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HYPERTENSION MANAGEMENT A COMPREHENSIVE REVIEW

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ABSTRACT

Hypertension is a significant and costly public health problem. It is a major, but modifiable contributor for the development of cardiovascular disease. Randomized controlled trials have shown that controlling hypertension reduces the risk of stroke, coronary artery disease, congestive heart failure, end-stage renal disease, peripheral vascular disease, as well as overall mortality. The risk of developing these hypertension-related complications is continuous, starting at a blood pressure level as low as 115/75 mm Hg. Despite the inherent health risks associated with uncontrolled hypertension, elevated blood pressure remains inadequately treated in the majority of patients. This article reviews guidelines for optimal evaluation of hypertension and current therapeutic options available to combat this common yet pervasive disease Hypertension is a common issue, impacting about one in three adults in the United States, with nearly 2 million new cases popping up each year. Additionally,

around 28% of the population is in the prehypertensive range, and about 7% of those with hypertension don't even realize they have it. Globally, over 1 billion people are living with this condition, and that number is projected to rise to 1.56 billion by 2025. It's the leading cause of death worldwide and the second biggest contributor to lost disability-adjusted life-years. Research from randomized controlled trials shows that managing blood pressure effectively can significantly lower the risk of serious complications like stroke, coronary artery disease, heart failure, end-stage renal disease, peripheral vascular disease, and even death. Notably, the risk for these issues starts to climb at blood pressure levels as low as 115/75 mm Hg. Hypertension also puts a significant strain on healthcare systems. In the U.S. alone, the total direct and indirect costs were estimated at a staggering $73.4 billion in 2009. About $15 billion—nearly 10% of the total annual spending on medications—goes toward antihypertensive drugs. Yet, only around 34% of people with hypertension manage to hit the recommended blood pressure targets (below 140/90 mm Hg). The reasons behind this are complex and not entirely understood, and they can't be attributed just to gaps in awareness, access to treatment, or knowledge about lifestyle changes. Since most individuals are likely to face hypertension at some point in their lives, it's crucial to prioritize early prevention and effective management strategies, which should include both lifestyle changes and medication, to reduce the risk of related complications.

Patient Evaluation

In 2003, the Seventh Report of the Joint National Committee (JNC-7) rolled out some updated guidelines aimed at preventing, detecting, evaluating, and managing high blood pressure. The committee recognized that the risk of cardiovascular disease (CVD) rises steadily as blood pressure increases, leading to the introduction of a new classification called prehypertension. This is defined as having a systolic blood pressure between 120 and 139 mm Hg or a diastolic pressure between 80 and 89 mm Hg. People falling into this category are seen as having a higher risk of developing both CVD and full-blown hypertension. Because of this, there's a strong push for making significant lifestyle changes to help prevent the progression of these conditions. Moreover, JNC-7 made things simpler by combining the previous stages 2 and 3 of hypertension into one category, now known as stage 2 hypertension. For those in this group, it's highly recommended to start pharmacologic therapy right away, often in conjunction with lifestyle changes, to effectively manage blood pressure and lower the chances of complications.

Table 1.

Classification and Management of BP for Adults

BP classification	Systolic BP, mm Hg[a]	Diastolic BP, mm Hg[a]	Lifestyle modifications	Follow-up recommendation[b]	Initial drug therapy	
					Without compelling indication	With compelling indication
Normal	<120	and <80	Encourage	Recheck in 2 y	No antihypertensive indicated	Drug(s) for compelling indications
Prehypertension	120–139	or 80–89	Yes	Recheck in 1 y		
Stage 1 hypertension	140–159	or 90–99	Yes	Confirm within 2 mo	Thiazide-type diuretics for most May consider ACE inhibitors, ARBs, beta-blockers, CCBs, or combination	Drug(s) for compelling indications Other antihypertensives (diuretics, ACE inhibitors, ARBs, beta-blockers, CCBs) as needed
Stage 2 hypertension	≥160	or ≥100	Yes	Evaluate in 1–4 wk depending on clinical situation (evaluate and treat immediately if BP >180/110 mm Hg)	2-drug combination for most (usually thiazide-type diuretics and ACE inhibitors, ARBs, beta-blockers, or CCBs)	

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[a]If there is discrepancy between systolic and diastolic BP, the higher value determines staging. Treatment is determined by highest BP category.

