CHOOSING WISELY

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The Choosing Wisely topics that we will discuss in this issue are from The American College of Emergency Physicians (ACEP) and The American Society of Hematology (ASH), but before we get into those new Choosing Wisely issues, I want to draw your attention to the fact that The American College of Cardiology (ACC) has withdrawn one of its five recommendations in the "Choosing Wisely" campaign.

In 2012 the ACC recommended that myocardial infarction patients should have only their culprit artery unblocked. That recommendation was based on nonrandomized studies which suggested that treating all significantly blocked vessels could be harmful. The ACC now states that two recent randomized controlled trials—PRAMI (Preventive Angioplasty in Myocardial Infarction), and CvLPRIT (Complete Versus culprit-Lesion only Primary PCI Trial)—offer evidence that stenting all arteries with large blockages improves outcomes in MI patients. There are still many questions about the exact timing of the procedures: whether only certain patients benefit; whether fractional flow reserve might guide decisions; and how patient complexity and hemodynamic stability should influence the choice of therapy.

RECOMMENDATIONS FROM THE AMERICAN COLLEGE OF EMERGENCY PHYSICIANS (ACEP)

ACEP has issued a list of ten tests and procedures that may not be cost effective in some situations.

1. Avoid computed tomography (CT) scans of the head in Emergency Department (ED) patients with minor head injuries who are low risk based on validated decision rules. CT scans expose patients to ionizing radiation and increase their lifetime risk of cancer, so they should only be performed on patients at risk of significant injuries. Patients with minor head injuries can be categorized through a thorough history and physical examination following evidence-based guidelines. This approach has been proven safe and effective at reducing the use of CT scans in large clinical trials. For some children with minor head injuries, clinical observation in the emergency room is recommended prior to deciding whether to perform a CT scan.[1]
2. Avoid placing indwelling urinary catheters in the ED for monitoring urine output in stable patients who can void, or for the convenience of patients or staff. Catheter-associated urinary tract infection is the most common hospital-acquired infection in the United States, and can be prevented by reducing the use of indwelling catheters. Physicians can reduce the use of these catheters by following the Centers for Disease Control and Prevention's evidence-based guidelines for the use of urinary catheters. Indications may include monitoring output in critically ill patients, relief of urinary obstruction, drainage of the bladder during surgery, and as part of end-of-life care.
3. Don't delay engaging available palliative and hospice care services in the ED for patients likely to benefit. Early referral from the ED to hospice and palliative care services can benefit select patients resulting in both improved quality and quantity of life.
4. Avoid antibiotics and wound cultures in ED patients with uncomplicated skin and soft tissue abscesses after successful incision and drainage and with adequate medical follow-up. Opening and draining an abscess is the appropriate treatment. Antibiotics offer no benefit. Even in abscesses caused by Methicillin-Resistant Staphylococcus aureus (MRSA), appropriately selected antibiotics offer no benefit if the abscess has been adequately drained and the patient has a well-functioning immune system. A culture of the drainage is not needed as the result will not routinely change treatment.[2]
5. In uncomplicated ED cases of mild to moderate dehydration in children, avoid intravenous fluids before trying oral rehydration. It is preferable to give fluids by mouth, and it avoids the pain and potential complications of an IV

catheter. Anti-nauseants may be helpful in making oral fluids tolerated, particularly if give early in the ED visit.

