Title
Choosing Wisely: Teaching Parsimonious Care

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ISP Summary
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The goal of this project was to contribute to the curriculum for medical students regarding medically unnecessary care by making multiple-choice questions based off of the *Choosing Wisely* recommendations. These multiple choice questions are designed as clinical vignettes. The correct and incorrect answer choices are then explained using the original recommendation as a source. Further, each society's recommendation also included primary literature references. These are also used to describe the reasoning behind correct and incorrect answer choices. Each of the references is included for additional reading in each answer explanation.

In total, I have chosen 75 questions to put forward for my ISP. I chose these questions because I felt they addressed issues that were commonly faced across specialties as compared with other recommendations that addressed more specialty specific issues. These questions have been edited and continue to be edited by myself, multiple colleagues and members of the ISP committee.

The next step in this project is to assess whether these questions are effective teaching tools for medical students. The ultimate goal of this project, as mentioned above, is to change the culture regarding how tests are ordered with more attention paid to cost/benefit analysis. If it can be argued that these questions are effective tools for teaching, then this can contribute to curriculum development in medical education. Following these questions being used for this research project, I plan to submit them online for open use.

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Questions

1. A 35 yo HIV positive male who has been on anti-retroviral therapy (ART) for 3 years presents to his primary care provider. At a prior visit one year ago, his CD4 count was measured at 356 cells/mm^3 and his viral load was undetectable for the first time. Which of the following tests should he receive at this visit?

A. HIV Viral Load, CD4 count, HIV serology
B. HIV Viral Load, CD4 count
C. HIV Viral Load

Answer: B

"The DHHS Panel on Antiretroviral Guidelines for Adults and Adolescents" recommends yearly CD4 count testing in HIV positive patients, who have been on ART for >2 years and have an undetectable VL. If the patient has viremia, testing at 3-6 month intervals is appropriate. If the CD4 count is >500 cells/mm^3, CD4 count monitoring is optional. Inside the first two years of starting ART, CD4 count testing generally occurs at 3-6 months intervals.

After two years on ART, viral load testing can be performed every 6 months if the patient has had viral suppression for >2 years. Otherwise, testing is performed every 3 months or greater if clinically indicated.

HIV serology is performed at time of entry into care.

Choosing Wisely recommendation:
"Avoid Unnecessary CD4 Tests"

Incorrect Choices

A. HIV serology does not need to be repeated at regular intervals.
B. This patient's last CD4 testing was one year ago. He needs a repeat study now.

Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. Available at http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf. 2015 Apr. 288 p. C-8

http://www.choosingwisely.org/clinician-lists/hivma-avoid-unnecessary-cd4-tests/

2. A 27 yo HIV positive female presents to your clinic for continuity of care. She was diagnosed with HIV 3 years ago. Her viral load was tested before her ART therapy was initiated three years ago, it was tested 6 weeks after initiation of therapy to confirm adequate initial virologic response and it has been tested every 3-4 months since. Her viral load over the past 2 years of testing has been undetectable. The patient is adherent to her medications and has not experienced any side effects. It has been 3 months since her last viral load test. Which of the following tests should she have today?

A. Viral load, Genotype Resistance
B. Viral load

C. Defer viral load testing to 3 months from now

Answer C

Patients on ART for >2 years who have had undetectable viral loads on quarterly testing can be tested at 6 month intervals assuming there are no clinical indications to increase frequency of testing. Clinical indications for increased frequency of testing include medication non-adherence and monitoring of drug interactions that may decrease viral load response.

Choosing Wisely Recommendation:

"Avoid quarterly viral load testing of patients who have durable viral suppression, unless clinically indicated."

Incorrect Choices

A and B. This patient can spread out her viral load testing to 6 months as it has been undetectable for her for >2 years. Further, drug genotype resistance is not necessary unless she is non-responsive to ART medications or is initiating care. Resistance testing allows for appropriately targeted ART in HIV patients.

Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. Available at http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf. 2015 Apr. 288 p. C-6

http://www.choosingwisely.org/clinician-lists/hivma-avoid-quarterly-viral-load-testing-with-durable-viral-supression/

3. A 26 yo M patient with newly diagnosed HIV documented at a different clinic comes to you for initiation of HIV care. He is an injection drug user. Which of the following sets of tests would be included among those ordered initially (the correct list is not exhaustive)?

A. HIV Viral load, CD4 count, CMV IgG, RPR/VDLR
B. HIV Viral load, CD4 count, RPR/VDLR, genotype resistance testing
C. HIV Viral Load, CMV IgG, genotype resistance testing

Answer B

HIV Viral Load, CD4 Count and genotype resistance are some of the many tests required at initiation of therapy so as to monitor the clinical status of HIV infection and assess response to ART. Syphilis screening with RPR/VDLR is also appropriate upon initiation of care and periodically after, per recommendations in the "Primary Care Guideline for the Management of individuals with HIV: 2013." These same guidelines mention that CMV IgG testing is not necessary in patients that can be assumed to be seropositive, such as injection drug users as this patient is or men who have sex with men.

Choosing Wisely Recommendation:

"Don't routinely test for CMV IgG in HIV-infected patients who have a high likelihood of being infected with CMV."

Incorrect Choices
A and C. All the answer choices here are appropriate apart from the CMV IgG, which will probably be positive as mentioned above.

Sources:
http://www.choosingwisely.org/clinician-lists/hivma-cmv-igg-testing-with-high-likelihood-of-cmv/

Aberg JA, Gallant JE, Ghanem KG, Emmanuel P, Zingman BS, Horberg MA; Infectious Diseases Society of America. Primary care guidelines for the management of persons infected with HIV: 2013 update by the HIV Medicine Association of the Infectious Diseases Society of America. Clin Infect Dis. 2014 Jan;58(1):1-10.

4. A 26 yo HIV positive male presents to your clinic for initiation of therapy. He is a recent Hispanic immigrant from Tijuana. Which of the following tests should he receive?

A. G6PD, CD4, Viral Load, Genotype Resistance
B. RPR, CD4,Viral Load, Genotype Resistance
C. G6PD, CD4, Viral Load

Answer B

G6PD testing should be performed for those HIV positive patients upon initiation of care or before treatment with an oxidant drug if they are predisposed to this disorder. Oxidant drugs that may cause hemolysis in G6PD deficient patients that are also commonly used in HIV positive patients include dapsone or trimethoprim/sulfamethoxazole for pneumocystis prophylaxis. Yet, G6PD deficiency most commonly affects Asian, African and Mediterranean populations. Further, testing is not required in other populations less predisposed to the disease, including Hispanic populations such as our patient here. Syphilis screening is appropriate upon initiation of care and periodically after, per recommendations in the "Primary Care Guideline for the Management of individuals with HIV: 2013."

Choosing Wisely Recommendation:

"Don't routinely order testing for glucose-6-phosphate dehydrogenase (G6PD) deficiency for patients who are not predisposed due to race/ethnicity."

Incorrect Choices:

A and C. All the answer choices apart from ordering G6PD deficiency testing are correct. G6PD is not common in Hispanic populations as mentioned above and as such testing is unnecessary.

Source

http://www.choosingwisely.org/clinician-lists/hivma-g6pd-deficiency-testing/

Aberg JA, Gallant JE, Ghanem KG, Emmanuel P, Zingman BS, Horberg MA; Infectious Diseases Society of America. Primary care guidelines for the management of persons infected with HIV: 2013 update by the HIV Medicine Association of the Infectious Diseases Society of America. Clin Infect Dis. 2014 Jan;58(1):1-10.

5. You are caring for a 67 M on the Med/Surg floor with osteomyelitis in his foot. He is febrile to 101.3 F with a WBC count to 14,700. He has been hemodynamically stable throughout his admission. His hemoglobin this morning comes back at 7.5. What hemoglobin range should this patient be transfused to?

A. >10
B. 9-10
C. 8-9
D. This pt does not require transfusion.

Answer D

The American Association of Blood Banks recommends adhering to a restrictive blood transfusion regimen of 7-8 g/dL in hospitalized, stable patients. This recommendation is based off of their analysis of 19 trials in which they find that a more liberal transfusion regimen than 7-8 g/dL does not change mortality, length of hospital stay or ability to walk independently.

Choosing Wisely Recommendation:

"Avoid routine transfusions in asymptomatic hospitalized patients with a hemoglobin level greater than 7-8."

Incorrect choices:

A-C. More liberal transfusion regimens than 7-8 have been studied with no evidence of effect on mortality and increased risk of transfusion reactions.

Carson JL, Grossman BJ, Kleinman S, Tinmouth AT, Marques MB, Fung MK, Holcomb JB, Illoh O, Kaplan LJ, Katz LM, Rao SV, Roback JD, Shander A, Tobian AA, Weinstein R, Swinton McLaughlin LG, Djulbegovic B; Clinical Transfusion Medicine Committee of the AABB. Red blood cell transfusion: a clinical practice guideline from the AABB. Ann Intern Med. 2012;157:49–58.

http://www.choosingwisely.org/clinician-lists/american-college-obstetricians-gynecologists-avoid-routine-transfusions-asymptomatic-hospitalized-patients/

6. A 56 yo woman comes to your office for a yearly checkup. She says her close friend has just been diagnosed with ovarian cancer. You listen to her concerns and send along your best wished for her friend's recovery She would like to know what screening for ovarian cancer she should be receiving per common practice. Her mother has T2DM and her father HTN. What screening does this patient warrant?

a. Referral to a genetic counselor

b. Careful history and exam.
c. Careful history and examCA-125.
d. Careful history and exam, CA-125 and Transvaginal U/S

Answer – B

Per the ACOG Committee Opinion on the detection ovarian cancer, most cases are recognized in advanced stages at which point there is a 20-30% 5 year mortality rate. The article cites a Goff et al. article whose findings include that, "symptoms such as increased abdominal size, bloating, urinary urgency, and pelvic pain were found more frequently in women with ovarian cancer" (1). Screening with CA-125 or with combined CA-125 and transvaginal ultrasound in otherwise asymptomatic women with no risk factors was not associated with a decrease in mortality per the Committee Opinion.

Choosing Wisely Recommendation

"Don't perform pelvic ultrasound in average risk women to screen for ovarian cancer."