[b]Based on the Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.

ACE indicates angiotensin-converting enzyme; ARBs, angiotensin receptor blockers; BP, blood pressure; CCBs, calcium channel blockers.

Source: Chobanian AV, et al. *Hypertension*. 2003;42:1206–1252.

Table

Screening and Diagnosis

Screening for hypertension is strongly encouraged for all adults aged 18 and older, as recommended by the U.S. Preventive Services Task Force and the American Academy of Family Physicians. If your blood pressure (BP) is below 120/80 mm Hg, you should get screened every two years. For those with systolic BP between 120–139 mm Hg or diastolic BP between 80–89 mm Hg, annual screenings are advised. Getting an accurate BP measurement is crucial for a proper diagnosis. Common errors—like incorrect hand positioning, using the wrong cuff size, or not letting the patient rest for at least five minutes—can lead to falsely elevated readings. To diagnose hypertension, you need at least two readings of 140/90 mm Hg or higher, taken during three separate clinic visits spaced 2–4 weeks apart. When deciding on treatment based on BP levels, always use the higher value, whether it's systolic or diastolic. For patients who might have white coat hypertension (where BP is elevated in a clinical setting but normal elsewhere) or those with varying measurements, it's a good idea to consider ambulatory BP monitoring or repeated home BP checks. Every patient with hypertension should undergo a thorough medical history and physical examination. This helps to identify any reversible causes, check for damage to target organs, and evaluate other cardiovascular risk factors like diabetes or smoking. A lab evaluation is also important and should include: - Urinalysis - Hemoglobin or hematocrit - Basic metabolic panel - Fasting lipid profile - Electrocardiogram (ECG) Additionally, measuring the urine microalbumin-to-creatinine ratio is key, as it acts as an independent marker of overall cardiovascular risk.

Treatment Strategies

When it comes to managing hypertension, the main goal is to bring blood pressure (BP) down to less than 140/90 mm Hg. For those dealing with both hypertension and conditions like diabetes or kidney disease, the target is even stricter, aiming for ≤130/80 mm Hg. It's crucial for everyone with hypertension to start with nonpharmacologic interventions. If implemented early on, lifestyle changes can significantly lower the risk of other health issues and might even eliminate the need for medication. However, sticking to a healthy lifestyle can be tough, and most people will ultimately need medication to keep their BP in check. KEY POINTS ▸ Hypertension is a widespread issue, impacting about one in three American adults, with around 2 million new cases diagnosed each year. ▸ Research indicates that managing hypertension effectively can lower the chances of stroke, heart disease, end-stage renal

disease, peripheral vascular disease, and the financial burden that comes with these conditions. ‣ Roughly 10% of the total annual drug spending in the US, which amounts to about $15 billion, goes toward antihypertensive medications. In 2009, the total direct and indirect costs associated with hypertension were estimated at a staggering $73.4 billion. ‣ Even with a variety of treatment options available, many patients still struggle to reach their blood pressure targets. That's why implementing preventive measures early on is vital to reduce the complications linked to this expensive health issue. Lifestyle Modifications The JNC-7 guidelines recommend lifestyle changes for everyone with prehypertension or hypertension. These changes include losing weight, cutting back on sodium, increasing physical activity, limiting alcohol intake, and following the DASH eating plan. In the PREMIER clinical trial, researchers looked at the effects of comprehensive lifestyle changes that included the JNC-7 recommendations (the “established plus DASH” group) compared to a group that focused on behavioral changes without DASH (the “established” group) and an “advice-only” group. The findings revealed that the established group experienced more significant reductions in both systolic and diastolic BP compared to the advice-only group.

PHARMACOTHAPHY

When lifestyle changes alone aren't enough to get blood pressure (BP) under control, it's time to consider pharmacotherapy. The go-to classes of antihypertensive medications that doctors typically start with include diuretics, angiotensin-converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs), beta-adrenergic antagonists (beta-blockers), and calcium channel blockers (CCBs).

