



MODERN APPROACHES TO THE DIAGNOSIS AND MANAGEMENT OF ARTERIAL HYPERTENSION

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ABSTRACT: *Arterial hypertension (AH) remains the leading global risk factor for cardiovascular morbidity and mortality. This article provides a comprehensive overview of the current diagnostic criteria, the pathophysiology of blood pressure elevation, and contemporary management strategies. It emphasizes the transition from monotherapy to initial combination therapy and highlights the critical role of lifestyle modifications in long-term blood pressure control. The discussion focuses on patient adherence and the prevention of target organ damage, such as stroke, myocardial infarction, and chronic kidney disease.*

KEYWORDS: *Arterial hypertension, Blood pressure, Cardiovascular risk, Antihypertensive therapy, Prevention, Target organ damage.*

1. INTRODUCTION

Arterial hypertension is often referred to as the "silent killer" because it frequently remains asymptomatic until significant vascular damage has occurred. According to the World Health Organization, an estimated 1.28 billion adults aged 30–79 years worldwide have hypertension, most living in low- and middle-income countries.

The clinical significance of AH lies in its direct correlation with major cardiovascular events. Persistent high blood pressure leads to structural changes in the arterial walls, resulting in atherosclerosis and impaired organ perfusion. Despite the availability of effective pharmacological treatments, blood pressure control rates remain suboptimal globally. This article aims to explore modern diagnostic tools and the shift toward personalized therapeutic interventions.



2. MAIN PART AND DISCUSSION

2.1. Diagnostic Innovations

Modern diagnosis has moved beyond the traditional office blood pressure measurement. **Ambulatory Blood Pressure Monitoring (ABPM)** and **Home Blood Pressure Monitoring (HBPM)** are now considered gold standards. These methods help identify "White Coat Hypertension" (high only in the clinic) and "Masked Hypertension" (normal in the clinic but high at home), providing a more accurate cardiovascular risk profile.

2.2. Therapeutic Strategies

The management of hypertension is categorized into two main pillars:

1. **Lifestyle Modifications:** This includes the DASH (Dietary Approaches to Stop Hypertension) diet, reduction of sodium intake to less than 5g per day, regular aerobic exercise (at least 150 minutes per week), and weight management.

2. **Pharmacological Intervention:** Current guidelines from the European Society of Cardiology (ESC) and the American Heart Association (AHA) recommend five main classes of drugs:

- ACE Inhibitors (e.g., Lisinopril)
- Angiotensin II Receptor Blockers (ARBs) (e.g., Valsartan)
- Calcium Channel Blockers (CCBs) (e.g., Amlodipine)
- Thiazide-like Diuretics
- Beta-blockers

2.3. Discussion: The Shift to Combination Therapy

One of the most significant shifts in modern hypertension management is the early use of **Single-Pill Combinations (SPCs)**. Research shows that starting treatment with two drugs instead of one improves patient adherence and achieves target blood pressure levels much faster. The main challenge remains "clinical inertia"—where physicians do not escalate treatment despite high readings—and "patient non-compliance," often due to the lack of immediate symptoms. Discussion



also revolves around the impact of digital health, such as mobile apps and wearable sensors, in monitoring patient progress in real-time.

3. CONCLUSION

Arterial hypertension is a manageable condition, yet it remains a primary driver of the global burden of disease. Successful management requires a dual approach: early, accurate diagnosis using out-of-office monitoring and a proactive treatment strategy centered on combination therapy. Educating patients about the necessity of lifelong adherence to medication and healthy lifestyle choices is essential to reduce the incidence of life-threatening complications like stroke and heart failure.

4. REFERENCES

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