Incorrect Choices:

A. Though ovarian cancer can be associated with hereditary cancer syndromes, this patient should not be sent for more advanced genetic analysis unless she has a family history indicative of such a history.

C. CA-125 is not an appropriate screening tool as it has not been shown to decrease mortality in asymptomatic women.

D. Transvaginal U/S is not an appropriate screening tool as it has not been shown to decrease mortality in asymptomatic women.

American College of Obstetricians and Gynecologists Committee on Gynecologic Practice. Committee Opinion No. 477: the role of the obstetrician/gynecologist in the early detection of epithelial ovarian cancer. Obstet Gynecol. 2011 Mar;117(3):742-6.

http://www.choosingwisely.org/clinician-lists/5merican-college-obstetricians-gynecologists-pelvis-ultrasound-to-screen-for-ovarian-cancer/

Goff BA, Mandel LS, Melancon CH, Muntz HG. Frequency of symptoms of ovarian cancer in women presenting to primary care clinics. JAMA 2004;291:2705–12.

7. A woman at 24 weeks gestational age presents to her doctor's office with PMH significant for chronic hypertension into her pregnancy. Her physician recommends bedrest for 4-6 hours daily so as to prevent pre-eclampsia. She moves and you are her obstetrician now. What should you recommend regarding her bedrest regimen?

A. Bedrest should actually be decreased to no more than 2 hours daily with no work restrictions otherwise.
B. The regimen is fine as is.

C. Bedrest should not be recommended

Answer C

ACOG recommends against routinely prescribing bedrest for any pregnancy indication. In a meta-analysis of studies evaluating "therapeutic bedrest," McCall et. al. argue that bedrest has not been shown to have any proven benefit. In particular, bedrest has not been shown to prevent preeclampsia. On the other hand, per the evidence there is an increased risk for DVT and increased cost to society as supported by a study showing that antepartum bedrest cost 1.03 billion dollars in 1993.

Choosing Wisely Recommendation:
"Don't routinely recommend activity restriction or bed rest during pregnancy for any indication."

Incorrect Choices:

A and B. Bedrest should NOT be recommended for patients during pregnancy.

http://www.choosingwisely.org/clinician-lists/american-college-obstetricians-gynecologists-activity-restriction/

McCall CA, Grimes DA, Lyerly AD. "Therapeutic" bed rest in pregnancy: unethical and unsupported by data. Obstet Gynecol. 2013;121:1305–8.

8. A pregnant woman comes to clinic during the first trimester for initiation of care. She does not know if she has had chickenpox in the past. She has been feeling well and has not been exposed to any children with rashes or adults with joint pain. Which of the following combination of tests should she receive?

a. CMV IgG/IgM, Parvovirus IgG/IgM, VzV IgG
b. CMV IgG/IgM, Parvovirus IgG/IgM
c. CMV IgG/IgM, VzV IgG
d. VzV IgG/IgM

Answer D

This patient should receive a VzV antibody test to determine her immunity status to chickenpox. If negative, she should receive a varicella vaccine after she has completed her pregnancy. Currently, there is no evidence that the live virus chickenpox vaccine can be maternally transmitted to the fetus but the theoretical risk is considered compelling enough to recommend against vaccination during pregnancy.

Otherwise, per the ACOG practice bulletin no.151, CMV testing is not routinely recommended as IgM positivity is not very specific for primary infection of the mother. Therefore, it tells us little about the potential for CMV maternal-fetal transmission. IgM positivity instead could be an indication of recurrent infection by CMV.

Further, routine screening for Parvovirus in pregnant women is not recommended as seroconversion risk among exposed mothers during pregnancy is low and risk of fetal transmission and sequelae of congenital infection are low as well.

Instead, testing for both these antibody titers is recommended predominately in symptomatic patients.

Choosing Wisely Recommendation:

"Don't perform maternal serologic studies for cytomegalovirus as part of routine prenatal laboratory studies."

Incorrect Choices:

A-C. The patient does not have evidence that would indicate active CMV or parvovirus infection. As such, she does not need testing for these antibodies.

Source:

http://www.choosingwisely.org/clinician-lists/society-maternal-fetal-medicine-maternal-serologic-studies-for-cytomegalovirus-and-toxoplasma/

American College of Obstetricians and Gynecologists. Practice Bulletin #151: Cytomegalovirus, Parvovirus B19, varicella zoster, and toxoplasmosis in pregnancy. Obstet Gynecol. 2015 Jun;125(6):1510-25.

9. Transvaginal U/S of a pregnant G1P0 at 13 weeks shows a cervical length of <25 mm. She does not currently have any complaints. The patient has never had any spontaneous preterm births. She would like to know what the results of her cervical length measurement means for her baby. What do you tell her?

a. "We'll need to check your cervical length more regularly in the third trimester. There is an increased risk that you may deliver preterm."
b. "You've never had a preterm birth and our team is generally only concerned if the length is below 20 mm."
c. "Cervical length before 14 weeks does not tell us much about the risk of pre-term delivery. "
d. "I need to repeat the study before I can give you more definitive information."

Answer – C

Transvaginal U/S for cervical length performed before 14 weeks does not correlate with increased risk for pre-term delivery per the Society for Maternal-Fetal Medicine. They cite a Berghella et al. study which took patients at high risk for preterm delivery and found that a cervical length < 25 mm occurred rarely before 14 weeks. Cervical changes mostly occurred after this gestational age at about an average of 18.7 plus or minus 2.9 weeks.

Choosing Wisely Recommendation

Don't perform routine cervical length screening for preterm birth risk assessment in asymptomatic women before 16 weeks of gestation or beyond 24 weeks of gestation.

Incorrect Choices

A. Cervical length seems to correlate with preterm birth risk between 16 and 24 weeks of gestational age.
B. Women with a history of preterm labor are at greater risk of preterm labor in future pregnancies. Still, a cervical length below 20 mm is not considered a risk factor for preterm labor at 13 weeks gestational age as in this patient.

D. A repeat study is not necessary if these results are accurate.

Sources

http://www.choosingwisely.org/clinician-lists/society-maternal-fetal-medicine-cervical-length-screening-preterm-birth-risk-assessment/

Berghella V, Talucci M, Desai A. Does transvaginal sonographic measurement of cervical length before 14 weeks predict preterm delivery in high-risk pregnancies? Ultrasound Obstet Gynecol. 2003 Feb;21(2):140-4.

10. A G1P0 woman at 32 weeks gestational age with diet-controlled gestational diabetes (GDMA1) comes to your clinic. Your patient's friend comes along with her and mentions that when she was pregnant and had GDM, she had to get an U/S every week for the last 2 months of her pregnancy. Your patient asks how you'll be checking her baby in light of her GDMA1. What do you tell her?

a. She will not require such surveillance.

b. She will require weekly fetal surveillance where she will have a biophysical profile (BPP) score calculated for her but only after 32 weeks.

c. She will require weekly fetal surveillance where she will have a biophysical profile (BPP) score calculated for her beginning at 26 weeks.

Answer A

Per the Society for Maternal Fetal Medicine, anterpartum fetal surveillance is not required in those with GDMA1 as rates of stillbirth are similar to control populations. This is assuming there are no other indications for fetal surveillance. It should be noted that the ACOG Practice Bulletin No 137 on GDM points out that there is not a consensus regarding anterpartum fetal surveillance in GDMA1 patients. Further, ACOG Practice Bulletin No 145 mentions that "all indication for antepartum testing must be considered somewhat relative" given "antepartum fetal surveillance results have not been definitively demonstrated to improved perinatal outcome." It still includes poorly controlled or medically treated GDM as an indication for antepartum fetal surveillance testing though.

Choosing Wisely Recommendation

Don't perform antenatal testing on women with the diagnosis of gestational diabetes who are well controlled by diet alone and without other indications for testing.

Incorrect Choices

B and C. Current evidence indicates that rates of stillbirth are similar between GDMA1 patients and healthy controls.

Source:

http://www.choosingwisely.org/clinician-lists/society-maternal-fetal-medicine-antenatal-testing-with-well-controlled-gestational-diabetes/

ACOG Practice Bulletin No 137

ACOG Practice Bulletin No 145

11. A G1P0 woman at 18 weeks GA comes to your clinic to establish care as she has just moved from out of town. She tells you she received a triple test, "which wasn't concerning," and a cell-free DNA screening test "which also wasn't concerning." She was also told she was going to have to eventually get a quad test to check for chromosomal abnormalities in the baby. After you confirm the information she has given you, what should you tell the patient regarding the necessity of a quad screening?

A. The quad test is performed normally at about this time or between 16 and 18 weeks GA. Combined with the triple serum test you had in the first trimester, it tells us more accurately whether your baby has a chromosomal abnormality.

B. The triple test actually is satisfactory by itself to check for chromosomal abnormalities. You do not need any more testing.

C. You do not need any more testing for aneuploidy since your cell-free DNA screening test was negative.

Answer C

The Society for Maternal Fetal Medicine argues that aneuploidy screening after cfDNA screening has been performed is redundant. Cell free DNA testing is used to detect fetal DNA circulating in the maternal bloodstream and at 10 weeks, results can correlate with risk for Trisomy 13, 18 or 21. There would be no need for the quad screen or the triple screen if the cfDNA is done earlier than these tests are performed. Per The Society for Maternal Fetal Medicine, the yield of aneuploidies recognized by maternal serum testing that are not seen in cfDNA screening is too low to warrant such testing.

Choosing Wisely Recommendation

Don't order serum aneuploidy screening after cfDNA aneuploidy screening has already been performed.

Incorrect Choices

A and B. Cell free DNA Testing does not need to be confirmed with aneuploidy screening per the Society for Maternal Fetal Medicine.

Sources

http://www.choosingwisely.org/clinician-lists/society-maternal-fetal-medicine-serum-aneuploidy-screening-after-cfdna-aneuploidy/

Committee Opinion No. 640: Cell-Free DNA Screening For Fetal Aneuploidy. Obstet Gynecol. 2015;126(3):e31-7.

12. A 55 yo male with adhesive capsulitis of his right shoulder goes to his first physical therapy appointment. Which of the following interventions is most likely to improve his functional outcomes?