6. In asymptomatic adult patients in the ED with syncope, insignificant trauma, and a normal neurological evaluation, avoid CT of the head. Diagnostic tests for syncope should not be routinely ordered, and the decision to order any test should be guided by information obtained from the patient's history or physical examination. A CT scan of the brain may be indicated If a head injury is associated with a syncopal episode, or if there were symptoms of a stroke (i.e. headache, garbled speech, weakness in one arm or leg, trouble walking or confusion) before or after a syncopal episode.[3]
7. Avoid CT pulmonary angiography (CTPA) in ED patients with a low-pretest probability of pulmonary embolism and either a negative screen for Pulmonary Embolism Rule Out Criteria (PERC), or a negative D-dimer test. The disadvantages of the CTPA include exposure to radiation, the use of intravenous contrast material that can cause renal damage, and high cost. Studies show that certain findings in a patient's medical history put them at very low risk for a pulmonary embolus.
8. For adults with non-traumatic back pain, avoid lumbar spine imaging in the ED unless the patient has severe or progressive neurological deficits or is suspected of having a serious underlying condition (such as vertebral infection, cauda equine syndrome, or cancer with bony metastasis). Most patients who present to the emergency room with non-traumatic low back pain have a muscle strain or a bulging disc that cannot be identified on an x-ray or CT scan. When symptoms or physical findings of a serious or progressive neurologic condition are present, or if the patient is suspected of having serious underlying conditions such as cancer or a spinal infection, imaging may be appropriate and may include plain x-rays or MRI or CT scan. Most of the time, diagnostic imaging does not accurately identify the cause of most low back pain, nor does it improve the time to recovery. False positive findings are not uncommon.
9. Avoid prescribing antibiotics in the ED for uncomplicated sinusitis, which is a common reason why patients visit the ED. Approximately 98% of acute sinusitis cases are caused by a viral infection and resolve in 10-14 days without treatment. Some patients may be appropriately prescribed antibiotics, such as those patients taking drugs that reduce the effectiveness of the immune system, those with prolonged, severe symptoms, or those with worsening symptoms. Antibiotics can obviously cause many side effects and potentially severe complications and their risks usually outweigh their benefits in sinusitis. Antibiotic-resistant infections are another risk of antibiotics and contribute to avoidable healthcare costs.[4]
10. Avoid ordering a CT of the abdomen or pelvis in young (age <50), otherwise healthy ED patients with known histories of kidney stones, or ureterolithiasis, who present with symptoms consisted with uncomplicated renal colic. Most stones pass spontaneously in the urine in a few days, though kidney stones often do recur. Many patients who are in the ED and <50 years old with symptoms of recurring kidney stones do not need a CT scan unless these symptoms persist or worsen. CT scans may then be needed to diagnose kidney stones and rule out other problems that may mimic the pain of kidney stones. Also, if there is a fever or history of severe obstruction with previous stones, then a CT scan is appropriate. Radiation exposure can often be avoided in patients with symptoms of recurrent kidney stones as treatment decisions are not usually changed. Close follow-up by a primary care physician or a specialist is necessary.

THE AMERICAN COLLEGE OF HEMATOLOGY

Ten recommendations that physicians and patients should adopt:

1. Don't transfuse more than the minimum number of red blood cell (RBC) units necessary to relieve symptoms of anemia or to return a patient to a safe hemoglobin range (7 to 8 g/dL in stable, non-cardiac in patients). Unnecessary transfusion generates costs and exposes patients to potential adverse effects without any likelihood of benefit. Clinicians are urged to avoid the routine administration of 2 units of RBCs in adults if one unit is sufficient, and in children to use appropriate weight-based dosing of RBCs.[5] There are, however, several letters to the Editor in the NEJM (Jan 1, 2015, Vol 372, No. 1) concerning hemoglobin thresholds for transfusion in septic shock that are worth reading.

"A transfusion threshold of 9 g/dL was superior to 7 g/dL in abdominal cancer surgery patients (Pinheiro de Almeida et al, Anesthesiology 2015 Jan 122:29). Transfusion at a threshold of less than 8 g/dL gave favorable outcomes in patients undergoing cardiac surgery (NEJM JW Cardiol Nov 3, 2010) or hip fracture surgery (NEJM JW Gen Med Jan 19, 2012)."

