



# CHOOSING WISELY XIV:

## VASCULAR MEDICINE, RADIATION ONCOLOGY, ORTHOPEDIC SURGERY

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This is my 14th article on "Choosing Wisely" from the Board of Internal Medicine Foundation. As previously noted, each specialty group is developing "Five or Ten Things Physicians and Patients Should Know."

The "Choosing Wisely" topics in this issue are from The Society for Vascular Medicine (SVM), The American Society for Radiation Oncology (ASTRO), and The American Academy of Orthopaedic Surgeons (AAOS).

### RECOMMENDATIONS FROM THE SOCIETY FOR VASCULAR MEDICINE (SVM)

1. For patients who develop a first episode of deep vein thrombosis (DVT) from a known cause, don't do a work up for clotting disorder (ordering hypercoagulable testing). DVT is a common disorder and recent discoveries of clotting abnormalities have led to increased testing without proven benefit. Even an abnormal lab test will not change treatment.<sup>1</sup>

2. Don't reimaging DVT in the absence of a clinical change. Repeat ultrasound to evaluate the "response" of therapy does not alter treatment.

3. Avoid cardiovascular testing prior to low-risk surgery. Preoperative stress testing does not alter therapy or decision-making in patients facing low-risk surgery.

4. In patients with peripheral artery stenosis without claudication or critical limb ischemia, refrain from percutaneous or surgical revascularization. There is no evidence that improving circulation prevents progression of disease; patients without symptoms will not benefit from attempts to improve circulation.<sup>2</sup>

5. Don't screen for renal artery stenosis in patients without resistant hypertension and with normal renal function, even if known atherosclerosis is present. Surgery or angioplasty to improve circulation to the kidneys has no proven preventive benefit, and shouldn't be considered without symptoms such as elevated BP or decreased renal function.

### RECOMMENDATIONS FROM THE AMERICAN SOCIETY FOR RADIATION ONCOLOGY (ASTRO)

1. In women 50 or older with early stage invasive breast cancer, don't initiate whole breast radiotherapy as part of breast conservation without considering shorter treatment schedules. Older studies utilized "conventionally fractionated" therapy over 5-6 weeks, often followed by 1-2 weeks of boost therapy. Recent studies demonstrate that specific patient populations have equivalent tumor control and cosmetic outcome with approximately 4 weeks of therapy.

2. For low-risk prostate cancer don't initiate management without discussing active surveillance. In appropriate patients therapeutic options include radiation, surgery, and conservative monitoring without specific therapy. Shared decision-making between the patient and the physician can lead to better alignment of treatment with the patient's goals, and more efficient care delivery. ASTRO has published patient-directed decision aids concerning prostate cancer and numerous other types of cancer which can help give patients confidence about their choices, and improve compliance.<sup>3</sup>

3. For palliation of bone metastases, don't routinely use extended fraction schemes (over 10 fractions). A single treatment is more convenient but may be associated with a slightly higher rate of retreatment to the same site. Studies suggest equivalent pain relief following 30 Gy (Grays) in 10 fractions, 20 Gy in five fractions, or a single 8 Gy fraction. The latter should be strongly considered for patients with a limited prognosis or with transportation difficulties.

4. For prostate cancer don't routinely recommend proton beam therapy outside of a prospective clinical trial or registry. There is no clear evidence that proton beam therapy offers any clinical advantage over other forms of definitive radiation therapy.

5. Don't routinely use intensity modulated radiotherapy (IMRT)<sup>4</sup> to deliver whole breast radiotherapy as part of breast conservation therapy. Clinical trials have suggested lower rates of skin toxicity after using

modern 3-D conformal techniques relative to older methods of 2-D planning. IMRT may be of benefit in select cases where anatomy is unusual.

**6. Don't recommend radiation following hysterectomy for endometrial cancer with low-risk disease.**

Meta-analysis studies of radiation therapy for low-risk endometrial cancer demonstrate increased side effects with no benefit in overall survival compared with surgery alone. There is a very low risk of recurrence following surgery in patients with low-risk endometrial cancer, including no residual disease in hysterectomy despite positive biopsy, grade 1 or 2 with less than 50% myometrial invasion, and no additional high risk features such as age over 60, lymphovascular invasion, or cervical involvement.<sup>5</sup>

**7. Don't routinely offer radiation therapy for patients who have resected non-small cell lung cancer (NSCLC) with negative margins and NO-1 disease.**

Patients with early stage NSCLC have several management options following surgery, including observation, chemotherapy and radiation. Patients with positive margins following surgery may benefit from post-operative radiotherapy to improve local control regardless of status of their nodal disease. Two meta-analyses of post-operative radiotherapy in early NSCLC with node negative or N1 disease suggest that it is associated with increased side effects and no increase in disease-free or overall survival compared with observation.