A. Heat and massage
B. Exercise-related interventions
C. Iontophoresis and phonophoresis
D. Electrotherapy

Answer B

Per the American Physical Therapy Association, "a carefully designed active program has a greater impact on pain, mobility, function and quality of life" as compared with heat. There recommendations are supported Jewell et. al. who showed that patients with adhesive capsulitis who received PT outpatient therapy had improved outcomes if they received "joint mobility interventions" or "exercise-related interventions."

Choosing Wisely Recommendation

Don't use (superficial or deep) heat to obtain clinically important long term outcomes in musculoskeletal conditions.

Incorrect Choices:

A, C, D. In the Jewell study, there is no evidence that heat and massage, iontophoresis and electrophoresis or electrotherapy make a clinically significant difference for patients with adhesive capsulitis.

Source

http://www.choosingwisely.org/clinician-lists/apta-use-of-heat-for-musculoskelatal-conditions/

Jewell DV, Riddle DL, Thacker LR. Interventions associated with an increased or decreased likelihood of pain reduction and improved function in patients with adhesive capsulitis: a retrospective cohort study. Phys Ther. 2009 May;89(5):419-29

13. A 56 yo F patient on your service for rhabdomyolysis is found to have a fever to 101.5 with a cough on day 4 of her admission. Her lungs are clear to auscultation bilaterally but a prelim CXR shows a possible left lower lobe infiltrate. She is started on a hospital-acquired pneumonia (HCAP) regimen and you pan screen for infection including sputum culture and blood cultures. The final read on the CXR shows no evidence of infiltrate and sputum and blood cultures show no growth. Further after 72 hours, the patient's clinical status is much improved with no signs of cough or fever. For how much longer should antibiotics be prescribed?

a. The patient needs another 4-7 days of the HCAP regimen to have a completed abx course.

b. The patient should be narrowed to a community acquired pneumonia regimen.

c. The patient needs therapy to be expanded to include antifungal agents until a source of her fever is identified.

d. Discontinue the patient's antibiotics.

Answer: D

The Society for Healthcare Epidemiology of America argue that antibiotics in hospitalized patients should be discontinued after 72 hours if there is no evidence of clear infection. They base this recommendation on work by the CDC in their Core Elements of Hospital Antibiotic Stewardship Programs papers. In this, the CDC argues that physicians should perform antibiotic "time-outs" on inpatients after 48 hours. During these timeouts, healthcare practitioners should ask; "Does this patient have an infection that will respond to antibiotics? If so, is the patient on the right antibiotic(s), dose, and route of administration? Can a more targeted antibiotic be used to treat the infection (de-escalate)? How long should the patient receive the antibiotic(s)?" This patient has negative workup for an infection with all results returned. She no longer warrants antibiotic therapy.

Choosing Wisely Recommendation: Don't continue antibiotics beyond 72 hours in hospitalized patients unless patient has clear evidence of infection.

Incorrect Choices:

a-c. There is no evidence that the patient has an infection that will respond to antibiotics here. His clinical status has improved and prior evidence of lung involvement has been discounted by the final read of the CXR and improved clinical status.

Source:

http://www.choosingwisely.org/clinician-lists/shea-antibiotics-in-hospitalized-patients/

Core Elements of hospital antibiotic stewardship programs from the Centers for Disease Control and Prevention [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; 2015 [updated 2015 May 7; cited 2015 Jul 21]. Available from:http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html

14. A 62 yo F on your service for pancreatitis had one loose stool overnight. A C Diff toxin assay (EIA) was sent. The patient has had formed stools otherwise, has not been on antibiotics recently, is afebrile and denies abdominal pain. The C Diff assay returns positive. How should you proceed?

a. Begin metronidazole for the patient
b. Repeat the assay to confirm the result. If positive, treat.
c. Treatment is not necessary.
d. Begin oral vancomycin for this patient.

Answer C

This patient has C diff positivity but does not have clinical symptoms associated with the infectious disease. As such, she does not warrant treatment. In fact, she did not have clinically significant diarrhea, which is defined as 3 or greater liquid stools per day. Per Peterson and Robiscek, patients who do not have clinically significant diarrhea for at least 1 to 2 days do not warrant C Diff testing. This patient should not have received the toxin assay for having only one loose stool overnight. Other indications for testing include recent antibiotic use, fever, or elevated WBC with clinical suspicion of disease.

Choosing Wisely Recommendation: Don't perform urinalysis, urine culture, blood culture or *C. difficile* testing unless patients have signs or symptoms of infection. Tests can be falsely positive leading to over diagnosis and overtreatment.

Source:

http://www.choosingwisely.org/clinician-lists/shea-urinalysis-urine-culture-blood-culture-or-c-difficile-testing/

Incorrect Choices:

A, B, D. This patient does not have clinically significant diarrhea and should not be tested in the first place.

Peterson LR, Robicsek A. Does my patient have Clostridium difficile infection? Ann Intern Med. 2009 Aug 4;151(3):176-9.

Dubberke ER, Carling P, Carrico R, Donskey CJ, Loo VG, McDonald LC, Maragakis LL, Sandora TJ, Weber DJ, Yokoe DS, Gerding DN. Strategies to prevent Clostridium difficile infections in acute care hospitals: 2014 update. Infect Control Hosp Epidemiol. 2014 Sep;35 Suppl 2:S48-65.

15. A physician on nights receives a call regarding incontinence in a 78 yo M on the inpatient service for sepsis secondary to pneumonia. The patient states he has had urinary incontinencefor many years and occasionally feels an uncontrollable urge to urinate. He normally wears diapers for this. The physician looks through the patient's chart and sees that he has been previously diagnosed with urge incontinence. The physician places a foley catheter. Two days later, the patient begins to develop fevers, cloudy urine, and change in mental status. The patient is diagnosed with Catheter-Associated UTI. How could this have been prevented?

a. Using an antimicrobial/antiseptic catheter would have decreased the likelihood of CA-UTI.

b. This patient needed routine bladder irrigation.

c. This patient needed routine catheter or bag changes.

d. This patient did not have an indication for foley catheter placement.

e. The catheter should have been removed after 24 hours.

Answer D

Urge incontinence in this context is not an appropriate indication for Foley placement. The patient has an acceptable method of care (diapers) that avoid the infection risk of CA-UTI. The patient eventually develops CA-UTI as a result. Per Nicolle et. al., strategies such as routine bladder irrigation and catheter changes range in effectiveness from not proven to be effective at all to moderately effective. Further, these strategies do not supersede the need to only catheterize patient when truly indicated.

Choosing Wisely Recommendation: Avoid invasive devices (including central venous catheters, endotracheal tubes and urinary catheters) and, if required, use no longer than necessary. They pose a major risk for infections.

Incorrect Choices:

A, B, C, E. None of these methods are proven to decrease the risk of CA-UTI.

Sources:

http://www.choosingwisely.org/clinician-lists/shea-invasive-devices/

Lo E, Nicolle LE, Coffin SE, Gould C, Maragakis LL, Meddings J, Pegues DA, Pettis AM, Saint S, Yokoe DS. Strategies to prevent catheter-associated urinary tract infections in acute care hospitals: 2014 update. Infect Control Hosp Epidemiol. 2014 Sep;35 Suppl 2:S32-47.

16. A patient has had an elective laparoscopic cholecystectomy performed for symptomatic biliary colic. He received one dose of cefazolin before the operation. How long should prophylaxis for SSI be continued post-operatively for the patient in question 1?

a. 2 days
b. 3 days
c. 7 days
d. 10 days
e. Post-operative prophylaxis is not necessary

Answer-E

The "Society for Healthcare Epidemiology of America" recommends that practitioners not continue prophylactic antibiotics for surgical site infections (SSIs) after patient have left the OR. Benefits of such usage is limited and the risk of C Diff and antibiotic resistant bacterial infections is increased.

Recommendations: Per the "Society for Healthcare Epidemiology of America," practitioners should not continue prophylaxis for SSIs after the patient has left the OR.

Incorrect Choices:

A-D. As mentioned above, SSI prophylaxis is not necessary following an operation.

Source:

http://www.choosingwisely.org/clinician-lists/shea-prophylactic-antibiotics/

17. A 54 yo M with type II diabetes presents to your clinic for f/u after having been admitted to the hospital one month ago. He tells you he was treated for pneumonia and c. diff infection. He has completed the course of all his prescribed antibiotics and has been well since with no symptoms reported on review of systems. Vitals are currently normal. A urinalysis is accidentally sent and is

found to be positive with 3+ leukocyte esterase and moderate bacteria. On reflex urine culture, you find $>10^5$ cfu/mL E Coli growing. How should you manage this finding?

a. This patient has diabetes and warrants treatment with Cipro for 7 days.

b. Treatment of asymptomatic bacteriuria is unnecessary and puts this patient at a higher risk of a recurrent c diff infection.

c. Treatment of asymptomatic bacteriuria is unnecessary but does not change the risk of a recurrent c diff infection since colonic bacteria have not recolonized the bowel yet.

d. This patient has diabetes and warrants treatment with Cipro for 7 days as well as a more thorough infectious workup including CXR and blood cultures.

Answer B

The Society for Healthcare Epidemiology of America argues that physicians should make sure to only prescribe antibiotics if necessary in patients recovering from c. diff. Such patients have an up to three time's greater likelihood of experiencing c. diff infection reoccurrence if given antibiotics. Yet, Shaunessy et al. found in a retrospective review of MInnesota VA records that of the 57% of patients with c. diff who received antibiotics during or after their treatment of c. diff, 77% of patients received at least one unnecessary dose. In this patient case, it would be appropriate to avoid treating with antibiotics as there is no indication given the patient is asymptomatic.

Choosing Wisely Recommendation: Don't use antibiotics in patients with recent *C. difficile* without convincing evidence of need. Antibiotics pose a high risk of *C. difficile* recurrence.

Incorrect Choices:

A and D. The patient does not have symptoms and as such should not be treated for a UTI. Further, per recent recommendations from the FDA, fluoroquinolones should only be used in UTI if there is no other equivalent option.