2. Don't test thrombophilia in adult patients with venous thromboembolism (VTE) that occurs in the setting of major transient risk factors (surgery, trauma or prolonged immobility) as it does not change the management of VTEs occurring in this setting. When VTEs occur in the setting of pregnancy or hormonal therapy, or when there is a strong family history plus a major transient risk factor, the role of thrombophilia testing is complex and patients and clinicians are advised to seek guidance from an expert in VTE. Obviously this testing can result in harm to the patients if the duration of anticoagulation is inappropriately prolonged or if patients are incorrectly labeled as thrombophilic.
3. Don't use inferior vena cava (IVC) filters routinely in patients with acute VTE. IVC filters are costly, and cause harm and do not have a strong evidentiary basis. The main indication is for patients with acute VTE and a contraindication to anticoagulation such as active bleeding or a high risk of anticoagulant-associated bleeding. Retrievable filters are recommended over permanent filters with removal of the filter when the risk for PE has resolved and/or when anticoagulation can be safely resumed.
4. Don't administer plasma or prothrombin complex concentrates for reversible vitamin K antagonists in non-emergent settings (i.e. outside the setting of major bleeding, intracranial hemorrhage, or anticipated emergency surgery). Blood products can cause serious harm to patients as well as being costly, and are rarely indicated for reversal of vitamin K antagonists. If the situation is non-emergent, elevations in the INR are best addressed by withholding the vitamin K antagonist and/or administering vitamin K.[6]
5. Limit surveillance CT scans in asymptomatic patients following curative-intent treatment for aggressive lymphoma. CT surveillance in this group in remission from aggressive non-Hodgkins lymphoma has not been demonstrated to improve survival. It is costly and may be harmful through a small but cumulative risk of radiation-induced malignancy. CT scans in asymptomatic patients more than 2 years beyond the completion of treatment are rarely advisable.
6. In a patient with a first venous thromboembolism (VTE) occurring in the setting of a major transient risk factor, don't treat with an anticoagulant for more than 3 months. Patients with a first VTE triggered by a major-transient risk factor such as surgery, trauma, or an intravascular catheter are at low risk for recurrence once the risk factor has resolved and an adequate treatment regimen with anticoagulation has been completed. This recommendation is not intended to apply to a VTE associated with a non-major risk factor (e.g., hormonal therapy, pregnancy, travel-associated immobility, etc.), as the risk for recurrent VTE in these groups is either intermediate or poorly defined.
7. Don't routinely transfuse patients with sickle cell disease (SCD) for chronic anemia or uncomplicated pain crisis without an appropriate clinical indication. SCD patients are especially vulnerable to potential harms from unnecessary red blood cell transfusion. They have an increased risk of alloimmunization to minor blood group antigens and high risk of iron overload from repeated transfusions. The most severe genotypes of SCD with baseline hemoglobin values in the 7-10 g/dL range can usually tolerate further temporary reductions in hemoglobin without developing symptoms of anemia. Intravenous fluids improve hydration during hospitalization for management of pain crisis, and that can contribute to a decrease in hemoglobin of 1-2 g/dL. Routine administration of red cells in this setting should be avoided. There is also no evidence that transfusion reduces pain due to vaso-occlusive crises.[7]
8. In patients with asymptomatic, early-stage chronic lymphocytic leukemia (CLL), baseline or routine surveillance CT scans do not improve survival and are not necessary to stage or prognosticate patients. For these patients clinical staging and blood monitoring is recommended over CT scans.
9. Don't test or treat for suspected heparin-induced thrombocytopenia (HIT) in patients with a low pre-test probability of HIT. Use the "4 T's" score to calculate the pre-test probability of HIT. A score of 0-3 can exclude HIT without the need for

laboratory investigation. Do not discontinue heparin or start a non-heparin anticoagulant in these low-risk patients because presumptive treatment often involves an increased risk of bleeding, and because alternative anticoagulants are costly.[8]

10. Don't treat patients with immune thrombocytopenic purpura (ITP) in the absence of bleeding or a very low platelet count. The decision to treat ITP should be based on an individual patient's symptoms, bleeding risk (as determined by prior bleeding episodes and risk factors for bleeding such as use as anticoagulants, advanced age, high-risk activities, etc.), social factors (distance from hospital/travel concerns), side effects of possible treatments, upcoming procedures, and patient preferences. In pediatric patients treatment is usually not indicated in the absence of mucosal bleeding regardless of the platelet count. ITP treatment is rarely indicated in adult patients with platelet counts greater than 30,000/microL unless they are preparing for surgery or an invasive procedure, or have a significant additional risk factor for bleeding.