**8. Don't initiate non-curative radiation therapy without defining the goals of treatment with the patient and considering palliative care referral.**

Palliative care can be delivered concurrently with anti-cancer therapies. Early palliative care intervention may improve patient outcomes, including survival.<sup>6</sup>

**9. Don't routinely recommend follow-up mammograms more often than annually for women who have had radiotherapy following breast conserving surgery.**

Studies show that annual mammograms are appropriate for such patients and there is no clear advantage to imaging at shorter intervals. Patients should wait 6-12 months after completion of radiation to begin their annual mammogram surveillance. Suspicious findings on physical examination or surveillance imaging might warrant a shorter interval between mammograms.

**10. Don't routinely add adjuvant whole brain radiation therapy (WBRT) to stereotactic radiosurgery (SRS) for limited brain metastases.** Randomized studies have demonstrated no overall survival benefit in the management of selected patients with good

performance status and brain metastases from solid tumors. The addition of WBRT to SRS is associated with diminished cognitive function and worse patient-reported fatigue. These results are consistent with the worsened self-reported cognitive function and diminished verbal skills observed in randomized studies of prophylactic cranial irradiation for small cell or non-small-cell lung cancer. Patients treated with radiosurgery for brain metastases can develop metastases elsewhere in the brain. Careful surveillance and the judicious use of salvage therapy at the time of brain relapse allow appropriate patients to enjoy the highest quality of life without a detriment in overall survival.

**RECOMMENDATIONS FROM THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS (AAOS)**

**1. Avoid performing routine ultrasonography to screen for post-operative deep vein thrombosis in patients who undergo elective hip or knee arthroplasty.** Ultrasound is not effective for this purpose and appropriate alternative screening tests do not exist. If there is no change in the patient's clinical status, routine screening for DVT after hip or knee arthroplasty does not change outcomes or clinical management.<sup>7</sup>

**2. Don't use needle lavage to treat patients with symptomatic osteoarthritis of the knee for long-term relief.** It does not lead to measurable improvements in pain, function, 50-foot walking time, stiffness, tenderness or swelling.

**3. Don't use glucosamine or chondroitin to treat patients with symptomatic osteoarthritis of the knee as neither provides relief for this condition.**<sup>8</sup>

**4. Don't use lateral wedge insoles to treat patients with symptomatic medial compartment osteoarthritis of the knee.** Their use does not improve pain or functional outcomes. Comparisons between lateral and neutral heel wedges as well as between lateral wedged insoles alone and with a subtalar strapping led to the conclusion that there is limited evidence for the effectiveness of lateral heel wedges and related orthoses.

**5. After carpal tunnel release don't use post-operative splinting of the wrist for long-term relief.** No benefit was found in grip or lateral pinch strength or bow stringing with routine post-operative splinting. Research also showed no effect in complication rates, subjective outcomes, or patient satisfaction, though patients may wish to provide protection for the wrist in a working environment or for temporary protection. Clinicians should be aware of the detrimental effects

including adhesion formation, stiffness, and prevention of nerve and tendon movement.

## TOP TIPS

### LOCAL CHOOSING WISELY

Earlier this year, Adam Lake, MD., one of our new faculty members in the family practice residency program at Lancaster General Health, led a group of 22 residents and two other faculty members in proposing candidate changes for Choosing Wisely in our program. The following candidate changes were proposed:

- Avoid ordering a troponin without suspected acute coronary syndrome.
- Do not order a CT of the head in delirious patients without trauma or focal neurological deficits.
- Avoid ordering an ECHO in patients in heart failure with a recent (within six months) ECHO and no change in clinical exam or suspicion of changes.
- Avoid ordering a carotid ultrasound in patients with syncope or stroke without signs or symptoms of carotid disease.
- Avoid a daily CBC, BMP if stable for two days and no suspicion of change.
- Avoid transfusion at thresholds in the absence of certain clinical syndromes.
- Do not use IV magnesium for treatment of asymptomatic hypomagnesemia
- Limit use and duration of telemetry on hospitalized patients.
- Avoid the use of opioid medication in treatment of severe acute migraine.
- Use stress ulcer prophylaxis only when clinically indicated.
- Carefully consider use of zolpidem as a sleep aid in hospitalized patients.
- Use oral steroids instead of intravenous steroids for patients admitted with exacerbation of COPD that does not require ICU admission.
- Limit use of serum ammonia.
- Use “banana bags” for those with alcoholism only once per admission and only if unable to take oral medications.