Some patients might need a combination of two or more of these medications to effectively manage their BP. For those who have just been diagnosed with hypertension and whose BP readings are significantly above the target—more than 20 mm Hg systolic or 10 mm Hg diastolic—it's often recommended to kick off treatment with dual-drug therapy right from the start, whether that means using separate medications or a fixed-dose combination.

To help reduce the chances of side effects, it's a good idea to add a second medication that works differently before increasing the dose of the first one to its maximum level.

Table 2 outlines the many antihypertensives used today. The Figure provides an algorithm for the treatment of hypertension. Table 3 lists the recommended drug classes according to compelling indications

aCost calculated from generic, if available, and lowest bottle size available. Cost source: www.drugstore.com.

ACE indicates angiotensin-converting enzyme; AV, atrioventricular; CHF, congestive heart failure; CNS, central nervous system; GI, gastrointestinal.

Table 2.

Selected Oral Antihypertensive Drugs

Drug	Dose range, mg/d	Common side effects	Comments	Cost for 30-day supply[a]
Aldosterone antagonists				
Eplerenone (Inspra)	50–100	Dizziness, fatigue, GI disturbances, hyperkalemia, hypertriglyceridemia	More specific in aldosterone blockade Contraindicated in patients at high risk for hyperkalemia	$127.88-$255.76
Spironolactone (Aldactone)	25–50	CNS effects (drowsiness, lethargy, headache, fatigue), GI disturbances, hyperkalemia, menstrual irregularities, gynecomastia, mastodynia		$15.99-$21.99
Alpha$_1$-blockers				
Doxazosin (Cardura)	1–16	Dizziness, headache, lack of energy, nausea, palpitations, orthostatic hypotension		$17.99-$47.98
Prazosin (Minipress)	2–20		$17.99-$67.98	
Terazosin (Hytrin)	1–20		$14.45-$27.98	
Alpha$_2$-agonists				
Clonidine tablets (Catapres)	0.1–0.8	Dry mouth, dizziness, drowsiness, constipation	Rebound hypertension with abrupt discontinuation	$7-$26.65
Methyldopa (Aldomet)	250–1000	Drowsiness, decrease in mental acuity, orthostatic hypotension, nasal congestion, sexual difficulty, bradycardia	First-line agent when hypertension is first diagnosed in pregnancy Positive Coombs' test	$6.50-$25.99
ACE inhibitors				
Benazepril (Lotensin)	10–40	Hypotension, cough, hyperkalemia, dizziness, headache, diarrhea, nausea, rash (primarily captopril), alteration or loss of taste perception (primarily captopril)	Contraindicated in patients with bilateral renal artery stenosis	$23.99
Captopril (Capoten)	25–100			$7.19-$9.40
Enalapril (Vasotec)	2.5–40			$12.99-$23.98
Fosinopril (Monopril)	10–40			$30-$30.99
Lisinopril (Prinivil, Zestril)	5–40			$14.89-$17.99
Moexipril (Univasc)	7.5–30			$36.99-$69.98
Perindopril (Aceon)	4–16			$65.15-$157.91
Quinapril (Accupril)	10–80			$19.99-$43.98
Ramipril (Altace)	1.25–20			$42-$123.98
Trandolapril (Mavik)	1–4			$16.65-$33.60
Angiotensin II receptor antagonists				
Candesartan (Atacand)	8–32	Hypotension, hyperkalemia, dizziness, fatigue, diarrhea	Recommended after intolerance or failure with ACE inhibitors	$67.70-$88.44
Eprosartan (Teveten)	400–800			$92.44
Irbesartan (Avapro)	75–300			$74.85-$91.15
Losartan (Cozaar)	25–100			$58.99-$92.22
Olmesartan (Benicar)	20–40			$67.06-$75.34
Telmisartan (Micardis)	20–80			$75.20-$85.01
Valsartan (Diovan)	80–320			$79.31-$122.27
Beta-blockers				
Atenolol (Tenormin)	25–100	Bradycardia, hypotension, GI disturbances, dizziness, fatigue, insomnia, heart failure, reduced peripheral circulation, impotence, depression, nightmares,		$5-$5.30
Bisoprolol (Zebeta)	2.5–10			$16.50-$35.13
Carvedilol (Coreg)	12.5–50		Approved for CHF Has alpha-adrenergic–blocking activity	$29.98-$32