TOP TIPS

PERIOPERATIVE CARDIOVASCULAR EVALUATION AND MANAGEMENT OF PATIENTS UNDERGOING NONCARDIAC SURGERY[9]

This is a new guideline from The American College of Cardiology and The American Heart Association. Many of us will find its 100 page compendium daunting, and some have been frustrated by the tentative language "is reasonable" or "may be considered" that accompanies the Class II recommendations. Some feel that intervention-oriented clinicians may use this language as an open invitation to intervene, but for others it will justify less perioperative testing and less preventive drug therapy.

The new guideline is an update of one published in 2007; the key points include patients categorized as low risk or elevated risk depending on whether their risk of a major adverse cardiac event, based on patient and procedural factors, is below or above 1%.

Recommendations for interventions fall into four categories:

- Class I ("should be performed"),
- Class IIa ("is reasonable to perform")
- Class IIb ("may be considered"),
- Class III ("is not beneficial or is potentially harmful").

The following points address several of the most common questions in perioperative management:

- Routine preoperative echocardiography is not recommended; however, it is reasonable if there is unexplained dyspnea or previously known left ventricular dysfunction;
- Patients taking statins chronically should continue to receive them perioperatively. If the patient is high-risk, perioperative initiation of statins is reasonable.
- Starting aspirin preoperatively to prevent adverse cardiovascular events (or continuing it perioperatively in those already receiving chronic aspirin therapy), is generally not recommended, based on the recently published POISE trial. However, continuing aspirin may be reasonable in selected patients whose ischemic risk is thought to outweigh their bleeding risk.
- Patients who take beta-blockers chronically should continue to receive them perioperatively. Routine initiation of beta-blockers is not recommended, but it is reasonable to start them in selected patients with substantially elevated cardiovascular risk. When used, beta-blockers should be started well in advance of surgery and not the day of or the day before surgery.
- Preoperative stress testing may be reasonable in patients who have both elevated cardiovascular risk and poor or unknown functional capacity, but it should only be done if an abnormal result would change management. This recommendation obviously does not apply to patients who need emergency surgery or have an active cardiac condition such as acute coronary syndrome or decompensated heart failure that requires immediate intervention. Stress testing is inappropriate in such situations.

The guideline also provides significant information on managing patients with coronary disease, valvular heart disease, heart failure, and those with recently implanted stents.

LUNG CANCER UPDATE

Lung cancer is the leading cause of cancer death for both men and women in the United States. The 5 year survival rate for lung cancer patients is only 16.6%, so an annual screening test that finds the disease at an earlier, more treatable stage has the potential to dramatically improve survival rates for individuals at high risk. The US Preventive Services Task Force

(USPSTF) last year awarded a "B" grade to annual low-dose CT screening for individuals at high risk for lung cancer, and estimated that if everyone at high risk is screened there will be a 14% reduction in lung cancer deaths in the United States.

The Centers for Medicare and Medicaid Services (CMS) announced in November a draft proposal to cover an annual low-dose CT scan for Medicare beneficiaries at high-risk for lung cancer, and the American Lung Association welcomed this proposal. High-risk individuals are 55 – 74 years of age, have a smoking history of 30 pack years, and have quit smoking within the last 15 years. Under The Affordable Care Act, effective prevention measures, those graded A or B, are included in the Essential Health Benefit. Individuals who are enrolled in state health marketplace plans, are enrolled in Medicaid-expansion programs, or are in non-grandfathered private insurance plans, and who meet the screening criteria, will have insurance coverage for screening without co-payments or other barriers starting January 1, 2015 or at the beginning of their next plan year. A final announcement is expected in February 2015 about when coverage for Medicare beneficiaries will begin.