Of these proposals, the majority in attendance chose the following five to become this year’s choices of the family practice residency program. They are:

- Avoid a daily CBC and BMP if the patient has been stable two days and there is no suspicion of change.

- Do not use IV magnesium for treatment of asymptomatic hypomagnesemia.
- Limit use and duration of telemetry on hospitalized patients.
- Use oral steroids instead of intravenous steroids for patients admitted with exacerbation of COPD that does not require ICU admission.
- Use “banana bags” for those with alcoholism only once per admission and only if unable to take oral medications.

It is planned to repeat this process yearly. A special thanks was given to Tom Gates, MD, who believed in the idea from the start.

### TREATMENT, BUT NOT ERROR, IS THE BIGGEST RISK TO ELDERLY

Findings in the October issue of *The Annals of Family Medicine* show that the greatest threat to older patients’ safety in outpatient primary care is the risk posed by the treatment itself, not treatment error or negligence.<sup>9</sup> These findings were based on an analysis of no-fault claims data from New Zealand, which were used because its accident insurance model provides coverage for treatment and rehabilitation costs for all personal injuries, including those caused by treatment, regardless of severity or fault. It is a view unavailable to researchers in tort-based jurisdictions such as the United States.

For this study, primary care included general practice/family medicine clinics; physiotherapy, chiropractic, and osteopathy; dental clinics; community pharmacies, laboratories, and radiology; and nursing homes. They excluded those arising from treatment in hospitals, private specialist clinics, and maternity. Serious or sentinel injuries were defined as having “the potential to result in” or “has resulted in” “unanticipated death or major permanent loss of function.”

Medication injuries were the main source of all treatment injuries (34%) among the elderly aged 65 years and older. Of 294 medication injuries recorded between 2005 and 2009, 150 (51%) were caused by antibiotics. The next highest among injury sources were nonsteroidal anti-inflammatory drugs (9%) and angiotensin-converting enzyme inhibitors (9%).

Antibiotics led the list for causes of serious or sentinel injuries in this group, causing 39%, followed by warfarin (14%) and steroids (7%).

Most medication injuries were allergic and idiosyncratic reactions without a suggestion of any error having been made (1295; 91% of medication injuries

and 34% of all injuries).

Dr. Wanda Filer, the new President of The American Academy of Family Physicians, said the elderly are particularly susceptible to antibiotic injury as they are often taking multiple medications, leaving them vulnerable to drug-drug interactions. She also mentioned that we have only recently begun electronic medical records in many practices. The “medication alerts” in this system can be helpful to notice multiple medications and their interactions. That, of course, is dependent upon whether the physician takes the time to actually look at the interactions that the electronic medical record is bringing to his or her attention.

Dr. Filer also noted that even when medications can be reconciled, that does not take into account everything that a patient is taking over the counter. She also commented that we hear much about antibiotics’ role in being unnecessary and contributing to global antibiotic resistance, but they also have obvious potential to do substantial harm.

The author of the article, Dr. Katharine Ann Wallis, MBCChB, PhD, from the Department of General Practice and Primary Healthcare at the University of Auckland concludes: “To improve patients’ safety, in addition to reducing error, clinicians need to reduce patients’ exposure to treatment risk, where appropriate.” She admits some limitations of the data and writes there may be underreporting or selective reporting of injuries. There were also comparatively few claims for falls, delay or failure to diagnose or treat, and drugs well-known to cause harm, such as hypnotic, diarrhetic, hypoglycemic, and oral antiplatelet drugs.

#### U.S. ENDOCRINE SOCIETY WARNS ABOUT ENDOCRINE DISRUPTERS

A new statement builds on the Endocrine Society’s landmark 2009 report linking endocrine-disrupting chemicals (EDCs) to diabetes and obesity, among other conditions.<sup>10</sup> Unborn children are particularly at risk and animal studies indicate that exposure to even minute amounts in the prenatal patient can trigger obesity in later years. Some disrupters directly target beta and alpha cells in the pancreas, as well as fat and liver cells, which can lead to insulin resistance and type 2 diabetes. These disrupters can also alter the way cells grow and develop by mimicking, blocking, or interfering with the body’s natural hormones.

One of the more common of these chemicals is bisphenol A (BPA) found in food-can linings and cash register receipts. Others include phthalates found in

plastics and cosmetics, flame-retardants, and pesticides. A recent literature review at the European Association for the Study of Diabetes linked exposure to pesticides to a 60% increased risk of type 2 diabetes.