Bisoprolol (Zebeta)	2.5–10	disturbances, dizziness, fatigue, insomnia, heart failure, reduced peripheral circulation, impotence, depression, nightmares, bronchospasm in patients with asthma, masks symptoms of or potentiates hypoglycemia in patients with diabetes, hypertriglyceridemia		$16.50-$35.13
Carvedilol (Coreg)	12.5–50		Approved for CHF Has alpha-adrenergic–blocking activity	$29.98-$32
Labetalol (Normodyne, Trandate)	200–800		Has alpha-adrenergic–blocking activity	$20.99-$57.98
Metoprolol tartrate (Lopressor)			Metoprolol succinate approved for CHF	$12.99-$25.98
Metoprolol succinate (Toprol XL)	50–100		Metoprolol succinate approved for CHF	$12.99-$25.98 $25.99-$33.88
Nadolol (Corgard)	40–120			$15.99-$47.97
Propranolol (Inderal)	40–160			$8.40-$10.66
Calcium channel blockers				
Dihydropyridines				
Amlodipine (Norvasc)	2.5–10	Peripheral edema, palpitations, headache, dizziness, fatigue, nausea		$5.33-$8
Felodipine (Plendil)	2.5–20			$37.99-$115.45
Nicardipine (Cardene SR)	60–120			$101.19-$125.99
Nifedipine (Adalat CC, Procardia XL)	30–60			$54.19-$72.79
Nondihydropyridines				
Diltiazem (Cardizem CD, Dilacor XR, Tiazac)	120–420	Dizziness, headache, bradycardia, hypotension, constipation, nausea, weakness, gingival hyperplasia, edema, AV block	Decrease AV nodal conduction Has negative inotropic effects	$25.99-$45.66
Verapamil sustained-release capsule (Verelan)	120–480			$25.99-$75.98
Verapamil sustained-release tablet (Calan SR, Isoptin SR)				$21.99-$37.98
Diuretics				
Loop				
Bumetanide (Bumex)	0.5–2	Hyperuricemia, hypokalemia, hyperglycemia, hypocalcemia, increased urination at onset of therapy, dizziness, weakness, muscle cramps, photosensitivity, hypotension	Preferred diuretics for patients with severe chronic kidney disease/failure	$5.67-$19.31
Furosemide (Lasix)	20–80			$4.20-$8.39
Torsemide (Demadex)	2.5–10			$9.50-$19.99
Thiazide				
Chlorthalidone	12.5–25	Similar electrolyte abnormalities as loop diuretics except for hypercalcemia, increased urination at onset of therapy, dizziness, weakness, muscle cramps, photosensitivity, hypotension		$5-$10
Hydrochlorothiazide (Microzide, HydroDiuril)	12.5–50			$4.80-$14.99
Indapamide (Lozol)	1.25–2.5			$5-$13.99
Metolazone (Zaroxolyn)	1.25–5			$21.50-$37.37
Potassium-sparing				
Amiloride (Midamor)	5–10	Hyperkalemia, GI disturbances, muscle cramps, weakness, headache, dizziness		$50.45-$100.90
Triamterene (Dyrenium)	50–100			$41.99-$64.04
Renin inhibitor				
Aliskiren (Tekturna)	150–300	Diarrhea, headache, dizziness, fatigue, cough		$82.38-$101.8
Vasodilators				
Hydralazine (Apresoline)	25–100	Tachycardia, palpitations, GI disturbances, headache		$7.80-$27.98
Minoxidil (Loniten)	2.5–80	Tachycardia, hypertrichosis, sodium and water retention		$10-$143.97

