



CHOOSING WISELY IX AND OTHER TOP TIPS

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This is my ninth article in this *Journal* on the “Choosing Wisely” initiative from the Board of Internal Medicine Foundation. As previously noted, each specialty group has or will be developing “Five Things Physicians and Patients Should Question.”

The Choosing Wisely items covered in this article include the preceding five from the American Academy of Pediatrics, as well as their new Five Common Tests and Treatments to Question. Also included will be the Five Tests and Treatments to Avoid in Back Pain from The North American Spine Society (NASS). Finally The American Headache Society released their Five Headache Interventions that are Discouraged.

Following the Choosing Wisely items there are three Top Tips.

RECOMMENDATIONS FROM THE AMERICAN ACADEMY OF PEDIATRICS

The first five recommendations were:

1. Antibiotics should not be used for apparent viral illnesses such as sinusitis, pharyngitis, and bronchitis.
2. Cough and cold medicine should not be prescribed or recommended for respiratory illnesses in children under 4 years of age.
3. Computed tomography (CT) scans are not necessary in the immediate evaluation of minor head injuries; clinical observation/Pediatric Emergency Care Applied Research Network (PECARN) criteria should be used to determine whether imaging is indicated.
4. Neuroimaging CT, MRI are not necessary in a child with a simple febrile seizure.
5. CT scans are not necessary in the routine evaluation of abdominal pain.

The five most recently added items include the following:¹

1. Don't prescribe high-dose dexamethasone (0.5 mg/kg/day) for the prevention or treatment of bronchopulmonary dysplasia in pre-term infants. This high-dose dexamethasone does not confer additional therapeutic benefit over low doses and is not

recommended. High doses have been associated with numerous short-term and long-term adverse outcomes, including neurodevelopmental impairment.

2. Don't perform screening panels for food allergies (IgE tests) without previous consideration of the medical history. Sensitization (a positive test) without clinical allergy is common. As an example, 8% of the population tests positive to peanuts but only about 1% are truly allergic and display symptoms after ingestion. When symptoms suggest a food allergy, tests should be selected based upon a careful medical history.

3. Avoid using acid blockers and motility agents such as metoclopramide for physiologic gastro-esophageal reflux (GER) that is painless, effortless, and not affecting growth.² Medication is not indicated in the “happy-spitter.” There is accumulating evidence that acid-blocking and motility agents are not effective in physiologic GER. Long-term sequelae of GER in infants are rare and there is little if any evidence that acid blockade decreases these rare sequelae. Routine UGI tract radiographic imaging is not justified. Parents should be counselled that GER is normal in infants and not associated with anything but stained clothes. If a child has poor growth or significant respiratory symptoms, those symptoms should obviously be evaluated.

4. Avoid the use of surveillance cultures for the screening and treatment of asymptomatic bacteriuria. There is little evidence that tests or treatment for this condition is beneficial. Cultures are costly and produce both false positive and false negative results. Treatment increases exposure to antibiotics which can be a significant factor favoring resistant organisms in the future. Overuse of antibiotics in the community is not in the best interest of anyone, and may lead to unnecessary imaging.

5. Infant home apnea monitors should not be routinely used to prevent sudden infant death syndrome (SIDS). There is no evidence that the use of these monitors decreases the incidence of SIDS. They may be of value for selected infants at risk for apnea or cardiovascular events after discharge, but they should not be used routinely.

THE NORTH AMERICAN SPINE SOCIETY (NASS) FIVE TESTS TO AVOID IN BACK PAIN³

1. Do not recommend advanced imaging (e.g. MRI) of the spine within the first six weeks of onset of nonspecific acute low back pain, unless red flags are present. Doing so has not been shown to improve patient outcomes but definitely increases costs. Examples of red flags include trauma history, unintentional weight loss, immunosuppression, cancer history, steroid or intravenous drug use, osteoporosis, age older than 50 years, presence of a focal neurological deficit, or progression of symptoms. A six week course of conservative management is reasonable in the absence of radicular symptoms or progressive pain.

Conservative measures include brief (24-48 hours) bed rest with initiation of physical therapy. Medications such as nonsteroidal anti-inflammatory drugs (NSAIDs) and possibly muscle relaxants are often beneficial. In patients who are sensitive to NSAIDs, analgesics such as Tramadol can be used instead. Use of a cane while walking can help unload the back. Gradual introduction of stretching and strengthening of core muscles should be started.

