pharmacologic interventions can be employed, either separately or in combination. This process should involve shared decision-making with patients, taking into account their values, preferences and any comorbidities or concurrent conditions.[19]

Pharmaceutical approaches to treatment

Medications for hypertension significantly reduce the risk of cardiovascular and cerebrovascular diseases, leading to a nearly 50% lower relative risk of heart failure, a 30% to 40% reduction in stroke risk and a 20% to 25% decrease in the risk of myocardial infarction (MI).

The ACC/AHA recommendations suggest initiating pharmacological therapy alongside nonpharmacologic treatments for patients with stage 2 hypertension (>140/90 mm Hg) or stage 1 hypertension (130–139/80–89 mmHg) who have clinical ASCVD or a 10-year ASCVD risk of 10% or greater.

For those who do not meet these criteria, nonpharmacologic interventions are advised and a follow-up assessment should occur within 3 to 6 months for patients with elevated blood pressure or stage 1 hypertension with a risk of less than 10%.[2,20]

When selecting the first pharmacological treatment for hypertension, the ACC/AHA guidelines and a corresponding systematic review recommend starting with a single medication from one of four classes due to their similar effectiveness. These groups include angiotensin-converting enzyme (ACE) inhibitors, long-acting calcium channel blockers, thiazide or thiazide-like diuretics and angiotensin II receptor blockers (ARBs).[2,21]

When starting a thiazide or thiazide-like diuretic medication, chlorothiazide is preferred over hydrochlorothiazide because it has better efficacy, a longer half-life and a reduced incidence of cardiovascular disease. Clinicians should engage in patient-centered care and shared decision-making, considering factors such as medication cost, dosing and side effects when selecting a specific antihypertensive agent.[2]

Certain patients may require specific antihypertensive agents or classes due to compelling indications related to their comorbidities or contraindications. Compelling indications refer to significant improvements in outcomes that are independent of blood pressure levels. In such cases, the choice of the initial medication should be tailored to the individual patient. People with a history of MI, ACE inhibitors or ARBs, along with beta-blockers and aldosterone antagonists, are suitable options. Beta-blockers or calcium channel blockers can be effectively used to control the rate in cases of atrial fibrillation or flutter.[8] According to the ACC/AHA guidelines, patients should be monitored monthly after starting pharmacological treatment for hypertension until they reach their target blood pressure. Once the goal is met, follow-ups can be done every 3 to 6 months. If the target is not reached, adherence should be assessed and therapy may need to be intensified through dose adjustments or combination medications.[2]

Most patients with hypertension will require multiple antihypertensive medications for effective BP control, this is especially critical if the baseline systolic blood pressure is 15 mm Hg or more above the target. Combination therapy, which employs medications from various classes, tends to be more effective and has fewer side effects than increasing the dose of a single agent. It should be started for patients whose systolic blood pressure is at least 20 mm Hg above the target or whose diastolic blood pressure is 10 mmHg above the goal. Recommended combinations include an ACE inhibitor or ARB with a calcium channel blocker or a thiazide diuretic, but ACE inhibitors and ARBs should not be used together due to potential harm without added benefit.[2]

Challenges of hypertension resistant

When managing blood pressure (≥130/80 mm Hg) with three antihypertensive medications (including a diuretic), the use of four or more medications may be necessary.

Prevalence

Affects about 17% of patients with hypertension.

Common demographics

More prevalent in, older individuals, black patients, those with obesity. patients with chronic kidney disease

Management steps

Confirm treatment adherence

Ensure patients are following their prescribed regimen.

Accurate measurement

Use appropriate techniques to confirm blood pressure readings, considering home or ambulatory monitoring.

Address lifestyle factors

Encourage physical activity, dietary changes and reduction of substance use (e.g., NSAIDs, stimulants).

Medication review

Discontinue or reduce medications that may raise blood pressure.

Evaluate for secondary causes

Conduct assessments to identify and manage any underlying conditions contributing to hypertension.

Adjust pharmacologic interventions

Consider, maximizing diuretic therapy. Adding mineralocorticoid receptor antagonists (e.g., spironolactone), using loop diuretics, especially if glomerular filtration rate is reduced.