C. Patients are at greater risk for c diff the more unnecessary antibiotics are used.

Source:

http://www.choosingwisely.org/clinician-lists/shea-antibiotics-in-patients-with-recent-c-difficile/

Shaughnessy MK, Amundson WH, Kuskowski MA, DeCarolis DD, Johnson JR, Drekonja DM. Unnecessary antimicrobial use in patients with current or recent Clostridium difficile infection. Infect Control Hosp Epidemiol. 2013 Feb;34(2):109-16.

18. A 38 yo obese female patient with history of venous stasis related edema in her legs presents to your clinic with itching and redness on her ankles that has developed over the last 2 weeks. The patient's vital are normal and on physical exam, you notice dilated veins along her calves, and well-demarcated

areas of erythema with oozing at the ankles. Distal pulses are normal and the areas are neither tender nor hot. CBC is ordered and comes back normal. How do you treat this?

a. This is likely cellulitis that requires a 5 day course of an anti-streptococcal agent.

b. This is likely cellulitis that requires a 5 day course of an anti-streptococcal agent and oral corticosteroids to decrease the duration of illness.

c. This is likely cellulitis that requires a 5 day course of an anti-streptococcal agent, an anti pseudomonal agent and oral corticosteroids to decrease the duration of illness.

d. This is likely stasis dermatitis. Assess arterial circulation and apply compression. No antibiotics are necessary.

Answer-D

In this patient with well-demarcated edema at her ankles, stasis dermatitis is the most likely diagnosis. She has existing venous insufficiency and exam does not show a red, hot and tender lesion as is most consistent with cellulitis. Further, as the American Academy of Dermatology argues, bilateral lower extremity cellulitis is unlikely. Rather, bilateral leg swelling erythema is more likely stasis dermatitis, varicose veins, or contact allergies.

Choosing Wisely Recommendation: Don't routinely use antibiotics to treat bilateral swelling and redness of the lower leg unless there is clear evidence of infection.

Source:

http://www.choosingwisely.org/clinician-lists/aad-antibiotics-to-treat-bilateral-swelling-and-redness-of-the-lower-leg/

Incorrect Choices:

A-C. The patient does not require treatment for cellulitis as it is unlikely given the findings are on both legs.

Hirschmann JV, Raugi GJ. Lower limb cellulitis and its mimics: part II. Conditions that simulate lower limb cellulitis. J Am Acad Dermatol. 2012 Aug;67(2):177.e1-9; quiz 185-6.

19. A 20 year old obese female patient comes in to your office asking for help with her acne. On physical exam you note, moderate acne with papules, pustules and a few scars. The patient has excess hairiness around the chin and tells you she has been having her periods irregularly but about every few months. What should you order in evaluating this patient?

a. This patient requires an endocrine panel, which may include free and total testosterone, dehydroepiandrosterone sulfate (DHEA-S), androstenedione, luteinizing hormone, and follicle-stimulating hormone.

b. This patient requires microbiologic evaluation of her acne for accurate treatment.

c. This patient should be sent home with benzoyl peroxide and clindamycin with no further workup.

d. This patient does not require treatment.

Answer-A

According to the "Guidelines of care for acne vulgaris treatment" by Zaenglein AL, et al., patients who present with acne and signs of androgen excess require endocrine evaluation for causes of elevated androgens. For women, the most common cause of elevated androgens is polycystic ovarian syndrome, which likely is the case in this patient. Microbiologic testing is rarely recommended in acne diagnosis and treatment unless gram-negative folliculitis is suspected. Gram negative folliculitis can be confused with severe acne as it presents as uniform and eruptive pustules, with rare nodules, in the perioral and perinasal regions. If gram negative folliculitis is suspected, cultures should be obtained as it requires sensitivities to determine proper treatment.

Choosing Wisely Recommendation: Don't routinely use microbiologic testing in the evaluation and management of acne.

Incorrect Choices:

B-D. The patient does not have evidence of gram negative folliculitis per the given locations of skin lesions described. Further, the patient has evidence of androgen excess per symptoms and as such requires endocrine workup as mentioned in option A.

Source:

http://www.choosingwisely.org/clinician-lists/aad-microbiologic-testing-for-acne/

Zaenglein AL, et al. Guidelines of care for acne vulgaris management. J Am Acad Dermatol;(in press).

20. A patient comes to your office with an erythematous nodule, 3x3 cm, with a central pore. He tells you that the nodule was flesh-colored and recently became red. You diagnose him with an inflamed epidermal inclusion cyst. How do you treat him?

a. Supportive care

b. Anti-staphylococcal antibiotics

c. Incision and drainage of the cyst.

d. Supportive care with f/u in 3 days to monitor regression.

Answer-C

The American Academy of Dermatology recommends treating inflamed epidermal inclusion cysts with incision and drainage or direct injection of corticosteroids. They recommend that antibiotics be avoided

unless infection is confirmed. This recommendation is based off of work by Diven DG, et al. showing that the bacteria present in inflamed and non-inflamed epidermal inclusion cysts are not significantly different.

Choosing Wisely Recommendation: Don't routinely prescribe antibiotics for inflamed epidermal cysts.

Incorrect Choices:

A and D. Supportive care is not appropriate treatment for an epidermal inclusion cyst.

B. Current evidence supports the notion that epidermal inclusion cysts do not get inflamed due to bacteria. As such, antibiotics should theoretically be ineffective.

http://www.choosingwisely.org/clinician-lists/aad-antibiotics-for-red-and-swollen-epidermal-cysts/

Diven DG, Dozier SE, Meyer DJ, Smith EB. Bacteriology of inflamed and uninflamed epidermal inclusion cysts. Arch Dermatol. 1998 Jan;134(1):49-51.

21. A 10 yo patient arrives in your clinic for management of her atopic dermatitis. Her mother tells you she had a flair that was treated with oral corticosteroids two months ago. She has completed her course of steroids and now, she is only taking her topical tacrolimus .1%. She is asymptomatic with no notable findings on physical exam. How should you manage this patient?

a. Begin spaced out injections of corticosteroids to prevent flair recurrence. Promote use of moisturizers.

b. Avoid systemic steroids. Continue treatment with tacrolimus and promote use of moisturizers.

c. Discontinue tacrolimus and begin long term low dose oral corticosteroid treatment to prevent flair recurrence.

d. Continue current regimen and add on long term low dose oral corticosteroid treatment to prevent flair recurrence.

Answer B-

The American Academy of Dermatology recommends avoiding systemic steroids as a long-term treatment for atopic dermatitis. Per the "Guidelines of care for atopic dermatitis…," steroids should only be considered "in severe, rapidly progressive, or debilitating cases in adults or children, while nonsteroidal immunomodulatory agents or phototherapy is being initiated." In this case, our patient has symptomatic control of her atopic dermatitis with appropriate management with tacrolimus.

Choosing Wisely Recommendation: Don't use systemic (oral or injected) corticosteroids as a long-term treatment for dermatitis.

Incorrect Choices:

A, C, D. Systemic corticosteroids can be effective short term therapies but as long term agents, they expose patient to many side effects including diabetes, weight gain and high blood pressure.

Source:

http://www.choosingwisely.org/clinician-lists/aad-long-term-corticosteroid-treatment/

Sidbury R, Davis DM, Cohen DE, Cordoro KM, Berger TG, Bergman JN, Chamlin SL, Cooper KD, Feldman SR, Hanifin JM, Krol A, Margolis DJ, Paller AS, Schwarzenberger K, Silverman RA, Simpson EL, Tom WL, Williams HC, Elmets CA, Block J, Harrod CG, Begolka WS, Eichenfield LF; American Academy of Dermatology. Guidelines of care for the management of atopic dermatitis: section 3. Management and treatment with phototherapy and systemic agents. J Am Acad Dermatol. 2014 Aug;71(2):327-49.

22. A mother who just delivered an infant at 33 weeks tells you that she is interested in a term-equivalent brain "screening" MRI for her baby. She wants to know how the results may change his health outcomes. What do you tell her?

a. There is no evidence that term-equivalent MRI in preterm infants helps predict neurodevelopmental outcomes or correlates with improved health outcomes.
b. Term equivalent MRI does correlate with neurodevelopmental outcomes at age 2 and age 5 and as such, can be used to improved health outcomes.
c. Though term equivalent MRI does correlate with neurodevelopmental outcomes at age 2 and age 5, there is not convincing evidence that routine MRIs result in improved health outcomes.

Answer C

The American Academy of Pediatrics recommends against routine term brain MRIs in pre-term infants because they feel evidence regarding improved long-term outcomes in such patients is lacking. This is in spite of evidence that shows that term brain MRIs of preterm infants correlates with neurodevelopmental outcomes at age 5 as demonstrated by Setanen et al. In this case, there is no acute indication for MRI, and a routine or "screening" MRI, given the current literature, is unnecessary.

Choosing Wisely Recommendation: Avoid routine screening term-equivalent or discharge brain MRIs in preterm infants.

Incorrect Choices:

A and B. There is evidence that term-equivalent MRIs correlate with neurodevelopmental outcomes in infants. There is no evidence that this affects health outcomes though and as such, routine screening with MRI in preterm infants should be avoided.

Sources:

http://www.choosingwisely.org/clinician-lists/american-academy-pediatrics-section-perinatal-pediatrics-routine-term-equivalent-or-discharge-brain-mris-in-preterm-infants/

Setänen S, Haataja L, Parkkola R, Lind A, Lehtonen L. Predictive value of neonatal brain MRI on the neurodevelopmental outcome of preterm infants by 5 years of age. Acta Paediatr. 2013 May;102(5):492-7.

23. An 82 year old male patient with Alzheimer's Dementia (AD) is found to have the APOE4 allele during a research study. He never had APOE genotyping even though his mother and father both suffered from AD in their 80s. How should he have been managed differently?

a. APOE genotype testing is absolutely indicated for patients with multiple first-degree relatives with AD.

b. APOE genotype testing is relatively indicated for patients with multiple first-degree relatives with AD.

c. Evidence is minimal regarding the outcomes of APOE genotype testing and as such no recommendations have been made.

d. It is recommended that APOE genotype testing not be offered as a predictive tool of AD.