2. Do not perform elective spinal injections without imaging guidance, unless the imaging is contraindicated. Imaging guidance may be fluoroscopy or CT with contrast enhancement (except when contraindicated) to optimize needle placement, diagnostic accuracy, or therapeutic efficacy. Rheumatologists may either use fluoroscopy or ultrasonography as they may not have CT access in their offices.

3. Do not use recombinant human bone morphogenetic protein (rhBMP) in routine anterior cervical spine fusion surgery. The rationale for this is that rhBMPs are a group of growth factors that control tissue architecture throughout the body, including stimulating formation and healing. They have been used in numerous orthopedic applications, but life-threatening complications have been reported with routine use of recombinant human rhBMP in anterior cervical spine fusion surgery, owing to swelling of the soft tissues. This sometimes has led to difficulty swallowing or pressure on the airway. Formation of ectopic bone with its attendant risks and complications has dampened enthusiasm for this protein.

4. Do not use electromyography (EMG) and nerve conduction studies (NCS) to determine the cause of axial lumbar, thoracic, or cervical spine pain without symptoms of neurological injury or disorder. These studies measure nerve and muscle function, and may

be indicated in the presence of symptoms of numbness, leg or arm pain, or weakness associated with compression of the spinal nerve. Because spinal nerve injury is not a cause of neck, mid-back, or low back pain, EMG and NCS have not been found to be helpful in diagnosing the underlying causes of axial lumbar, thoracic, and cervical spine pain. There may be an exception when there might be thoracic radiculitis, such as in Lyme disease, but the most common cause of radiculitis is generally degenerative disc disease.

One should not forget that referred pain can be confused with radiculitis, as in gall bladder disease with pain referred to the tip of the scapula, or ruptured ectopic pregnancy that causes diaphragmatic irritation and “pseudoradicular” pain. Pre-herpetic neuralgia can also be confusing.

5. Don't recommend bed rest for more than 48 hours when treating low back pain as it has not been shown to be beneficial and can also cause weakness of the paraspinal muscles and deconditioning. Every attempt should be made to encourage stretching and strengthening of core muscle groups as soon as possible, and an appropriate rehabilitation program should be initiated quickly.⁴

THE AMERICAN HEADACHE SOCIETY RECOMMENDATIONS THAT DISCOURAGE FIVE HEADACHE INTERVENTIONS⁵

1. Don't perform neuroimaging studies in patients with stable headaches that meet criteria for migraine as the likelihood of finding anything is very low, it exposes patients to radiation, and it is costly. Incidental findings that have no serious implications may nonetheless make the patient worry excessively.

2. Don't perform computed tomographic (CT) imaging for headache when magnetic resonance imaging (MRI) is available, except in emergency settings. Imaging is advised when headaches are sudden in onset and become worse over time, but MRI is preferable to CT because it does not require radiation and it picks up more underlying conditions.

3. Don't recommend surgical deactivation of migraine trigger points outside of a clinical trial as it is still considered an experimental treatment. Data from The National Ambulatory Medical Care Survey estimate that CT scans ordered at neurology visits (many of which were probably done to evaluate headache) resulted in costs of roughly \$358 million dollars.

4. Don't prescribe opioid or butalbital-containing medications as first-line treatment for recurrent headache disorders as they impair alertness, and with

frequent use produce dependence. They should be reserved for use when other medications such as triptans or NSAIDs have not worked or are contraindicated.⁶

5. Don't recommend prolonged or frequent use of over-the-counter (OTC) pain medications for headache. This recommendation is based on concerns that such medications are overused, which occurs easily when patients have frequent headaches and perceive that medications sold without a prescription are likely to be safe. Too many OTC analgesics can also lead to "overuse headache" when headaches become worse. It is important that patients with frequent headaches discuss treatment options with their doctor.

