Osteoporosis, Cardiovascular Disease, Urinary Tract Infection, Radon Exposure

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TREATMENT OF PRIMARY OSTEOPOROSIS TO PREVENT FRACTURES IN ADULTS[1]

A new guideline from the American College of Physicians (ACP) updates its 2017 recommendations on pharmacologic treatment of primary osteoporosis or low bone mass to prevent fractures in adults.

The ACP Clinical Guidelines Committee based these new recommendations on an updated systematic review of evidence and evaluated them using the GRADE (Grading of Recommendations Assessment, Development and Evaluation) system.

Recommendation 1: ACP recommends that clinicians use bisphosphonates for initial pharmacologic treatment to reduce the risk of fractures in:

a. Postmenopausal females diagnosed with primary osteoporosis (strong recommendation: high-certainty evidence).
b. Males diagnosed with primary osteoporosis (conditional recommendation: low-certainty evidence).

Recommendation 2: ACP suggests that clinicians use the RANK ligand inhibitor (denosumab) as a second-line pharmacologic treatment to reduce the risk of fractures in:

a. Postmenopausal females diagnosed with primary osteoporosis who have contraindications to, or experience adverse effects of, bisphosphonates (conditional recommendation: moderate-certainty evidence).
b. Males diagnosed with primary osteoporosis who have contraindications to or experience adverse effect of bisphosphonates (conditional recommendation: low-certainty evidence).

Recommendation 3: ACP suggests that clinicians use the sclerostin inhibitor (romosozumab, moderate-certainty evidence) or recombinant PTH (teriparatide, low-certainly evidence), followed by a bisphosphonate, to reduce the risk of fractures in females with primary osteoporosis with very high risk of fracture (conditional recommendation).

Recommendation 4: ACP suggests that clinicians take an individualized approach regarding whether to start pharmacologic treatment with a bisphosphonate in females over the age of 65 with low bone mass (osteopenia) to reduce the risk of fractures (conditional recommendation: low-certainly evidence).

AMERICAN HEART ASSOCIATION TOP CARDIOVASCULAR DISEASE ADVANCES FOR 2023[2]

Novel Antihypertensive May Boost Medication Adherence

Fewer than 25% of adults being treated for hypertension keep their blood pressure (BP) within the target range, often due to low compliance with daily oral medication. Zilebesiran, an investigational, subcutaneously administered RNA interference therapeutic targeting angiotensinogen, has the potential to change that.

In the Phase 2 KARDIA-1 study, a single injection of zilebesiran (Alnylam Pharmaceuticals) effectively lowered BP in adults with mild to moderate hypertension for up to six months, with an encouraging side-effect profile.

Thrombectomy Benefits Seen in Even the Most Severe Stroke Cases

Endovascular thrombectomy is a standard treatment of small or medium-sized strokes. Until recently, however, it wasn't clear if this minimally invasive approach would also benefit people with larger, more severe strokes, which account for up to one-quarter of all strokes.

The ANGEL-ASPECT trial and the SELECT II trial demonstrated that early endovascular thrombectomy following large cerebral infarction was superior to standard medical care. Those who received endovascular thrombectomy experienced fewer disabilities and were more functionally independent during the three months after treatment.

Imaging Advances Help Guide Stent Placement in Complex Coronary Artery Disease

A systematic review demonstrated that when compared with coronary angiography guided percutaneous coronary intervention, intravascular-imaging guided percutaneous coronary intervention is associated with significantly reduced cardiac death (rate ratio 0.53, 95% confidence interval 0.39 to 0.72) among other positive outcomes.[3]

Earlier Anticoagulation Safe in Stroke with AFib

In patients with an acute ischemic stroke with atrial fibrillation, European guidelines suggest starting direct-acting oral anticoagulant (DOAC) therapy three days after a minor stroke, six days after a moderate stroke, and 12 days after a severe stroke, while U.S. guidelines suggest waiting more than two weeks in some high-risk patients.

The ELAN study published in May 2023 showed that starting DOAC treatment sooner (within 48 hours of a minor or moderate stroke and on day 6-7 following a major stroke) was not associated with an increased risk for intracranial hemorrhage and is probably better at reducing ischemic events.[4]

Novel Diabetes Drugs in Obesity Without Diabetes

Multiple large trials have shown that sodium-glucose cotransporter-2 inhibitors and glucagon-like peptide-1 receptor agonists can reduce cardiovascular (CV) events and improve CV health in patients with diabetes. A growing number of studies suggest that these drugs may also improve parameters related to CV health such as body mass index, weight, and blood pressure in adults with obesity but without diabetes.[5]

See pages 42-47 for a comprehensive review of these new drugs by LG Health ambulatory pharmacist clinicians.

More Evidence Links Healthy Eating to Lower Risk for Premature Death

Findings from a large cohort study published early in 2023 provide support for the AHA's Food Is Medicine initiative.[6] Food Is Medicine encourages health care systems to help patients access and consume healthy foods based on scientific evidence that a healthy diet can prevent, manage, and treat chronic illness.

Less Invasive Treatment for Advanced Peripheral Arterial Disease

New research supports an endovascular approach over vein bypass surgery to address chronic, limb-threatening ischemia, an advanced form of peripheral arterial disease. In the BASIL-2 trial, patients who received vein bypass as the first approach were more likely to require a major amputation or to die during follow-up than those who received the endovascular approach as first strategy.

Dyspareunia Signals Urinary Tract Infection in 83% of Cases[7]

Dyspareunia (painful sexual intercourse) is a major indicator of urinary tract infections (UTIs), being present in 83% of cases. This symptom is especially accurate in identifying UTIs in non-menopausal women, researchers have found.