The American Lung Association applauds Medicare for requiring providers to include counseling about smoking cessation or remaining smoke-free as one of the elements leading up to the annual scan. Smoking is obviously the most important risk factor for lung cancer, with radon being second. The American Lung Association has helped more than 1 million people quit smoking though it's Freedom from Smoking® program and it's Lung-Helpline at 1-800-LUNGUSA. Information on secondhand smoke, radon, air pollution, and other hazardous materials can be found on The American Lung Association's website.

LOW-GLYCEMIC-INDEX DIET

The "glycemic index" is way of quantitating the fact that foods with the same carbohydrate content can increase blood glucose different amounts. (See my previous JLGH article from Spring 2010, Vol. 5, No. 1 and look at #4 under "Other Miscellaneous Matters").

A recent article in JAMA claims that the glycemic index (GI) itself—within the context of an otherwise healthy diet—may not be an important factor in improving cardiovascular risk in non-diabetics.[10] This 5-week, controlled feeding study found that diets with low-GI carbohydrate did not improve insulin sensitivity, lipid levels, or systolic blood pressure compared with diets with high-GI carbohydrate. In the context of an overall DASH-type (Dietary Approaches to Stop Hypertension) diet, using GI to select specific foods may not improve cardiovascular risk factors or insulin resistance.

Regardless of GI, overall carbohydrate intakes in the lower part of the range of the US intake are better than higher carb intakes. An editorial by endocrinologist Robert Eckel, MD states: "The unexpected findings of the study . . . suggest that the concept of GI is less important than previously thought, especially in the context of an overall healthy diet. These findings should therefore direct attention back to the importance of maintaining an overall heart-healthy lifestyle, including diet pattern." This diet emphasizes an intake of vegetables, fruits, and whole grains; includes low-fat dairy products, poultry, fish, legumes, non-tropical vegetable oil and nuts; and limits intake of sodium, sweets, sugar-sweetened beverages, and red meats.

It is still considered likely that the GI is relevant for people with diabetes, as some aspects of the study were considered troublesome by some who commented about it. In the "low carbohydrate" diet, carbohydrates supplied 40% of energy, which is not felt to be a low carbohydrate diet. Some commenters also complained about the lack of fats in the diet. The most troublesome feature was the failure to follow the participants for more than 5 weeks. No one thinks that Type II diabetes or other metabolic issues develop after 5 weeks of a bad diet; it takes a lifetime of poor choices.

GUIDELINES ON MANAGING OPIOID OVERDOSES

The World Health Organization (WHO) has new guidelines for managing opioid overdoses in a community setting.[11] Opioids like morphine and heroin are psychoactive substances derived from the opium poppy, or their synthetic analogs. It is estimated that globally 69,000 people die from opioid overdoses each year, while another 15 million suffer from opioid dependence. The majority of people that depend on opioids use illicitly cultivated and manufactured heroin, but an increasing proportion use prescription opioids. Though there are effective treatments for opioid dependence, only 10% of people who need such treatments are receiving them. Opioids in high doses can cause respiratory depression and death, but the inexpensive medication

naloxone can completely reverse the effects of opioid overdose and prevent death.

The four main WHO recommendations are:

- Those witnessing an opioid overdose such as close friends, partners, or family members should have access to naloxone and know how to administer it in an emergency.
- First responders should concentrate on managing the person's airway, administering naloxone, and assisting ventilation.
- Naloxone can be administered by many routes: intravenous, intramuscular, subcutaneous, or intranasal. People administering naloxone should choose a route of administration based on the formulation available, how well they can administer it, the setting, and the local context.
- Following successful naloxone administration and resuscitation, the person's level of consciousness and breathing should be closely monitored until he or she has fully recovered.

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