Referral

If blood pressure remains uncontrolled, refer the patient to a hypertension specialist for further management.[2]

Older adults with hypertension

As individuals age, the prevalence of hypertension increases, it is essential for primary care providers to focus on managing hypertension in older adults. However, treating this demographic can be complicated due to the existence of varying guidelines from different medical organizations, which suggest different thresholds for starting medication and establish distinct blood pressure targets. Moreover, it is crucial to emphasize that older individuals have frequently been left out or inadequately represented in research studies that shape the guidelines for hypertension screening and management.[22] This difficulty is further exacerbated by potential cognitive changes, a higher risk of side effects, polypharmacy, function of blood vessels, as well as shifting pharmacodynamics as individuals grow older.

ESC/ESH guidelines recommend less than 140/90 mm Hg for patients with CKD.[2,9,10,13] Despite differing guidelines, there is a consensus that lowering systolic BP below 160 mm Hg significantly benefits cardiovascular health, with all current recommendations targeting less than 150/90 mmHg. Nonpharmacological strategies should be prioritized whenever possible. If medication is necessary, first-line options include thiazide diuretics, ACE inhibitors and calcium channel blockers, which have proven effective in older patients. Beta-blockers, loop diuretics and alpha-blockers are generally discouraged unless there are specific reasons to use them. Clinicians should engage patients in shared decision-making, taking into account their comorbidities, preferences and life expectancy.[23]

Hypertension management and telemedicine

Telemedicine has become a viable alternative for delivering high-quality care for various health issues. Following the COVID-19 pandemic, its usage has surged, enhancing access to healthcare and potentially lowering costs while fostering better communication about patients' health. This approach can be particularly advantageous for managing hypertension in certain groups, such as elderly individuals, those in medically underserved areas, patients with multiple chronic conditions and people facing isolation due to pandemics or emergencies.[24]

Research indicates that incorporating telehealth services is linked to better blood pressure management across the previously mentioned groups of hypertension patients. However, specific guidelines for its implementation are primarily outlined by the ACC/AHA.[24-28] These guidelines advocate for confirming diagnoses through telemedicine and providing counselling via telehealth alongside standard care to enhance treatment adherence and blood pressure control. The role of telehealth in managing hypertension is expected to grow in importance for primary care clinicians and should be considered as a means to enhance patient care.[2]

CONCLUSION

Hypertension is a prevalent condition in primary care settings. It plays a major role in increasing the risk of cardiovascular disease, contributing to significant morbidity and mortality. Various guidelines exist to aid in the screening, diagnosis and management of hypertension. Healthcare providers need to be familiar with these guidelines. Engaging in informed decision-making with patients is crucial. The goal is to improve cardiovascular outcomes and address health disparities.

Key considerations in hypertension management and screening

Hypertension is a major factor driving healthcare visits and medication prescriptions in primary care practices. Small increases in blood pressure can substantially elevate the risk of cardiovascular-related mortality. It is essential to conduct routine blood pressure checks and gather multiple readings for an accurate hypertension diagnosis. Effective management and screening of hypertension should