Answer D

The American College of Medical Genetics and Genomics recommends against using APOE genotype testing as a predictive test for AD. This recommendation is based off of research demonstrating "low sensitivity and specificity of testing, lack of preventive options, and the difficult nature of effectively conveying probabilistic risk" per the Joint Practice Guidelines for Genetic Counseling and testing for AD.

Choosing Wisely Recommendation

Don't order APOE genetic testing as a predictive test for Alzheimer disease.

Incorrect Choices:

A-C. APOE genetic testing is recommended against as a test for AD because of its poor sensitivity and specificity.

Sources:

http://www.choosingwisely.org/clinician-lists/american-college-medical-genetics-genomics-apoe-genetic-testing-to-predict-alzheimer-disease/

Goldman JS, Hahn SE, Catania JW, LaRusse-Eckert S, Butson MB, Rumbaugh M, Strecker MN, Roberts JS, Burke W, Mayeaux R, Bird T; American College of Medical Genetics and the National Society of Genetic Counselors. Genetic counseling and testing for Alzheimer disease: joint practice guidelines of the American College of Medical Genetics and the National Society of Genetic Counselors. Genet Med. 2011 Jun;13(6):597-605.

24. Following diagnosis of hepatic vein thrombosis, a 36 year female undergoes a thrombophilia workup. Which of the following groups of tests can be reasonably included?

a. Factor V Leiden, MTHFR gene testing, Antiphospholipid Antibodies

b. MTHFR gene testing, Factor V Leiden, Prothrombin Gene Mutation

c. MTHFR gene testing, Prothrombin Gene Mutation, Antiphosopholipid Antibodies

d. Prothrombin Gene Mutation, Antiphospholipid Antibodies, Factor V Leiden

Answer-D

The American College of Medical Genetics and Genomics recommends against ordering MTHFR genetic testing for thrombophilia workup. This is based off of recent research disproving an association between MTHFR gene variants and thrombophilia.

Choosing Wisely Recommendation:

Don't order MTHFR genetic testing for the risk assessment of hereditary thrombophilia.

Incorrect Choices:

A-C. Evidence indicates that abnormal MTHFR gene variants are not associated with thrombophilia.

Source:

http://www.choosingwisely.org/clinician-lists/american-college-medical-genetics-genomics-mthfr-genetic-testing-for-hereditary-thrombophilia/

25. You are taking care of two patients on your medicine service, each with elevated liver transaminases (elevated ALT/AST) and hepatomegaly but otherwise normal labs. For your first patient, you find out that he has had no recent travel, no recent toxic or medication ingestions, and that his mother has hereditary hemochromatosis (HFE). You order an ultrasound, a viral hepatitis panel and a hereditary hemochromatosis gene test. You're second patient tells you he has had no recent travel, no recent toxic or medication ingestions, and that he has no family history of liver disease. Which of the following tests would be appropriate to order for the second patient?

a. HFE gene testing, Viral Hepatitis Panel

b. RUQ Abdominal U/S, Viral Hepatitis Panel, HFE gene testing

c. RUQ Abdominal U/S, Viral Hepatitis Panel

Answer C

The American College of Medical Genetics and Genomics recommends against testing for the HFE genotype unless patients have iron overload or a family history of HFE. The first patient in this case has a family history of HFE and warrants testing with HFE. The second patient does not have a similar history nor is there any mention of a family history of HFE. There are many more common causes of

liver disease than HFE in this patient's demographic include NAFLD, chronic hepatitis infection or alcoholic liver disease.

Choosing Wisely Recommendation: Don't order HFE genetic testing for a patient without iron overload or a family history of HFE-associated hereditary hemochromatosis

Incorrect Choices

A and B. Hereditary hemochromatosis is very rare even among those with elevated transaminases.

Source:

http://www.choosingwisely.org/clinician-lists/american-college-medical-genetics-genomics-hfe-genetic-testing/

Bacon BR, Adams PC, Kowdley KV, Powell LW, Tavill AS; American Association for the Study of Liver Diseases. Diagnosis and management of hemochromatosis: 2011 practice guideline by the American Association for the Study of Liver Diseases. Hepatology. 2011 Jul;54(1):328-43.

26. You are caring for a 10 year old male patient new to your practice. Upon retrieving the family history, you find that the patient's father has hereditary hemochromatosis (HFE). How should you manage this patient's care?

a. The patient does not need HFE testing. He likely has the disease.

b. Assess if the patient has had prior genetic testing in the past.

c. Order HFE genetic testing.

d. The patient's HFE would have presented with symptoms by now. Testing is not necessary.

Answer-B

As mentioned in question 25, those patients with family history of HFE should receive genetic testing for HFE. Yet, the American College of Medical Genetics and Genomics recommends asking patients about prior genetic testing and assessing medical records so as to avoid duplicate testing. Otherwise, duplicate genetic tests are needed for uncertainty about the existing tests validity.

Choosing Wisely Recommendation**:** Don't order a duplicate genetic test for an inherited condition unless there is uncertainty about the validity of the existing test result.

Incorrect Choices:

A. There is no guarantee that the patient received the autosomal dominant allele necessary to cause the disease.

C. The patient may have had genetic testing in the past making testing now unnecessary.

D. Symptoms from hemochromatosis usually began at age 30.

Source:

http://www.choosingwisely.org/clinician-lists/american-college-medical-genetics-genomics-duplicate-genetic-tests-for-inherited-condition/

Miller CE, Krautscheid P, Baldwin EE, Tvrdik T, Openshaw AS, Hart K, Lagrave D. Genetic counselor review of genetic test orders in a reference laboratory reduces unnecessary testing. Am J Med Genet A. 2014 May;164A(5):1094-101.

27. A neonatologist who suspects an inborn error of metabolism in his 2 month old patient with failure to thrive orders whole genome sequencing after a thorough medical workup with no revealing findings. The results of the genome sequencing reveal a biotinidase deficiency and a deafness mutation. The neonatologist reveals the two findings to the patient's parents. Which answer best captures what should have been included in the consent the neonatologist obtained prior to the genome sequencing?

a. Permission to sequence the genome of the patient with the purpose of finding potential metabolic mutations leading to the patient's failure to thrive.

b. Permission to sequence the genome of the patient with the purpose of finding potential metabolic mutations leading to the patient's failure to thrive. Also include that there is also the possibility of there being incidental findings outside of the medically indicated area of interest.

c. Permission to sequence the genome of the patient with the purpose of finding potential metabolic mutations leading to the patient's failure to thrive. Also include that there is also the possibility of there being incidental findings outside of the medically indicated area of interest. Review with the patient the potential benefits (e.g., confirming a suspected genetic diagnosis), potential harms (e.g., psychosocial concerns), limitations of testing (e.g., a mutation may be missed), implications of the test results for family members, and alternatives to exome or genome sequencing.

d. No consent is needed for this medically indicated test.

Answer C

American College of Medical Genetics and Genomics argues in a recent recommendations paper that any genome sequencing consent should include the possibility of incidental or secondary findings. These are defined as mutations unrelated to the medically indicated reason for genetic testing. In addition, the ACMG argues that patients should understand the potential harms and benefits of testing as well as the limitations.

Choosing Wisely Recommendation: Don't order exome or genome sequencing before obtaining informed consent that includes the possibility of secondary findings.

Sources:

http://www.choosingwisely.org/clinician-lists/american-college-medical-genetics-genomics-exome-or-genome-sequencing-without-consent/

ACMG Board of Directors. ACMG policy statement: updated recommendations regarding analysis and reporting of secondary findings in clinical genome-scale sequencing. Genet Med. 2015 Jan;17(1):68-9.

28. Prior to a laparoscopic Roux-en-Y gastric bypass , a 62 yo woman is found to have multiple gallstones in her gallbladder on CT abdomen. 6 weeks following her procedure, the patient asks if she'll need surgery for her gallbladder. She denies any history of abdominal pain, nausea or vomiting. Her PMH includes HTN, and peripheral vascular disease. How should you respond?

a. We will have to remove your gallbladder. This is routine when people have gallstones.

b. We will have to remove your gallbladder. This is because you're risk is high considering you have peripheral vascular disease.

c. We do not have to remove your gallbladder. This is because you are asymptomatic currently and we don't want to expose you to the risk of complications of a procedure.

d. We do not have to remove your gallbladder since it would require open repair as it does normally for people over age 60.

Answer C

The American Society for Metabolic and Bariatric Surgery recommends against routinely removing gallbladders unless clinically indicated. For bariatric surgeons, this includes not performing routine cholecystectomy while performing bariatric surgery. They argue that the risk of bile duct injury is increased with use of lap cholecystectomy, though it is still infrequent, and normal and asymptomatic patients should not be exposed to this risk. The patient in this case is completely asymptomatic so a cholecystectomy is not indicated. Of note, there is not age differentiating when to use open vs. laparoscopic technique as mentioned in response d.

Choosing Wisely Recommendation:

Don't routinely remove the gallbladder unless clinically indicated.

Sources:

http://www.choosingwisely.org/clinician-lists/american-society-metabolic-bariatric-surgery-routine-gallbladder-removal/

Tsirline VB, Keilani ZM, El Djouzi S, Phillips RC, Kuwada TS, Gersin K, Simms C, Stefanidis D. How frequently and when do patients undergo cholecystectomy after bariatric surgery? Surg Obes Relat Dis. 2014 Mar-Apr;10(2):313-21.

29. Following a Roux-en-Y gastric bypass, a 43 yo male patient with previously diagnosed OSA is extubated with no difficulty. The patient uses APAP while sleeping with a low apnea-hypopnea index of

2 (normal range 0-4) as noted at his last sleep clinic visit. His vitals are within normal range in the PACU. Where should he be transferred?

a. Hospital Floor

b. ICU

c. He needs to be re-intubated in the PACU and then transferred to the ICU for a day.

Answer A

The American Society for Metabolic and Bariatric Surgery recommend against routine use of the ICU following bariatric surgery. This is to avoid increased risk of nosocomial infections in the ICU. Further, no difference in perioperative and postoperative complication rate was demonstrated when comparing care of morbidly obese OSA patients and non OSA patients in a study by Grover et al. Both groups of patients in the Grover study were appropriately diagnosed and treated for their sleep apnea. Morbidly obese OSA patients with appropriate control such as the one in this case then are not necessarily high risk. This recommendation does not apply to those patients with undiagnosed OSA and as such, those patients without appropriate therapy.