The new statement corroborates earlier findings linking endocrine disrupters to effects on male and female reproductive health, hormone-related cancers, prostate conditions, thyroid disorders, and neurodevelopmental issues.

Dr. Andrea Gore of The University of Texas recommends steps that the public can take to reduce exposure, starting with avoiding water bottles. Refilling a travel cup with water both reduces exposure to plastic chemicals and the number of bottles that wind up in landfills and oceans. Avoiding microwaving plastics and processed foods can also limit this chemical exposure. You may have a healthy meal, but if it is in a plastic container, it’s leaching chemicals. She not only advises endocrinologists, but family practitioners, pediatricians, obstetricians/gynecologists, and fertility doctors to emphasize reduction of exposure to these disrupters when they talk to patients.

She stressed the need for urgent research and testing. She said, “In the US, the Toxic Substances Control Act (TSCA) includes about 85,000 chemicals, most of which have not been tested for their health effects, and humans are exposed to many. Not all of these chemicals are EDCs, but if only 1% of them were disrupters, that would be 850 chemicals.”

Other actions this statement calls for include:

- Further research to more directly establish cause-and-effect relationship between EDCs exposure and specific health conditions.
- Regulation to ensure that chemicals are tested for endocrine activity before their use is permitted.
- Industrial partners to create products that test for and eliminate potential EDCs.
- Education of the public and policy makers on ways to keep EDCs out of food, water, and the air, as well as ways to protect unborn children.

#### MANY LEADING ACADEMICS SERVE ON INDUSTRY BOARDS

The British Medical Journal published online September 29, 2015 found that nearly 10% of the Board of Director’s positions at publically traded health care companies were held by academics from medical schools and research institutions across the United States. This highlights potential individual as well as institutional conflicts of interest that fall

outside the existing national guidelines.

In total, 180 out of 442 companies (41%) included at least one academically affiliated director. In addition, 85 non-profit academic institutions, including many of the most renowned medical research and clinical centers had at least one leader, professor, or trustee who served as a director for a for-profit health-care company. Total compensation to academically affiliated individuals was over 54 million dollars. Beyond annual compensation, board members also beneficially owned major company stock. A member of the board of directors has a fiduciary responsibility to shareholders to work for the best interest of the company and increased share value. This can create important conflicts of interest.

The US Physician Payments Sunshine Act mandates reporting of payments to physicians in academic medical centers by pharmaceutical and medical device companies, but does not require separate reporting of payments for serving as a company director.

Dr. David Rothman of Columbia College of Physicians and Surgeons in New York City called the actual compensation amount “unsettling,” and stressed that “although it may seem radical, excluding leaders from directorships is the only credible policy.” He believes the advantages of banning academics from accepting industry board directorships include education by example for medical students, fellows, and assistant professors.

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## REFERENCES

1. Baglin, T et al. Clinical guidelines for testing for heritable thrombophilia; *Br J Haematol* [Internet]. 2010 Apr [cited 2012 Oct 18];149:209-220.
2. ACC/AHA 2005 practice guidelines for the management of patients with peripheral arterial disease (lower extremity, renal, mesenteric, and abdominal aortic): Executive summary. *Circ*[Internet]. 2006 Mar 21[cited 2012 Oct 18]113;1474-1547.
3. Stacey, D et al. Decision aids for people facing health treatment or screening decisions. *Cochrane Database Syst Rev*. 2011 Oct 5;10:CD001431.
4. Eshleman JS, A new tool to help fight cancer—tomotherapy. *J Lanc Gen Hosp*. 2009; 4: 106-112.
5. Klopp, A et al. The role of postoperative radiation therapy for endometrial cancer: executive summary of an American Society for Radiation Oncology evidence-based guideline. *Pract Radiat Oncol*. 2014 May-Jun; 4(3):137-44.
6. WHO Definition of Palliative Care. World Health Organization. 2014[cited on 2014 Aug 12]. Available from:<http://www.who.int/cancer/palliative/definition/en/>.
7. Mont, MA et al. AAOS clinical practice guidelines summary preventing venous thromboembolic disease in patients undergoing elective hip and knee arthroplasty. *JAAOS*. 2011 Dec;19(12):768-76.
8. Moller, I et al. Effectiveness of chondroitin sulphate in patients with concomitant knee osteoarthritis and psoriasis: a randomized, double-blind placebo-controlled study. *Osteoarthritis Cartilage*. 2010 Jun 18;suppl 1:S32-40.
9. Wallis KA. Learning From No-Fault Treatment Injury Claims to Improve the Safety of Older Patients. *Annals of Fam Med*. 2005;13:472-474.
10. *Endocr Rev* Published online September 28, 2015.

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