prioritize patient education and consider demographic factors such as age, race and the advantages of telehealth services.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Santo L, Okeyode T. Schappert S. National ambulatory medical care survey–community health centers: 2020 national summary tables. Centers for Disease Control and Prevention. 2022.
2. Whelton PK, Carey RM, Aronow WS. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APHA/ASH/ ASPC/NMA/PCNA Guideline for the Prevention, Detection, Eval- uation and Management of High Blood Pressure in Adults: A Report of the Amer- ican College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Hypertension 2018;71(6):1.
3. Santo L, Kang K. National Hospital Ambulatory Medical Care Survey: 2019 Na- tional Summary Tables. Centers for Disease Control and Prevention. 2023.
4. Finley CR, Chan DS, Garrison S, Korownyk C, Kolber MR, Campbell S, et al. What are the most common conditions in primary care? Systematic review. Can Fam Physician. 2018;64(11):832-40.
5. Tsao CW, Aday AW, Almarzooq ZI anderson CA, Arora P, Avery CL, et al. Heart disease and stroke statistics—2023 update: a report from the American Heart Association. Circulation. 2023;21;147(8):93-621.
6. Chobufo MD, Gayam V, Soluny J, Rahman EU, Enoru S, Foryoung JB, et al. Prevalence and control rates of hypertension in the USA: 2017–2018. Int J Cardiol Hypert. 2020;1;6:100044.
7. Fox C. Pediatric Hypertension. Prim Care. 2021;48(3):367-78.
8. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo Jr JL, et al. Seventh report of the joint national committee on prevention, detection, evaluation and treatment of high blood pressure. hypertension. 2003;1:1206-52.
9. James PA, Oparil S, Carter BL, Cushman WC, Dennison-Himmelfarb C, Handler J, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). JAMA. 2014;5;311(5):507-20.
10. Williams B, Mancia G, Spiering W, Agabiti Rosei E, Azizi M, Burnier M, et al. 2018 ESC/ESH Guidelines for the management of arterial hypertension: The Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH). Eur Heart J. 2018;1;39(33):3021-104.
11. Bergler-Klein J. What's new in the ESC 2018 guidelines for arterial hypertension : The ten most important messages. Wien Klin Wochenschr. 2019;131(7):180–5.
12. Krist AH, Davidson KW, Mangione CM, Cabana M, Caughey AB, Davis EM, et al. Screening for hypertension in adults: US Preventive Services Task Force reaffirmation recommendation statement. Jama. 2021;27(16):1650-6.
13. Coles S, Fisher L, Lin KW, Lyon C, Vosooney AA, Bird MD. Blood pressure targets in adults with hypertension: a clinical practice guideline from the AAFP. Am F Physi. 2022;106(6):722.
14. Guirguis-Blake JM, Evans CV, Webber EM, Coppola EL, Perdue LA, Weyrich MS. Screening for hypertension in adults: updated evidence report and systematic review for the US Preventive Services Task Force. JAMA. 2021;27:1657-69.
15. Benjamin EJ, Blaha MJ, Chiuve SE, Cushman M, Das SR, Deo R, et al. Heart Disease and Stroke Statistics-2017 Update: A Report From the American Heart Association. Circulation. 2017;135(10):146–603.
16. Jackson SL, Zhang Z, Wiltz JL. Hypertension Among Youths - United States, 2001-2016. MMWR Morb Mortal Wkly Rep. 2018;67(27):758–62.
17. Muntner P, Shimbo D, Carey RM. Measurement of blood pressure in hu- mans: A scientific statement from the american heart association. Hypertension. 2019;73(5):35–66.
18. Whelton PK, Carey RM, Mancia G. Harmonization of the American college of cardiology/American heart association and European society of cardiology/European society of hypertension blood pressure/hypertension guidelines: comparisons, reflections and recommendations. Circulation. 2022;146(11):868–77.
19. Wong ND, Budoff MJ, Ferdinand K, Graham IM, Michos ED, Reddy T, et al. Atherosclerotic cardiovascular disease risk assessment: An American Society for Preventive Cardiology clinical practice statement. Am J Preven Cardiol. 2022;10:100335.
20. Turnbull F, Neal B, Ninomiya T, Algert C, Arima H, Barzi F, et al. Blood pressure lowering treatment trialists' collaboration. Effects of different regimens to lower blood pressure on major cardiovascu- lar events in older and younger adults: meta-analysis of randomised trials. BMJ. 2008;336(7653):1121–3.
21. Reboussin DM, Allen NB, Griswold ME, Guallar E, Hong Y, Lackland DT, et al. Systematic review for the 2017ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Hypertension. 2018;71(6):116-35.
22. Oliveros E, Patel H, Kyung S, Fugar S, Goldberg A, Madan N, et al. Hypertension in older adults: Assessment, management and challenges. Clinical Cardiol. 2020;43(2):99-107.

23. Aronow WS. Managing Hypertension in the elderly: What's new? American J Prev Cardiol. 2020;1:100001.
24. Omboni S, McManus RJ, Bosworth HB, Chappell LC, Green BB, Kario K, et al. Evidence and recommendations on the use of telemedicine for the management of arterial hypertension: an international expert position paper. Hypertension. 2020;76(5):1368-83.
25. Muntner P, Carey RM, Gidding S, Jones DW, Taler SJ, Wright JT Jr, et al. Potential US population impact of the 2017 ACC/AHA high blood pressure guideline. Circulation. 2018;137(2):109–18.
26. Verberk WJ, Kessels AGH, Thien T. Telecare is a valuable tool for hypertension management, a systematic review and meta-analysis. Blood Press Monit. 2011;16(3):149–55.
27. Watson AR, Wah R, Thamman R. The value of remote monitoring for the COVID- 19 Pandemic. Telemed J Health. 2020;26(9):1110–2.
28. Keesara S, Jonas A, Schulman K. Covid-19 and Health Care's Digital Revolution. N Engl J Med. 2020;382(23):82.

Cite this article as: Zaidi I, Nag R, Srivastava S, Raza ST, Eba A, Rizvi S. Navigating the complexities of hypertension: guidelines, screening and treatment approaches. Int J Res Med Sci 2024;12:4871-7.