Choosing Wisely Recommendation

Don't routine use the intensive care unit for postoperative monitoring.

Incorrect Choices:

b-c. Intubation is not indicated for this patient without respiratory failure.

Sources:

http://www.choosingwisely.org/clinician-lists/american-society-metabolic-bariatric-surgery-postoperative-monitoring-in-the-icu/

Grover BT, Priem DM, Mathiason MA, Kallies KJ, Thompson GP, Kothari SN. Intensive care unit stay not required for patients with obstructive sleep apnea after laparoscopic Roux-en-Y gastric bypass. Surg Obes Relat Dis. 2010 Mar 4;6(2):165-70.

30. A patient with a past history of spinal cord injury (SCI) secondary to motorcycle crash, who has a chronic suprapubic urinary catheter for neurogenic bladder, is currently on your service for a CHF exacerbation. Overnight the patient has elevated temperatures and on exam this morning, you find that the patient has increased tone and reflexes in the lower extremities from baseline bilaterally. Urine specimen from the catheter shows 12000 CFUs/mL of gram negative rods. Which is the most appropriate next step in management?

a. Prescribe acetaminophen and manage patient expectantly.

b. Wait for more vitals before making any decision regarding management.

c. Start antibiotic coverage for presumed Urinary Tract Infection (UTI).

d. Wait for sensitivities and then treat patient accordingly.

e. Voiding trial

Answer C

This patient with a chronic indwelling catheter meets criteria for treatment. According to 2009 guidelines from the Infectious Disease Society of America regarding, "CA-UTI in patients with indwelling urethral, indwelling suprapubic, or intermittent catheterization is defined by the presence of symptoms or signs compatible with UTI with no other identified source of infection along with greater than or equal to 10^3 colony forming units (cfu)/mL of greater than or equal to 1 bacterial species in a single catheter urine specimen." Based off this criteria, The American Urological Association makes the recommendation that antimicrobials should be prescribed only in those who at least have symptoms of UTI on history and exam.

Choosing Wisely Recommendation

Don't prescribe antimicrobials to patients using indwelling or intermittent catheterization of the bladder unless there are signs and symptoms of urinary tract infection.

Incorrect Choices:

a-b, d-e. This patient meets criteria for a UTI given his symptoms of increased tone and lower extremity reflexes and growth of an organism on urine culture.

Sources:

http://www.choosingwisely.org/clinician-lists/american-urological-association-antimicrobials-indwelling-or-intermittent-bladder-catheterization/

Diagnosis, prevention, and treatment of Catheter-Associated Urinary Tract Infection in adults: 2009 International Clinical Practice Guidelines from the Infectious Diseases Society of America [Internet]. Arlington (VA): Infectious Diseases Society of America; 2010 [cited 2014 Nov 4]. Available from:www.auanet.org/common/pdf/education/clinical-guidance/UTI-in-Adults.pdf.

31. A 55 yo Caucasian patient who you have followed for many years presents to his yearly appointment for medication renewal. He asks you about prostate cancer screening with the PSA for patients his age. Which of the following is the most appropriate response?

a. "Many studies show that there is more harm than benefit in routine screening for the PSA."

b. "PSA screening over the long term has some costs but the benefits for people in the 55-64 age group are greater.

c. “There are costs and benefits to PSA screening. Why don’t you tell me your understanding and expectations of screening and we can come to a shared decision regarding whether a PSA is appropriate for you?

d. “This is a question more appropriate for a urologist. Why don’t I refer you?”

e. “I’m sorry. I should have already ordered that for you.”

Answer C

The American Urological Association (AUA) argues that physicians should focus on shared decision making with regards to PSA screening with patients. In the AUA guideline from 2013 on “Early detection of prostate cancer,” the society argues that patients should be made aware of prostate cancer specific mortality with screening as well as harms of over diagnosis, composite medical complications from workup of elevated PSA, etc. The AUA guidelines paper provides many specific studies that quantify costs and benefits so as to assist in shared decision making with patients.

Choosing Wisely Recommendation: Offer PSA screening for detecting prostate cancer only after engaging in shared decision making.

Incorrect Choices:

a. This may be true but it would be inappropriate to mention this without bringing up studies that show decreased prostate cancer specific mortality with screening for particular subgroups.
b. This would be inappropriate as the patient should be the one to determine whether the costs are greater than the benefits of screening and vice versa.

d. A urology referral is not necessary for shared decision making.

e. Ordering the test without going over costs and benefits is inappropriate.

Sources:

http://www.choosingwisely.org/clinician-lists/american-urological-association-psa-screening/

Early detection of prostate cancer: American Urological Association guideline, 2013 [Internet]. Linthicum (MD): American Urological Association; 2013. Available from: www.auanet.org/education/guidelines/prostate-cancer-detection.cfm.

32. A 56 yo African American Male is diagnosed with prostate cancer following TRUS-guided biopsy of the prostate. His Gleason Score is 6 and his PSA is found to be 16 ng/mL. Which of the following tests are most appropriate?

a. Bone Scan

b. Bone Scan, MRI pelvis

c. Bone Scan, MRI pelvis, CT abdomen

d. The above tests are not necessary.

Answer D

This patient with a Gleason Score of 6 and a PSA < 20.0 ng/ml does not meet criteria for radiologic staging or a bone scan according to the American Urological Association on pretreatment staging of prostate cancer published in 2013. Radiologic staging with a CT or MRI is considered generally unnecessary if the PSA is < 20.0 ng/ml. Bone scan is also considered generally unnecessary with clinically localized disease + when the PSA is < 20.0 ng/ml. Also, a Gleason Score of 6 has a low potential for progression according to these guidelines.

Choosing Wisely Recommendation: Don't obtain computed tomography scan of the pelvis for asymptomatic men with low-risk clinically localized prostate cancer.

Incorrect Choices

a-c. The patient has low risk for metastatic spread of the cancer given his low Gleason score and PSA.

Sources:

http://www.choosingwisely.org/clinician-lists/american-urological-association-pelvis-ct-scans-for-low-risk-localized-prostate-cancer/

American Urological Association Prostate-Specific Antigen best practice statement, 2013 Revision [Internet]. Linthicum (MD): American Urological Association; 2013 [cited 2014 Nov 4].Available from: www.auanet.org/education/guidelines/prostate-specific-antigen.cfm.

33. A 26 yo female patient presents to the urgent care with 3 days of dysuria. UA is significant for positive leukocyte esterase and nitrites. The patient has no significant past medical history. Which of the following antibiotics is least appropriate given this patient's presentation?

A. Trimethoprim-sulfamethoxazole

B. Ciprofloxacin

C. Fosfomycin

D. Nitrofurantoin

Answer B

In those women with uncomplicated UTIs, the American Urogynecologic Society recommends against using fluoroquinolones as a first line agent. Uncomplicated UTIs are defined as those that occur in premenopausal, non-pregnant women with no known urologic abnormalities or medical comorbidities. This is based off of 2010 Infectious Disease Society of America Guidelines regarding treatment of

uncomplicated UTIs, in which it is argued that though 3 day courses of fluoroquinolones for UTI are effective, using this treatment too often allows for the development of drug resistant organisms. Further, more recent guidelines from the FDA point out that fluoroquinolones are associated with many more side effects than other antibiotics and should not be used unless these other options are not appropriate. The other agents mentioned are appropriate for first line treatment of uncomplicated UTI.

Choosing Wisely Recommendation: Avoid using a fluoroquinolone antibiotic for the first-line treatment of uncomplicated urinary tract infections (UTIs) in women.

Incorrect Choices:

a. Three days of trimethoprim-sulfamethoxazole are adequate for uncomplicated UTI.

c. A one time dose of fosfomycin is adequate for uncomplicated UTI.

d. A five to seven day course of fosfomycin is adequate for uncomplicated UTI.

Sources:

http://www.choosingwisely.org/clinician-lists/augs-fluoroquinolone-antibiotics-for-uncomplicated-utis/

Gupta K, Hooton TM, Naber KG, Wullt B, Colgan R, Miller LG, Moran GJ, Nicolle LE, Raz R, Schaeffer AJ, Soper DE; Infectious Diseases Society of America; European Society for Microbiology and Infectious Diseases. International clinical practice guidelines for the treatment of acute uncomplicated cystitis and pyelonephritis in women: 2010 update by the Infectious Diseases Society of America and the European Society for Microbiology and Infectious Diseases. Clin Infect Dis. 2011 Mar 1;52(5):e103-20.

34. A 35 yo G2P2 African American woman presents to your office for a pre-operative appointment for hysterectomy to manage recurrent fibroid uterus. The patient's father died due to coronary artery disease at age 46 and her mother has hypertension. Family history is negative for cancer. Which of the following recommendations regarding bilateral salpingo-oopherectomy (BSO) is most appropriate?

A. "Performing a salpingo-oopherectomy is appropriate to decrease cancer risk. I would recommend that for you."

B. "Let's discuss some of the risks of bilateral salpingo-oopherectomy, including the potential cardiac risk for you."

C. "I can't perform the hysterectomy without performing a bilateral salpingo-oopherectomy as well."

D. "Let me do genetic studies to determine your risk for ovarian cancer first."

E. "We determine if a salpingo-oopherectomy is appropriate perioperatively."

Answer B

The American Urogynecologic Society recommends against BSO in patients with average risk of ovarian cancer. This is defined as not having positive germline mutations or family history of ovarian cancer. This is based off of Society of Gynecologic Oncologists Clinical Practice Committee guidelines, which recommend discussing with patients individual risk factors associate with performing BSO pre menopause. The guidelines mention that some observational studies show that those patients with a strong history of cardiovascular disease may be at added risk due to surgical menopause caused by BSO. Given this patient's family history of CAD at 46 in her father, it would be appropriate to discuss risks and benefits of BSO.Choosing Wisely Recommendation: Avoid removing ovaries at hysterectomy in pre-menopausal women with normal cancer risk.

