

(1) Uncontrolled Hypertension: TSOc 2026 Definition, Epidemiology &
Pathophysiology

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Hypertension remains a leading cause of cardiovascular and renal disease worldwide. Despite improved awareness and treatment availability, many patients still fail to achieve target blood pressure control. The TSOc 2026 definition of uncontrolled hypertension highlights not only elevated office blood pressure, but also the importance of home blood pressure monitoring, cardiovascular risk assessment, medication adherence, and lifestyle factors. Epidemiological studies in Taiwan and Asia continue to show suboptimal blood pressure control, especially in patients with chronic kidney disease, diabetes, obesity, and high salt intake. The pathophysiology is multifactorial, involving sympathetic overactivity, renin–angiotensin–aldosterone system activation, endothelial dysfunction, inflammation, and vascular remodeling. A better understanding of these mechanisms is essential for improving hypertension management and reducing cardiovascular complications.

(2) Primary Aldosteronism: Screening, Diagnostic Pathways, and the Role of
Confirmatory Testing

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Primary aldosteronism (PA) is one of the most common causes of secondary hypertension and is associated with increased cardiovascular and renal complications. Early detection is essential because targeted treatment can significantly improve clinical outcomes. Current screening strategies focus on high-risk populations, including patients with resistant hypertension, hypokalemia, adrenal incidentaloma, obstructive sleep apnea, or early-onset hypertension. The aldosterone-to-renin ratio (ARR) remains the cornerstone of initial screening; however, interpretation may be influenced by medications, sodium intake, and potassium status. Following a positive screening test, confirmatory testing is recommended to establish autonomous aldosterone secretion. Common confirmatory tests include saline infusion, oral sodium loading, captopril challenge, and fludrocortisone suppression tests. Understanding appropriate diagnostic pathways and the role of confirmatory testing is essential for accurate diagnosis, subtype classification, and individualized management of PA.

(3) Uncontrolled Hypertension: Confirming the TSOC Definition — Standardized Evaluation & Assessment

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Uncontrolled hypertension remains a major challenge in cardiovascular prevention and is associated with increased risks of stroke, heart failure, chronic kidney disease, and mortality. The TSOC definition emphasizes that accurate confirmation of uncontrolled hypertension requires standardized evaluation beyond a single office blood pressure measurement. Comprehensive assessment should include repeated office measurements using validated devices, home blood pressure monitoring, and ambulatory blood pressure monitoring when appropriate to exclude white-coat or masked hypertension. Evaluation of medication adherence, lifestyle factors, secondary causes of hypertension, and cardiovascular risk profiles is also essential. In addition, assessment of target organ damage and comorbid conditions may help guide individualized treatment strategies. A standardized and systematic approach is critical for accurate diagnosis, risk stratification, and optimization of blood pressure control.

(4) Primary Aldosteronism: Tips and Tricks in the Diagnosis of PA

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Primary aldosteronism (PA) is an underdiagnosed but potentially curable cause of secondary hypertension. Accurate diagnosis is essential because early treatment can reduce cardiovascular and renal complications. Screening with the aldosterone-to-renin ratio (ARR) remains the first step, but careful interpretation is required due to the influence of antihypertensive medications, potassium levels, sodium intake, and posture. Proper patient preparation, including correction of hypokalemia and adjustment of interfering medications when feasible, can improve diagnostic accuracy. Confirmatory testing should be selected according to patient characteristics and institutional experience. In clinical practice, awareness of common pitfalls, appropriate timing of blood sampling, and integration of biochemical findings with imaging studies are crucial for avoiding misdiagnosis. Understanding these practical tips and diagnostic nuances can facilitate earlier recognition and optimized management of PA.

(5)Uncontrolled Hypertension: BASICS→SMARTER Framework, Treatment Optimization & TSOC Consensus Recommendations

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Uncontrolled hypertension remains a significant challenge despite advances in antihypertensive therapy. Effective management requires not only blood pressure reduction but also comprehensive evaluation of adherence, lifestyle, comorbidities, and secondary causes. The BASICS→SMARTER framework proposed in the TSOC consensus provides a structured and practical approach for treatment optimization. This strategy emphasizes standardized blood pressure assessment, improvement of medication adherence, lifestyle modification, risk stratification, and individualized therapeutic adjustment. Special consideration should be given to obesity, chronic kidney disease, sleep disorders, and resistant hypertension, which commonly contribute to poor blood pressure control. In addition, incorporation of home blood pressure monitoring, combination therapy, and multidisciplinary care may further improve long-term outcomes. The TSOC consensus recommendations aim to provide clinicians with a systematic and evidence-based approach to achieve better blood pressure control and reduce cardiovascular and renal complications.

(6)Treatment of Primary Aldosteronism: Surgery, Medical Therapy, and Emerging Paradigms

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Primary aldosteronism (PA) is a common and potentially curable form of secondary hypertension associated with increased cardiovascular and renal risks. Appropriate treatment depends on accurate subtype classification and individualized patient assessment. Adrenalectomy is recommended for patients with unilateral aldosterone-producing adenoma and may achieve significant blood pressure improvement or cure. For bilateral adrenal hyperplasia or patients unsuitable for surgery, mineralocorticoid receptor antagonists remain the cornerstone of medical therapy. Optimization of potassium balance, cardiovascular risk reduction, and long-term blood pressure control are important therapeutic goals. Emerging paradigms in PA management include earlier screening, precision medicine approaches, novel biomarkers, advanced imaging techniques, and improved strategies for subtype diagnosis. A comprehensive and multidisciplinary treatment approach is essential to improve clinical outcomes and reduce target organ damage in patients with PA.