



Primary Aldosteronism, Vitamin D Testing, Sodium Intake, Blood Pressure Medications

Alan S. Peterson, MD

*Emeritus Director, Environmental and Community Medicine
Walter L. Aument Family Health Center*

DIAGNOSING PRIMARY ALDOSTERONISM¹

In approximately 6% of cases of hypertension, primary aldosteronism is the underlying cause, yet only 2% of these patients are formally diagnosed. Case detection means testing patients with a first-degree relative with primary aldosteronism, resistant hypertension, hypokalemia, an adrenal nodule, atrial fibrillation, obstructive sleep apnea, or a family history of early cerebrovascular accident.

Testing involves using the aldosterone-renin ratio; ratios of >30 indicate independent aldosterone secretion (i.e., aldosteronism). Confirmatory testing should then be performed using either the captopril challenge, oral or intravenous salt loading, or fludrocortisone suppression; persistently high aldosterone levels yield the diagnosis.

Following these, adrenal computed tomography and adrenal vein sampling help differentiate unilateral from bilateral adrenal aldosterone production. Treatment of unilateral primary aldosteronism includes adrenalectomy; bilateral disease may be treated with mineralocorticoid receptor antagonists, such as spironolactone or eplerenone.

ENDOCRINE SOCIETY ADVISES AGAINST VITAMIN D TESTING

New Endocrine Society guidelines call for limiting vitamin D supplementation beyond the daily recommended intake to specific risk groups and advises against routine 25-hydroxyvitamin D [25(OH)D] testing in healthy individuals.

The guidelines are based on evidence presented in June at the Endocrine Society annual meeting and simultaneously published in the *Journal of Clinical Endocrinology and Metabolism*.² The evidence suggests that the following may benefit from vitamin D supplementation:

1. Children ages 1-18 years, to prevent rickets and potentially lower the risk for respiratory tract infections.

2. Pregnant people, to lower the risk for maternal and fetal or neonatal complications.
3. Adults older than 75 years, to lower the risk for mortality.
4. Adults with prediabetes, to lower the risk for type 2 diabetes.

In those groups, the recommendation is for daily, rather than intermittent, empiric vitamin D supplementation of more than what was recommended in 2011 by the National Academy of Medicine, then called the Institute of Medicine: 600 IU/d for those ages 1-70 years and 800 IU/d for those older than 70 years.

The Endocrine Society acknowledges that the optimal dose for these populations isn't known. The guidelines recommend against testing for blood vitamin D levels in the general population, including those with obesity or darker complexions.

Those with established osteoporosis or osteopenia are not covered by this guideline, nor are patients with several diseases, such as chronic kidney disease or inflammatory bowel disease. There remain more questions than answers about who to test, who to supplement, and to what long-term benefit.

MOST ADULTS WITH HEART DISEASE CONSUME TOO MUCH SODIUM

Individuals with heart disease, on average, consume more than twice the recommended daily sodium intake, according to a study presented at the Annual Scientific Session of the American College of Cardiology (ACC) in April.

Current U.S. Department of Agriculture guidelines recommend that most adults limit their sodium intake to less than 2,300 mg/day; for individuals with cardiovascular disease, the limit is even lower at 1,500 mg/day, according to guideline recommendations from the ACC and the American Heart Association.

The study found that among a sample of more than 3,100 people with heart disease, 89% consumed

more than the recommended daily maximum of 1,500 mg of sodium and, on average, study participants consumed more than twice this amount.

Researchers estimated sodium intake based on questionnaires in which participants were asked to report everything they had consumed in 24 hours, and study participants with cardiovascular disease consumed an average of 3,096 mg of sodium per day, compared to the national average of 3,400 mg/day reported by the Centers for Disease Control and Prevention. Socioeconomics, gender, race, nor age seemed to play a role in these outcomes.

Patients can lower their sodium intake by preparing more meals at home and reading food labels, keeping in mind that a serving of any food should have less than or equal to 140 mg of sodium.

Researchers further suggest continued and better education about the benefits of limiting sodium.

COMMON BLOOD PRESSURE DRUG MAY INCREASE RISK OF BLEEDING

People with an irregular heart rhythm taking diltiazem may be at a greater risk of serious bleeding, according to a recent study in *JAMA*.³

Choosing Wisely

Originally published in the Winter 2012 issue of JLGH in conjunction with the American Board of Internal Medicine's now-complete Choosing Wisely campaign, this edited reprint is offered to remind physicians of the importance of talking with patients about what tests, treatments, and procedures are needed — and which ones are not.

RECOMMENDATIONS FROM THE AMERICAN ACADEMY OF ALLERGY, ASTHMA & IMMUNOLOGY

1 In the evaluation of patients with allergies, don't perform unproven diagnostic tests, such as immunoglobulin G (IgG) testing or an indiscriminate battery of immunoglobulin E (IgE) tests. Appropriate diagnosis and treatment of allergies requires specific IgE testing (either skin or blood tests) based on the patient's clinical history. The use of other tests or methods to diagnose allergies is unproven and can lead to inappropriate diagnosis and treatment. Appropriate diagnosis and treatment is both cost effective and essential for optimal patient care.