Incorrect Choices:

A, c-e. A simple hysterectomy would be appropriate in this patient with normal cancer risk.

Sources:

http://www.choosingwisely.org/clinician-lists/augs-ovary-removal-at-hysterectomay-in-pre-menopausal-women/

Berek JS, Chalas E, Edelson M, Moore DH, Burke WM, Cliby WA, Berchuck A; Society of Gynecologic Oncologists Clinical Practice Committee. Prophylactic and risk-reducing bilateral salpingo-oophorectomy: recommendations based on risk of ovarian cancer. Obstet Gynecol. 2010 Sep;116(3):733-43.

35. A 43 yo male presents to your clinic complaining of increased urinary urgency. His past medical history includes poorly controlled Type II Diabetes and a recent L2 Compression fracture following a car accident. Which of the following are the most appropriate initial clinical tools?

a. History, Physical, UA

b. History, Physical, UA, urodynamics

c. History, Physical, UA, cystoscopy

d. History, Physical, UA, urodynamics

e. History, Physical, UA, Renal U/S

Answer A

The American Urogynecologic Society (AUS) recommends that initial evaluation for uncomplicated patients with overactive bladder not include urodynamics, cystoscopy or renal/bladder ultrasound. These studies should be reserved for patients who have failed initial therapies or those in whom clinical suspicion is guided by unusual examination findings. Per the AUS, initial evaluation should include history, physical and urinalysis. Urine culture, post-void residual and bladder diaries are also mentioned as helpful initial tools

Choosing Wisely Recommendation: Don't perform cystoscopy, urodynamics or diagnostic renal and bladder ultrasound in the initial work-up of an uncomplicated overactive bladder (OAB) patient.

Incorrect Choices

b-e. Cystoscopy, urodynamics and ultrasound are not approrpaite for the initial workup of increased urinary urgency.

Source:

http://www.choosingwisely.org/clinician-lists/augs-uncomplicated-overactive-bladder-work-up/

36. A 26 yo female G0P0 comes in complaining of inability to conceive. She has been having unprotected sex with her male partner for 12 years. She has been having regular 4 day periods at 28 day intervals since age 13 with no change over the past year. Her past medical history is significant for an episode of chlamydia for which she never filled her antibiotic prescription. Which of the following sets includes exams most appropriate for the workup of infertility in this patient?

a. Genitourinary exam of the patient, Prolactin of the patient, Sexual History of the patient

b. Genitourinary exam of the patient, Sexual History of the patient, Semen analysis of male partner, Prolactin of the patient

c. Genitourinary exam of the patient, Semen Analysis of Male Partner, Sexual History of the patient

d. Genitourinary exam of the patient, Chlamydia antibodies of the patient, Prolactin of the patient

e. Genitourinary exam of the patient, Chlamydia antibodies of the patient, Prolactin of the patient, Sexual History of the patient

Answer C

The American Society for Reproductive Medicine recommends against routine prolactin testing for patients with regular menses when working up infertility. Women under the age of 35 who have experienced a failure to conceive over 12 months warrant a workup for causes of infertility. For women over 35, workup should begin after 6 months of inability to conceive. Workup should include a thorough history, including sexual history, and physical exam, including genitourinary exam. Semen analysis of the male partner is also warranted as an initial step.

Choosing Wisely Recommendation: Don't perform prolactin testing as part of the routine infertility evaluation in women with regular menses.

Incorrect Choices:

a-b, d-e. Though a genitourinary exam and chlamydia test may be appropriate for infertility evaluation, a prolactin test would not be as an initial step.

Sources:

http://www.choosingwisely.org/clinician-lists/american-society-reproductive-medicine-prolactin-testing-as-part-of-routine-infertility-evaluation/

Kostrzak A, Warenik-Szymankiewicz A, Meczekalski B. The role of serum PRL bioactivity evaluation in hyperprolactinaemic women with different menstrual disorders. Gynecol Endocrinol. 2009 Dec;25(12):799–806.

37. A 47 yo patient comes in to your clinic complaining of hot flashes and irregular menses over the past year. She has just moved to San Diego from Phoenix and tells you that her prior doctor ordered an FSH to determine if menopause was the cause of her irregular menses. Was ordering an FSH appropriate for workup of irregular menses and hot flashes in this woman?

A. No. An FSH level does not diagnose that menopause has begun.
B. Yes. An FSH level is appropriate only if the patient is over the age of 40 though and only for the workup of menopause.
C. No. An FSH level should be obtained only after an LH level is obtained.
D. Yes. An FSH level is appropriate for the workup of irregular bleeding in sexually active women of all ages.
E. No. It is the LH:FSH level that is used to screen for menopause.

Answer A

According to the American Society for Reproductive Medicine, in women over the age of 40, "an FSH level does not predict when the transition to menopause will occur, diagnose that it has begun or provide reassurance that contraception is no longer necessary." The value of FSH changes from day to day and varies from women to women. As such FSH is not appropriate to be used as a laboratory measure of menopause. As such, the society recommends against the use of FSH to diagnose menopause in women over the age of 40.

Choosing Wisely: Don't obtain follicle-stimulating hormone (FSH) levels in women in their 40s to identify the menopausal transition as a cause of irregular or abnormal menstrual bleeding.

Incorrect Choices:

B and D. The FSH is not a sensitive or specific test to determine menopausal transition.

C and E. Neither the ratio of LH:FSH nor the timing of it being obtained make FSH more useful as a tool to predict menopause.

Source:

http://www.choosingwisely.org/clinician-lists/american-society-reproductive-medicine-fsh-levels-irregular-bleeding-in-women-in-their-40s/

Burger HG, Hale GE, Robertson DM, Dennerstein L. A review of hormonal changes during the menopausal transition: focus on findings from the Melbourne Women's Midlife Health Project. Hum Reprod Update. 2007 Nov–Dec;13(6):559–65.

38. A 36 yo woman comes to your clinic complaining of 4 months of amenorrhea. She says 6 months earlier, she had gone to see a reproductive endocrinologist once in her prior hometown of Denver. There, she had an endometrial biopsy and karyotype performed at her only visit. Should an endometrial biopsy and/or a karyotype be performed on initial visits for patients complaining of amenorrhea?

A. Yes to both.

B. Yes to karyotype, No to endometrial biopsy

C. No to both

D. No to karyotype, no to endometrial biopsy

Answer D

The American Society for Reproductive Medicine recommends against obtaining a karyotype for initial evaluation of infertility and against endometrial biopsy in the routine evaluation of infertility. Karyotype analysis is not considered a screening test and is "indicated to further evaluate the etiology of an elevated follicle-stimulating hormone (FSH) in a woman under 40 years of age or in the presence of physical findings suggestive of disorders of sexual development." Further potential findings on endometrial biopsy, such as chronic endometritis, do not actually correlate with fertility and as such, routine endometrial biopsy is not recommended.

Choosing Wisely Recommendation: Don't obtain a karyotype as part of the initial evaluation for amenorrhea.

Choosing Wisely Recommendation: Don't perform endometrial biopsy in the routine evaluation of infertility.

Incorrect Choices:

a-c. Endometrial biopsy and karyotype should not be used to initiate workup of amenorrhea in this patient.

http://www.choosingwisely.org/clinician-lists/american-society-reproductive-medicine-karyotype-for-amenorrhea/

Klein DA, Poth MA. Amenorrhea: an approach to diagnosis and management. Am Fam Physician. 2013 Jun 1;87(11):781–8.

http://www.choosingwisely.org/clinician-lists/american-society-reprodutive-medicine-endometrial-biopsy-to-evaluate-infertility/

Kasius JC, Fatemi HM, Bourgain C, Sie-Go DM, Eijkemans RJ, Fauser BC, Devroey P, Broekmans FJ. The impact of chronic endometritis on reproductive outcome.Fertil Steril. 2011 Dec;96(6):1451–6.

39. A 66 yo male patient with no history of diabetes or chronic kidney disease presents to your clinic for a repeat BP check. His previous BP 2 weeks ago was 146/88 as compared with normal one year ago. On exam this week, his BP measures, 148/84. What is the most appropriaate next course of action?

a. Have patient return to clinic tomorrow for a repeat BP measure.
b. Begin monotherapy with a single anti-hypertensive agent.
c. Begin dual therapy with two anti-hypertensive agents.
d. Have patient return to clinic in two days for a repeat BP measure.
e. Recommend dietary and lifestyle changes to patient for BP control.

Answer E

The Society for Post-Acute and Long-Term Care Medicine recommends a BP goal of SBP<150 and DBP<90 for control of hypertension in individual 60 years of age or older. This is as per JNC 8 guidelines, which recommend these BP goals in patients without Diabetes Mellitus or Chronic Kidney Disease. These guidelines are based off of evidence indicating limited effect on stroke incidence, all-cause mortality and heart failure with more aggressive BP goals. Further, there is evidence that increased blood pressure management is associated with greater number of falls in this population per Tinetti et al. Further clinic visits so close to this date are not necessary to confirm this patient's blood pressure value.

Choosing Wisely Recommendation: Don't initiate antihypertensive treatment in individuals ≥60 years of age for systolic blood pressure (SBP) <150 mm Hg or diastolic blood pressure (DBP) <90 mm Hg.

Incorrect Choices:

A and d. Two elevated blood pressure measurements at 2 weeks apart is adequate to make a diagnosis of hypertension.

b and c. The patient does not have a blood pressure that would warrant treatment given his age.

Sources:

http://www.choosingwisely.org/clinician-lists/amda-antihypertensive-treatment-in-individuals-sixty-and-over/

Muntner P, Bowling CB, Shimbo D. Systolic blood pressure goals to reduce cardiovascular disease among older adults. Am J Med Sci. 2014 Aug;348(2):129-34.

Tinetti ME, Han L, Lee DSH, McAvay GJ, Peduzzi P, Gross CP, Zhou B, Lin H. Antihypertensive medications and serious fall injuries in a nationally representative sample of older adults. JAMA Intern Med. 2014 Apr;174(4):588-95.