TOP TIPS

CONSUMER GROUP URGES HOSPITALS TO STOP PROMOTING QUESTIONABLE SCREENINGS

The CV News Digest, June 20, 2014, published an item that had also been seen in the Los Angeles Times and Kaiser Health News. They all report that the consumer group Public Citizen is calling on hospitals to stop marketing medical tests to patients that the group considers "unnecessary and unethical."* The group is asking the institutions to cut ties with HealthFair Health Screening of Winter Park, Florida. The reason given was that it's heavily advertised testing program is likely to do more harm than good for consumers. The president of The American College of Cardiology, Dr. Patrick T. O'Gara said, "Questions raised about screening have some merit." The programs are advertised on websites, in newspapers, or through direct mail. The screenings include ultrasound tests of the carotid artery and abdominal aorta, a resting EKG, and testing for peripheral vascular disease. Dr. O'Gara stated that most of the tests are not recommended for people without risk factors or symptoms. "Other than assessing blood pressure and serum cholesterol, being attentive to diabetes and promoting a healthy weight with regular exercise," he said, "we do not recommend broad and untargeted screening."

Clinicians are aware that false-positive tests resulting from such screening can lead to unfounded anxiety and additional unnecessary, risky, and costly diagnostic procedures and treatment interventions. The

American College of Cardiology and The American Heart Association have joint guidelines that offer recommendations to guide physicians in making decisions with individual patients about their risk for heart attack and stroke.

I know from experience with my patients who have had these screenings that trying to explain away minor inconsequential abnormalities can be difficult. Frequently, physicians feel that further testing is indicated either because of patient pressure or because the patient may have a risk factor for further problems. Further tests, of course, would be done by the local hospital which is possibly one of the reasons why these screenings are promoted. Patients feel that they are getting a "deal" because the cost of the screening is low. They don't think about follow-up tests that might need to be done and their cost and potential false-positive results with possible harms.

The Director of Public Citizen's Health Research Group, Dr. Michael Carome, states, "It is exploitative to promote and provide medically non-beneficial testing through the use of misleading and fear-mongering advertisements in order to generate medically unnecessary but profitable referrals to the institutions partnered with HealthFair." Patients, as well as some physicians, don't remember or are not aware that issues of false positives and overdiagnosis can lead to additional unnecessary, risky, and costly diagnostic procedures and treatment interventions.

None of the current evidence-based guidelines issued by medical professional organizations about the proper use of these six tests supports widespread screening of asymptomatic individuals either with single tests or as a package. An example is the U.S. Preventive Services Task Force (USPSTF) draft recommendation not to screen for asymptomatic carotid artery stenosis. This reiterates the group's 2007 stance. Their reasons for not screening include:

- "The most feasible" method, ultrasonography, has a high false-positive rate in the general population.
- There is no reliable way to determine which patients with carotid stenosis are at increased risk for stroke.
- There is no evidence that adding cardiovascular medications or increasing current dosages to manage asymptomatic stenosis yields any benefit.

NOTES

* Lancaster General Hospital does not promote the program of screening tests discussed here.

- Evidence shows that prophylactic treatment with carotid endarterectomy can cause harm.

The USPSTF concludes “with moderate certainty” that the harms of screening outweigh the benefits.

NEW GUIDELINES RELEASED FOR ACUTE PANCREATITIS

The American College Of Gastroenterology has issued updated guidelines on the diagnosis, nutrition, workup, and management of patients with acute pancreatitis (AP).⁷ The prevalence rate for AP has been increasing in recent years although the case fatality rate has fallen.

Two of the following three criteria should be present to diagnose AP:

1. Characteristic “severe” abdominal pain;
2. Serum amylase and/or lipase exceeding three times the upper limit of normal;
3. Characteristic findings on abdominal imaging (strong recommendation, moderate quality of evidence).

Specific recommendations include:

- On presentation, patients should be immediately evaluated for hemodynamic status and receive necessary resuscitative measures.
- Patients with AP should receive early, aggressive intravenous hydration under close observation, unless contraindicated by cardiovascular and/or renal comorbidities. This intervention is most effective within the first 12-24 hours, but may be of little benefit thereafter.
- Patients with AP and concurrent acute cholangitis should undergo endoscopic retrograde cholangiopancreatography (ERCP) within 24 hours of admission. This procedure combines upper endoscopy and radiography to delineate and intervene in problems affecting the bile and pancreatic ducts.
- To reduce the risk of severe post-ERCP pancreatitis, high-risk patients should receive pancreatic duct stents and/or post-procedure rectal nonsteroidal anti-inflammatory drug suppositories.
- Clinical symptoms and laboratory findings typically allow diagnosis of AP. Therefore, pancreatic contrast-enhanced computed tomography and/or magnetic resonance imaging should be performed only in patients in whom the diagnosis is unclear or who do not improve clinically.
- Whenever feasible, patients with organ failure and/or systemic inflammatory response syndrome (SIRS) should be admitted to an intensive care unit or intermediary care setting.