Among 5,500 patients studied, 83% of those who had UTIs experienced dyspareunia, while 80% of women of reproductive age with dyspareunia had an undiagnosed UTI. During the perimenopausal and postmenopausal years, dyspareunia was more often associated with genitourinary syndrome than UTIs. In the study, 94% of women with UTI-associated dyspareunia responded positively to antibiotics.

This is something that has apparently never been described before, yet dyspareunia is experienced by 10% to 20% of women in the United States. Thus, this is a reminder that clinicians should safely and compassionately inquire about their patients' sexual history.[8]

Increased Stroke Risk from Moderate Radon Exposure[9]

An analysis of radon exposures in more than 150,000 postmenopausal women in the Women's Health Initiative revealed a 14% higher stroke risk in those exposed to the highest concentrations of radon compared to those exposed to the lowest concentrations. Even moderate concentrations of radon were associated with a 6% higher stroke risk.

Radon is the second leading cause of lung cancer, but little was known about how exposure to the gas might affect stroke risk in women. This is concerning, considering radon levels in Lancaster County are about nine times the national average of 1.3pCi/L.[10]

The research found an increased risk of stroke among participants exposed to radon above 2 picocuries per liter (pCi/L). This is below concentrations that usually trigger Environmental Protection Agency (EPA) recommendations to install a home radon mitigation system.

Radon is a naturally occurring, odorless, radioactive gas produced when uranium or radium break

Choosing Wisely

Originally published in the Fall 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 FAMILY PHYSICIANS

❶ **Do not perform imaging for low back pain symptoms within the first six weeks of the complaint.** Exceptions include so-called "red flag" signs, which include — but are not limited to — severe or progressive neurological deficits, or suspicion of a serious underlying condition such as osteomyelitis. Imaging of lower spine complaints before six weeks increases costs significantly but does not improve outcomes.

❷ **Do not routinely prescribe antibiotics for acute mild to moderate sinusitis unless symptoms last a week or more, or symptoms worsen after initial clinical improvement.** Though most sinusitis in the primary care setting is due to a viral infection that will resolve on its own, antibiotics are still prescribed in the majority of outpatient visits for acute sinusitis. The American Academy of Family Physicians advises that symptoms must include discolored nasal secretions (although we know from repeated studies that discolored nasal discretions do not necessarily mean bacterial infection), and facial or dental tenderness.

❸ **Do not use DEXA screening for osteoporosis in women younger than 65 or men younger than 70 with no risk factors.**

❹ **Do not order annual EKGs or any other cardiac screening for asymptomatic low-risk patients.** There is little evidence that detection of coronary artery stenosis in such patients improves health outcomes. The U.S. Preventive Services Task Force states that false-positive tests are likely to lead to harm through unnecessary invasive procedures, over-treatment, and misdiagnosis. Potential harms of routine annual screening exceed the potential benefit.

The American College of Physicians adds a corollary: "Don't obtain screening exercise EKG testing in individuals who are asymptomatic and at low risk for coronary heart disease," since it does not improve patient outcomes. They define low risk as a ten-year risk under 10%.

The American College of Cardiology recommends not performing stress cardiac imaging or advanced non-invasive imaging in the initial evaluation of patients without cardiac symptoms, since such patients account for up to 45% of unnecessary "screening." Testing should be performed only when at least one high-risk marker is present:

- Diabetes in patients older than 40 years of age.
- Peripheral arterial disease.
- Greater than 2% yearly risk of coronary heart disease events.

❺ **Do not perform pap smears in women younger than 21 or who have had a hysterectomy for a non-cancer disease.**

down in rocks and soil. Its presence is increasing as a result of climate change, and it is increasingly being found in people's homes. When inhaled, this air pollutant releases ionizing radiation into the lungs and is seen as second only to smoking as an established cause of lung cancer.

Compared with men, women have a higher rate of stroke and, in the United States, typically spend about 11% more hours per day indoors at home, which investigators note highlights a "potential role of the residential environment among other risk factors specific to women."

The highest radon exposure group resided in areas where average radon concentrations were greater than 4 pCi/L; the middle exposure group lived in regions with average concentrations of 2-4 pCi/L; and the low-

est exposure group lived in areas with average concentrations <2 pCi/L.

The incidence rates of stroke per 1,000 women in the lowest, middle, and highest radon concentration areas were 333, 334, and 349, respectively. Notably, stroke risk was significant even at concentrations ranging from 2-4 pCi/L (p = 0.0004) versus <2 pCi/L, which is below the EPA's Radon Action Level for mitigation.

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Lancaster Medical Heritage Museum

Museum Offers Monthly Webinar Series

Readers of *JLGH* are invited to join the Lancaster Medical Heritage Museum for its monthly webinar series, offered the first Tuesday of every month.

According to Kim Jovinelli, the museum's executive director, "These engaging sessions are led by seasoned professionals and experts in various fields, offering a wealth of knowledge and insight. Designed to fit into your lunch hour, these webinars provide an opportunity to delve into intriguing topics and expand your understanding of medical history and advancements. Best of all, attendance is completely free, although donations are warmly welcomed and appreciated to support our ongoing educational initiatives."

More information about the webinars and other museum events can be found on the museum's website at lancastermedicalheritagemuseum.org/events.

The museum is open Wednesday-Saturday, 11:00 a.m. to 3:00 p.m. Admission is free to LG Health employees with a badge and children under 3; $8:00 for all others.