2 For patients with uncomplicated rhinosinusitis, don't order sinus CTs or indiscriminately prescribe antibiotics.

3 In patients with chronic urticaria, don't routinely do diagnostic testing. In the overwhelming majority of such patients, a definite etiology is not identified. While limited laboratory testing may be warranted to exclude underlying causes, and targeted laboratory testing based on clinical suspicion is appropriate, routine extensive testing is neither cost effective nor associated with improved clinical outcomes. Skin or serum-specific IgE testing for inhalants or foods is not indicated unless there is a clear history implicating an allergen as a provoking or perpetuating factor for urticaria.⁴

4 In patients with recurrent infections, don't recommend replacement immunoglobulin therapy

unless impaired antibody responses to vaccines are demonstrated. Immunoglobulin (gamma globulin) replacement is expensive and does not improve outcomes unless there is impairment of antigen-specific IgG antibody responses to vaccines, immunizations, or natural infections. Low levels of immunoglobulins (isotypes or subclasses), without impaired antigen-specific IgG antibody responses, do not indicate a need for immunoglobulin replacement therapy.

Exceptions include IgG levels <150 mg/dl and genetically defined/suspected disorders. Measurement of IgG subclasses is not routinely useful in determining the need for immunoglobulin therapy. Selective IgA deficiency is not an indication for administration of immunoglobulin.

5 The diagnosis and management of patients with asthma should not be done without spirometry. Clinicians often rely solely upon symptoms to diagnose and manage asthma, but these symptoms may be misleading or from alternate causes, so spirometry is essential to confirm the diagnosis in patients who can perform this procedure.

Guidelines highlight spirometry's value in stratifying the severity of the disease and monitoring its control. The history and physical exam alone may over- or underestimate asthma control. Beyond the increased cost of care, the repercussions of misdiagnosing asthma include a delay of correct diagnosis and treatment.

Atrial fibrillation, the most common type of irregular heart rhythm, can lead to blood clots or stroke if left untreated. To prevent complications, people with atrial fibrillation are often prescribed anti-clotting medications and medications to control heart rate.

The study reviewed health records from 2012 and 2020, looking at Medicare beneficiaries ages 65 years or older with atrial fibrillation who started taking apixaban or rivaroxaban in addition to their diltiazem or metoprolol. Patients receiving diltiazem were 20% more likely to experience bleeding-related hospitalization and death. Risks seemed to be increased in those taking higher doses of medications. There were no significant differences in rates of stroke, systemic embolism, or hemorrhaging.

These results are significant because they show that while there are some benefits to using diltiazem over metoprolol, and vice versa, differences in metabolism may introduce some increased risks of bleeding in those taking diltiazem.

The research group will continue to investigate what causes different reactions to the same medica-

tions and identify ways to potentially monitor drug levels. “Genetic differences can impact how different people metabolize medications,” said Eli Zimmerman, MD, a neurology professor at Northwestern Medicine and a co-author of the study.

REFERENCES

1. Quencer KB, Rugge JB, Senashova O. Primary aldosteronism. *Am Fam Physician*. 2023;108(3):273-277.
2. Demay MB, Pittas AG, Bikle DD, et al. Vitamin D for the prevention of disease: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab*. 2024;109(8):1907-1947.
3. Ray WA, Chung CP, Stein CM, et al. Serious bleeding in patients with atrial fibrillation using diltiazem with apixaban or rivaroxaban. *JAMA*. 2024;331(18):1565-1575.
4. Bernstein IL, Li JT, Berstein DI, et al. Allergy diagnostic testing: an updated practice parameter. *Ann Allergy Asthma Immunol*. 2008;100 (3 Suppl 3):S1-S148.

Alan S. Peterson, MD
Walter L. Aument Family Health Center
317 Chestnut St., Quarryville, PA 17566
717-786-7383
Alan.Peterson@pennmedicine.upenn.edu

JLGH FALL 2024 RECAP

Q&A for Extended Learning

The Fall issue of The Journal of Lancaster General Hospital offered articles on gender-affirming hormone therapy and pediatric behavioral health, as well as a photo quiz on mastoiditis and other practice recommendations. Review the questions and answers below to see how much you remember from the issue. Need a refresher? All issues of JLGH are available at JLGH.org.

Q What are the World Professional Association for Transgender Health (WPATH) Standards of Care guidelines to begin gender-affirming hormone therapy in adults (≥18 yo)?

A Patients should have marked and sustained gender incongruence, the ability to consent to starting therapy and understanding of reproductive impact, and appropriate co-management of their mental and physical health conditions, especially ones that could negatively affect or be negatively affected by hormone therapy.

Q How can we differentiate ADHD from comorbid conditions in pediatric patients?

A Rule out language barriers and developmental delay; use more than one screening tool to tease out, for example, symptoms of anxiety or autism; inquire about social and family issues; and try parent management training before prescribing medications, focusing on the symptoms that cause the most impairment.

Q What are potential complications of improperly treated mastoiditis?

A Potential complications include permanent hearing loss, nerve palsy, osteomyelitis, petrositis, Gradenigo's syndrome, labyrinthitis, and intracranial extension — including meningitis and subdural empyema, sigmoid sinus thrombosis, and abscess formation.

Q Although breast cancer screening recommendations differ, what are the U.S. Preventative Services Task Force recommendations regarding breast cancer screening?

A The Task Force recommends that all women get screened for breast cancer every other year, starting at age 40 and continuing through age 74. This is a “B” recommendation.