- In patients with severe AP and/or sterile necrosis, routine use of prophylactic antibiotics is not recommended.
- In patients with infected necrosis, antibiotics known to penetrate pancreatic necrosis may reduce morbidity and mortality, thereby delaying intervention.
- Patients with mild AP without nausea and vomiting can immediately start oral feedings.
- Patients with severe AP should receive enteral nutrition to prevent infectious complications, and parenteral nutrition should be avoided in these patients. AP is a severely catabolic, inflammatory state, and adequate nutrition is essential for recovery. Compared with parenteral nutrition, enteral nutrition significantly reduces mortality, multiple organ failure, systemic infections, and the need for operative interventions.
- No intervention is needed for asymptomatic pancreatic and/or extrapancreatic necrosis and/or pseudocysts, regardless of size, location, and/or extension.
- Stable patients with infected necrosis should delay surgical, radiologic and/or endoscopic drainage, preferably for four weeks, to allow time for a wall to develop around the necrosis.

The guidelines also provide recommendations for determining the etiology of the condition, including evaluation of all patients with transabdominal ultrasound. The lead author Scott Tenner, MD, Director of the Greater New York Endoscopy Surgical Center said, “Patients can be falsely diagnosed if the criteria are not followed. In addition we recommend that a CT scan only be performed for patients when their diagnosis is not clear or if they have not had improvement 48-72 hours after hospital admission.”

AIR POLLUTION, EVEN AT LOW LEVELS, TIED TO LUNG CANCER

This study synthesized data from 17 cohort studies in nine European countries⁸ and found that risk exists even when the levels of air pollution from particulate matter (PM) were below the current European limit values. Sources of PM air pollution include traffic, industry, power plants, and domestic heating. They found no threshold below which there was no risk. The results showed a picture that “the more the worse, the less the better.” There is no reason to think that the study would have a different outcome in the United States. It is one of the largest studies of its kind, including data on more

than 300,000 individuals and 2,095 lung cancer cases with a median follow-up of 12.8 years.

Lung cancer risk associated with air pollution is much lower than that associated with smoking, but since everybody is exposed to air pollution, the public health effect is quite large. For example, in the current study there was a hazard ratio [HR] of 1.22 (per 10 $\mu\text{g}/\text{m}^3$ increase in PM_{10}). By contrast, other studies show the relative risk [RR] of developing lung cancer is 23.3 for currently smoking men and 12.7 for currently smoking women compared with non-smokers. They also point out that the World Health Organization has estimated that smoking caused 5.1 million deaths and 71% of lung cancer worldwide in 2004, whereas air pollution caused 1.2 million deaths and 8% of lung cancer worldwide in the same year.

Air pollution concentration was estimated at individual's home addresses using land-use progression models. They applied statistical modeling to control for other factors like smoking, diet, and occupation. For every increase of five micrograms

per cubic meter of $\text{PM}_{2.5}$ pollution, the risk for lung cancer grows by 18%, and for every increase of 10 micrograms per cubic meter in PM_{10} pollution, the risk increased by 22%. The risk/HRs were even higher for the lung cancer subtype, adenocarcinomas. The same increments of PM_{10} and $\text{PM}_{2.5}$ were associated with HRs for adenocarcinomas of the lung of 1.51 and 1.55, respectively.

This new study overcame several limitations of previous air pollution studies and benefited from a high follow-up rate and adjustment of potential confounders, including a set of smoking variables. Commentary from Japan lamented the lack of recognition of air pollution as a contributing factor in lung cancer. They cite the fact that the 18th Edition (2012) of Harrison's Principles of Internal Medicine excluded air pollution from the list of lung cancer risks. I think we all need to realize this problem especially in view of The American Lung Association's listing of Lancaster County as having a grade of "D" with our "particle pollution 24-hour."

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