Who Should be Screened for Primary Aldosteronism?

Background

Primary aldosteronism (PA) is the most common endocrine cause of secondary hypertension with an estimated prevalence of 5% to 14% of individuals with hypertension seen in primary care (34-36) and up to 30% in referral centers (37-39). PA is particularly prevalent in individuals with specific clinical characteristics or comorbid conditions (Table 3).

PA is characterized by excessive production of aldosterone (49), leading to higher blood pressure (BP), renal injury, and an elevated risk of stroke, atrial fibrillation, and other cardiovascular diseases (1, 2). Detection of PA allows the use of specific treatments—such as mineralocorticoid receptor antagonists (MRAs), or adrenalectomy for those with lateralizing disease—that can effectively control BP, correct hypokalemia, and reduce cardiovascular risk (7-9)

Despite the potential benefits of treatment, PA remains underdiagnosed, in part due to limited screening in routine clinical practice (50, 51). Many individuals with PA, even those with high-risk features, such as resistant hypertension and hypokalemia (52), are never identified, leading to suboptimal management of their hypertension and cardiovascular risk. Expanding PA screening to all hypertensive individuals could increase the detection rate, allowing more individuals to benefit from targeted therapies and potentially reducing long-term cardiovascular risks.

However, the benefits of widespread screening must be weighed against certain challenges. The accuracy of screening tests, such as aldosterone concentration, renin concentration or activity, and the aldosterone to renin ratio (ARR), is influenced by various factors, including medication use, dietary sodium intake, and test conditions. False positives can occur, resulting in unnecessary aldosterone suppression testing or even inappropriate PA treatment in individuals without the condition. Access to diagnostic and subtyping tests and the availability of specialized treatments may also undermine the feasibility of universal screening unless alternative strategies are proposed.

Therefore, the guideline addresses the question of whether care with PA screening should be implemented for all individuals with hypertension.

Question 1. Should care that includes primary aldosteronism screening be applied to all individuals with hypertension, compared with care without screening?

Recommendation 1

In all individuals with hypertension, we suggest screening for primary aldosteronism (PA) (2 | ⊕⊕OO).

Technical remarks:

- This is a conditional recommendation, with implementation depending on contextual factors such as available resources, local expertise, and healthcare system capacity, which may affect feasibility and prioritization.
- This recommendation emphasizes care that is informed and guided by screening, with a positive screening result serving as the critical first step in the care process for individuals with PA.
- PA screening includes measurement of serum/plasma aldosterone concentration and plasma renin (concentration or activity) with determination of the aldosterone to renin ratio (ARR). Potassium is also assessed—not for screening itself—but to aid in the accurate interpretation of aldosterone (refer to Question 3).

Summary of the Evidence

The meta-analysis results, a detailed summary of the evidence and Evidence to Decision (EtD) tables can be found online at: https://guidelines.gradepro.org/profile/goKsLjFSyDQ.

Table 3. Prevalence of primary aldosteronism in different subgroups

Setting	Prevalence	Reference
Hypertension in Primary Care	5.9% (range, 3.2-14.0)	(34-36, 39)
Hypertension in referral centers	7.2% (range, 0.7-21.9)	(39)
Hypertension in young adults (ages 18-40 years)	16.2%	(39)
[a]Grade 1 hypertension	3.9%-15.7%	(23, 34)
[a]Grade 2 hypertension	9.7%-21.6%	(23, 34, 37)
[a]Grade 3 hypertension	11.9%-19%	(34, 37)
Resistant hypertension	11.3%-29.1%	(23, 40-42)
Hypertension and hypokalemia	28.1%	(43)
Hypertension and adrenal incidentaloma	4.4% (range, 0.4-24.6%)	(44)
Hypertension and atrial fibrillation[b]	42.5%	(45)
Hypertension and type 2 diabetes mellitus	11.3%-19.1%	(46, 47)

Abbreviations: DBP, diastolic blood pressure; SBP, systolic blood pressure.
[a]Grades 1, 2, and 3 hypertension refer to the classification of the 2023 European Society of Hypertension guideline (48). Grade 1, SBP 140-159 mmHg and/or DBP 90-99 mmHg; grade 2, 160-179 mmHg and/or DBP 100-109 mmHg; grade 3, SBP ≥180 mmHg and/or DBP ≥110 mmHg.
[b]If unexplained by structural heart disease and other conditions like hyperthyroidism.