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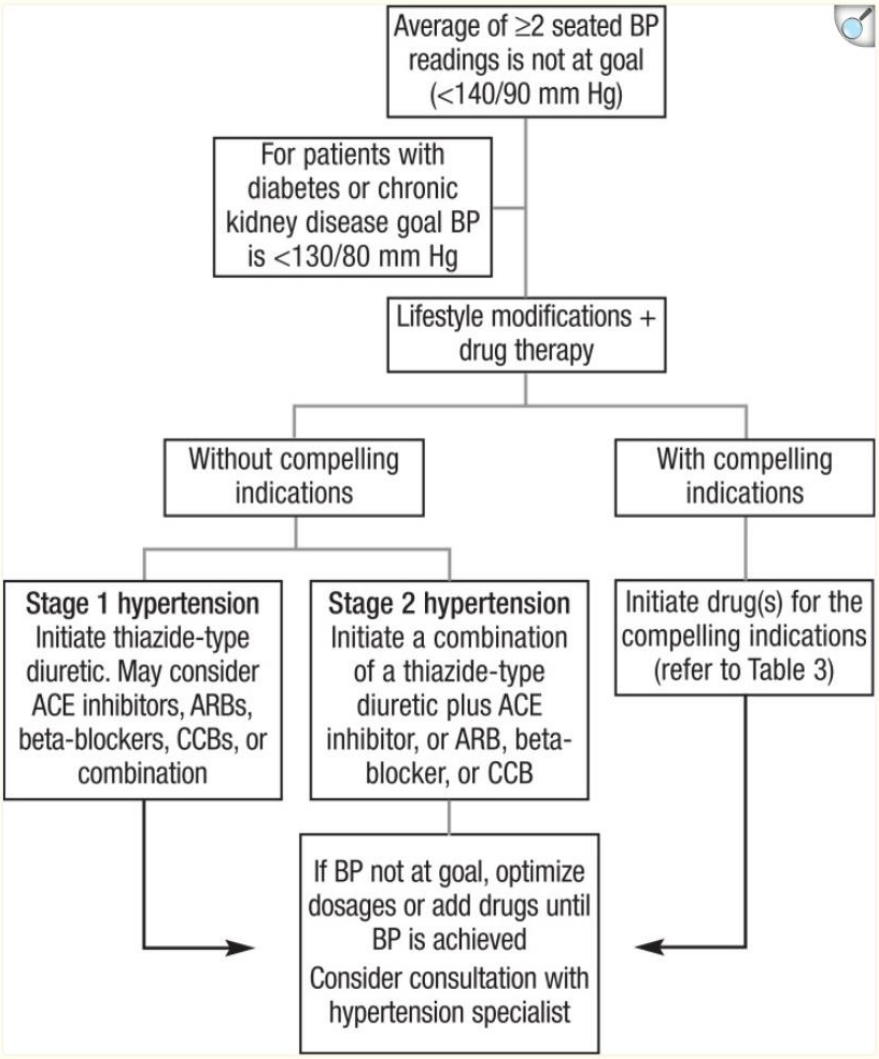
Feedback

Figure. Treatment Algorithm for Hypertension.



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ACE indicates angiotensin-converting enzyme; ARBs, angiotensin receptor blockers; CCBs, calcium channel blockers.

Source: Chobanian AV, et al. Hypertension. 2003;42:1206–1252.

Diuretics

Diuretics come in three main types: thiazide diuretics, loop diuretics, and potassium-sparing diuretics. Thiazide Diuretics Thiazide diuretics work by blocking the reabsorption of sodium and chloride ions in the distal convoluted tubule of the nephron, which helps increase the excretion of sodium and water. Numerous landmark clinical trials have shown that thiazides are effective in lowering the risk of cerebrovascular events, congestive heart failure, and coronary artery disease (CAD). Some key studies include the VA Cooperative Studies from

the 1960s, the Systolic Hypertension in the Elderly Program (SHEP) from the 1980s, and the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT) from the 1990s. The ALLHAT trial, in particular, demonstrated that thiazide diuretics were more effective than other antihypertensive medications in terms of secondary clinical outcomes and cost-effectiveness. This evidence played a significant role in shaping clinical guidelines, leading the Joint National Committee (JNC-7) to recommend thiazide diuretics as the first-line treatment for managing hypertension.

Recent clinical studies have shaken up previous treatment preferences, especially with insights from the Avoiding Cardiovascular Events Through Combination Therapy in Patients Living with Systolic Hypertension (ACCOMPLISH) trial. This research showed that combining benazepril with amlodipine outperformed the benazepril–hydrochlorothiazide combo in lowering cardiovascular (CV) events for high-risk patients dealing with hypertension. A key difference between earlier landmark studies and ACCOMPLISH is the specific thiazide used—chlorthalidone in the past versus hydrochlorothiazide in ACCOMPLISH. This has sparked the idea that the benefits we once thought were due to a "class effect" might actually be tied to the specific drugs, with hydrochlorothiazide showing less favorable outcomes compared to chlorthalidone. As a result, many doctors are now leaning towards chlorthalidone as their go-to thiazide diuretic. Still, thiazide diuretics remain popular as first-line treatments due to their proven effectiveness and cost benefits. Loop Diuretics Loop diuretics work their magic at the thick ascending limb of the loop of Henle by selectively blocking the $Na^+/K^+/2Cl^-$ cotransporter, which significantly cuts down on sodium chloride reabsorption. Because this part of the nephron has a high reabsorptive capacity, loop diuretics are quite powerful. They can be used alone or alongside other treatments, and they're especially helpful for patients with conditions like congestive heart failure, acute pulmonary edema, or serious kidney issues. Plus, these medications are affordable and widely available in generic forms.

Potassium-sparing diuretics

Potassium-sparing diuretics work their magic in the distal nephron, particularly in the distal and cortical collecting tubules, where they help reduce sodium reabsorption. They do this either by blocking aldosterone receptors (like spironolactone and eplerenone) or by inhibiting epithelial sodium channels (such as amiloride and triamterene). While these medications have a relatively mild diuretic effect and aren't usually used on their own, they play a crucial role as add-on treatments, especially when it's important to keep potassium levels in check.

Aldosterone antagonists, especially spironolactone and eplerenone, have shown to significantly lower the risk of complications and death in patients dealing with heart failure. However, it's important to be cautious when using them alongside ACE inhibitors or ARBs, as this combination can lead to dangerously high potassium levels.

Angiotensin-Converting Enzyme (ACE) Inhibitors ACE inhibitors are a class of medications that help lower blood pressure by blocking the conversion of angiotensin I into angiotensin II. They also boost levels of bradykinin and prostaglandins, which further promote blood vessel relaxation. Clinical guidelines recommend ACE inhibitors for patients with strong indications, including heart failure, those recovering from a heart attack, individuals at high risk for coronary artery disease, diabetes, chronic kidney disease, and those who have had a stroke. Research shows that there aren't significant differences in how well these medications lower blood pressure compared to each other. Plus, cost-effectiveness studies reveal that ACE inhibitors are generally more affordable than Angiotensin II Receptor Blockers (ARBs), making them the preferred choice for initial treatment. Angiotensin II Receptor Blockers (ARBs) ARBs work by blocking the action of angiotensin II at its receptors, which helps prevent blood vessel constriction and fluid retention caused by aldosterone. Major studies, like the ONTARGET trial, have shown that ARBs (such as telmisartan) are just as effective as ACE inhibitors in improving cardiovascular and kidney health. However, while they offer similar benefits, ARBs tend to be more expensive over the long term. Because of this, they are usually prescribed for patients who can't tolerate ACE inhibitors, particularly those who experience side effects like a persistent cough or angioedema. Renin Inhibitors Aliskiren is the first direct renin inhibitor, and it works by stopping the conversion of angiotensinogen to angiotensin I. It can be used alone or in combination with other medications. Clinical trials suggest that aliskiren is on par with other blood pressure medications and may even provide better reductions in systolic blood pressure compared to ramipril. It also shows promise in protecting kidney function, particularly by reducing urinary albumin levels in patients with type 2 diabetes. However, due to its cost and the strong evidence backing ACE inhibitors and ARBs, aliskiren is usually considered a second-line option.

Calcium Channel Blockers (CCBs)

CCBs help lower blood pressure by blocking calcium from entering the smooth muscle cells in your blood vessels, which leads to relaxation and widening of those vessels. They come in two main types: dihydropyridines, which mainly target the blood vessels in your arms and legs, and nondihydropyridines, which affect both the heart and blood vessels.

Dihydropyridines have been shown to effectively reduce the risk of heart-related issues, death, and strokes, especially in older adults. On the other hand, nondihydropyridines are also useful for treating irregular heartbeats. Both types work well on their own and are usually well tolerated. Research, including studies like ACCOMPLISH, backs their use as first-line treatments, especially when paired with ACE inhibitors.

Beta-Adrenergic Blockers

Beta-blockers help lower blood pressure mainly by blocking β_1-adrenergic receptors, which leads to a slower heart rate, less forceful heart contractions, and lower overall heart output. They also help reduce the release of renin, which plays a role in regulating blood pressure. These medications are particularly useful for patients who have had a heart attack, suffer from heart failure, or have thickened heart walls.

There are some differences among beta-blockers, such as how selective they are for certain receptors and whether they have intrinsic sympathomimetic activity (ISA). Cardioselective beta-blockers mainly target β_1 receptors, while nonselective ones affect both β_1 and β_2 receptors. Some, like labetalol and carvedilol, even have properties that block alpha receptors, which can enhance their blood pressure-lowering effects. Beta-blockers with ISA, like pindolol, act as partial agonists and can be helpful for patients who might experience a slow heart rate.

However, for uncomplicated essential hypertension, beta-blockers are no longer the go-to first-line treatment. Evidence suggests they may not lower blood pressure as effectively and could be linked to a higher risk of stroke and overall mortality, particularly in older adults.

Alpha-Adrenergic Blockers

Alpha-blockers help lower blood pressure by blocking α_1-adrenergic receptors, which leads to the widening of blood vessels. They can be quite helpful for patients dealing with high blood pressure and benign prostatic hyperplasia, but they're not usually the first choice for treatment. Research from the ALLHAT study showed that doxazosin might increase cardiovascular risks compared to chlorthalidone.

Direct Vasodilators

Medications like hydralazine and minoxidil work by directly relaxing the smooth muscles in the arterioles through different mechanisms. While they are effective, their side effects can

limit their use as first-line treatments. These drugs are generally saved for cases of resistant hypertension or severe situations, often used alongside beta-blockers and diuretics to help manage issues like reflex tachycardia and fluid retention. It's worth noting that minoxidil can lead to unwanted hair growth, and long-term use of hydralazine may increase the risk of drug-induced lupus erythematosus.

Resistant Hypertension

Resistant hypertension is when a patient can't reach their target blood pressure despite sticking to a treatment plan that includes at least three antihypertensive medications, one of which should be a diuretic, all at the highest doses they can tolerate. To manage this condition, it's crucial to identify any factors that might be contributing, such as incorrect blood pressure readings, not taking medications as prescribed, inadequate dosing, or the white-coat effect—often referred to as pseudoresistance.

Other factors that can play a role include certain medications (like NSAIDs and decongestants), drinking too much alcohol, a high-sodium diet, obesity, diabetes, and being older. It's also important to rule out any secondary causes of hypertension.

When it comes to treatment, the focus is on aggressive pharmacologic strategies, with diuretics being the foundation of care due to their role in managing fluid volume. For patients with reduced kidney function (eGFR <30 mL/min), loop diuretics are typically preferred over thiazides.

If blood pressure (BP) isn't kept in check, doctors might consider adding a fourth medication—often spironolactone—since research shows it can significantly lower BP regardless of a person's background or health status. If someone can't tolerate spironolactone, eplerenone can be a good alternative. If treatment continues to fall short, it might be time to refer the patient to a hypertension specialist.

CONCLUSION

Hypertension is a widespread health issue around the world, but there are plenty of proven strategies—both medication-based and lifestyle changes—that can help reduce its risks and complications. It's important to start making lifestyle changes early and stick with them over the long haul. Many patients will need a combination of medications, especially as their hypertension progresses. Ultimately, the main goal of treatment is to reach those target BP

levels. Good communication between healthcare providers and patients is crucial for managing this condition effectively.

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