40. A 75 yo female patient with ESRD secondary to diabetes and congestive heart failure presents to the Emergency Department with shortness of breath. Per history, she cannot lie flat in bed to sleep and has increased difficulty breathing. She has bilateral basilar crackles on pulmonary exam and an extra S3 heart sound is noted on heart exam. JVP is elevated to 13 cm and 2+ pitting edema is noted in the lower extremities bilaterally. Per a prior primary care visit note on record, you note that the patient has filled out a DNR/DNI form and a Do Not Hospitalize (DNH) form. What is the most appropriate management for this patient?

a. This patient should be admitted for management and workup of fluid overload likely due to CHF and ESRD.

b. This patient should be discharged home immediately given her prior DNH form.

c. Clarify the patient's goals of care and engage in shared decision making with plans to honor the patient's DNH order should she desire.

Answer C

The Society for Post-Acute and Long-Term Care Medicine recommends that physicians not recommend aggressive or hospital-level care for a frail elder "without a clear understanding of the individual's goals of care" and without discussing the potential harms and benefits of hospitalization. This can lead to the avoidance of unnecessary hospitalization by respecting patient's wishes. In this patient, a goals of care discussion would include clarifying and respecting the patient's prior wishes to be DNH as expressed to her primary doctor.

Choosing Wisely Recommendation: Don't recommend aggressive or hospital-level care for a frail elder without a clear understanding of the individual's goals of care and the possible benefits and burdens.

Incorrect Choices:

a. The patient has previously expressed her wish not to be hospitalized.
b. Shared decision making is a flexible process that can be reiterated and readdressed.

Sources:

http://www.choosingwisely.org/clinician-lists/amda-aggressive-or-hospital-level-care-for-frail-elder/

Tulsky JA. Beyond advance directives: importance of communication skills at the end of life. JAMA. 2005 Jul 20;294(3):359-65.

41. A 60 yo female patient presents to your clinic to establish care. She has stage IV small cell lung cancer and would like to discuss placement on hospice given her poor prognosis. She has recently moved from Yemen and has never received any cancer screening. What is most appropriate to offer her?

a. Colonoscopy

b. Mammography, Colonoscopy

c. Just a mammography

d. Cancer screening is not recommended for this patient

e. None of the above

Answer D.

The Society for Post-Acute and Long-Term Care Medicine recommends against screening patients for breast, colorectal or prostate cancer if their life expectancy is less than 10 years. In this patient with stage IV small cell lung cancer who comes in to discuss hospice, her likelihood of mortality within the next five years is high and her life expectancy at this point is less than ten years. Benefits of cancer screening generally do not present until 10 years following the point of screening and as such, would be of no use to this patient.

Choosing Wisely Recommendation: Don't recommend screening for breast, colorectal or prostate cancer if life expectancy is estimated to be less than 10 years.

Incorrect Choices:

a-c, e. The patient does not need breast or colorectal cancer screening given her life expectancy is less than 5 years with her advanced small cell lung cancer.

Sources:

http://www.choosingwisely.org/clinician-lists/amda-cancer-screenings-if-life-expectancy-less-than-10-years/

Clarfield AM. Screening in frail older people: an ounce of prevention or a pound of trouble? J Am Geriatr Soc. 2010 Oct;58:2016-21.

42. A G2P2 42 yo woman presents to your clinic asking about cervical cancer screening. She has completed childbearing and has recently had a hysterectomy performed for control of uterine fibroids. She does not know if she had a total or subtotal hysterectomy. What cervical cancer screening should you recommend to this patient?

a. She needs age appropriate screening for cervical cancer, which includes HPV/Pap testing every 5 years.

b. She does not need any screening as she has already had a hysterectomy.

c. You need to perform a pelvic exam to ascertain whether she has had a total or sub-total hysterectomy. This should guide screening.

d. None of the above.

Answer C

The American College of Preventative Medicine recommends against performing cervical cancer screening in women over the age of 65 and in women who have had total hysterectomies performed for benign diseases. This includes uterine fibroids as in this case. Because this patient does not know what type of hysterectomy she has had, it is important to determine this information per pelvic exam. If she has had a subtotal hysterectomy with an intact cervix, she warrants age appropriate screening for cervical cancer.

Choosing Wisely Recommendation: Don't perform screening for cervical cancer in low-risk women aged 65 years or older and in women who have had a total hysterectomy for benign disease.

Incorrect Choices:

A. This patient could warrant no cervical cancer screening if she had a total hysterectomy.
B. She could still require screening if she has an intact cervix from a subtotal hysterectomy with no evidence of 3 normal cervical cancer screens.

D. The pelvic exam is necessary to ascertain hysterectomy type.

Sources:

http://www.choosingwisely.org/clinician-lists/american-college-preventive-medicine-cervical-cancer-screening/

Moyer; U.S. Preventive Services Task Force. Screening for cervical cancer: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med. 2012 Jun 19;156(12):880-91, W312.

43. A 44 year old female comes into your clinic asking for cancer screening. She says her husband was found to have melanoma and she would like "full-body PET screening for cancer" as she read about on the internet. She is asymptomatic with no significant findings on physical exam. What can you tell this patient about PET scanning for cancer screening in asymptomatic patients?

a. There is no data suggesting whole-body imaging will improve survival in asymptomatic patients.

b. The data is mixed regarding the effect whole-body imaging has on survival in asymptomatic patients.

c. Whole body imaging has an estimated tumor detection rate of 2% and increases effect on survival in asymptomatic patients.

d. None of the above.

Answer A

The American College of Preventative Medicine recommends against use of whole-body screening to detect cancer in asymptomatic patients. In spite of there being data indicating that there is a tumor detection rate of 2%, there is no evidence of increased survival. Further, patients are put at risk with

increased radiation, the stress and anxiety that accompany false-positives, and the social effects of increased costs.

Choosing Wisely Recommendation: Don't use whole-body scans for early tumor detection in asymptomatic patients.

Incorrect Choices:

b-d. Whole-body scans are rarely indicated for cancer diagnosis and should definitely not be used in asymptomatic patients.

Sources:

http://www.choosingwisely.org/clinician-lists/american-college-preventive-medicine-whole-body-scans-for-early-cancer-detection/

Ladd SC. Whole-body MRI as a screening tool? Eur J Radiol. 2009 Jun;70(3):452-62.

44. A 56 yo male patient asks you about the value of taking beta carotene to prevent cardiovascular disease. What can you tell the patient?

a. Beta carotene has no evidence of benefit for preventing cardiovascular disease in healthy patients.

b. Beta carotene has limited evidence of benefit for preventing cardiovascular disease in healthy patients.

c. Beta carotene is well supported as beneficial for preventing cardiovascular disease in healthy patients.

d. Beta carotene is not well-supported as beneficial for preventing cardiovascular disease but has been found to help reduce rates of lung cancer in patients exposed to asbestos.

Answer A

The American College of Preventative Medicine recommends against healthy patients taking beta carotene, multi-vitamins or vitamin E to prevent cardiovascular disease or cancer. Inadequate evidence exists for benefit in preventing cardiovascular disease or cancer. In fact, in patients who smoke or who have been exposed to asbestos, beta carotene is associated with higher rates of lung cancer.

Choosing Wisely Recommendation: Don't take a multi-vitamin, vitamin E or beta carotene to prevent cardiovascular disease or cancer.

Incorrect Choices:

b-d. There is no evidence for benefit of beta carotene in for cardiovascular disease.

Sources:

http://www.choosingwisely.org/clinician-lists/american-college-preventive-medicine-vitamin-supplements/

Moyer; U.S Preventive Services Task Force. Vitamin, mineral, and multivitamin supplements for the primary prevention of cardiovascular disease and cancer: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med. 2014 Apr 15;160(8):558-64.

45. A 74 year old male patient comes to your clinic for routine follow up. 6 months ago, you heard a 2/6 systolic ejection murmur at the LUSB and ordered an echo. Echo showed mild aortic stenosis with jet velocity of 2.5 m/s and normal EF. The patient denied any complaints then and continues to deny complaints today. On exam, you hear a murmur that is unchanged in quality or intensity. Which is the most appropriate statement regarding repeat echo at this time?

a. Echo is not necessary at this time as patient has mild aortic stenosis and his clinical status has not changed.

b. Echo is necessary to monitor for necessity of aortic valve replacement.

c. Echo is not necessary as this patient should already be referred for aortic valve replacement.

d. Echo is necessary to monitor for changes in any of the other valves.

Answer A

The American College of Cardiology recommends against performing echo in patients with mild asymptomatic valve disease if there has been no change in clinical history or exam. This is based off of "Appropriate Use Criteria for Echocardiography" guidelines, which mention that "routine surveillance (<3 y) or mild valvular stenosis without a change in clinical status or cardiac exam" is inappropriate.

Choosing Wisely Recommendation: Don't perform echocardiography as routine follow-up for mild, asymptomatic native valve disease in adult patients with no change in signs or symptoms.

Incorrect Choices:

b. Echocardiography can assist in the evaluation of aortic stenosis requiring surgery. This patient does not have symptomatic disease though.

c. This patient does not require aortic valve replacement given the lack of symptoms.

d. This patient does not need screening for other valvular disease with an echo.

Sources:

http://www.choosingwisely.org/clinician-lists/american-college-cardiology-routine-follow-up-echocardiography-for-mild-asymptomatic-native-valve-disease/

Douglas PS, Garcia MJ, Haines DE, Lai WW, Manning WJ, Patel AR, Picard MH, Polk DM, Ragosta M, Ward RP, Weiner RB. ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SCCT/SCMR 2011 Appropriate Use Criteria for Echocardiography. A Report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, American Society of Echocardiography, American Heart Association, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Critical Care Medicine, Society of Cardiovascular Computed Tomography, and Society for Cardiovascular Magnetic Resonance Endorsed by the American College of Chest Physicians. J Am Coll Cardiol. 2011 Mar 1;57(9):1126-66.

46. A 36 year old female patient tells you she has mitral valve prolapse and that she would like antibiotic prophylaxis before her upcoming root canal. What should you prescribe her?

A. Rifampin
B. Amoxicillin
C. Ceftriaxone
D. Ampicillin/clavulanic acid
E. No prophylaxis required

Answer E

The Infectious Diseases Society of America recommends against use of prophylactic antibiotics in patients with mitral valve prolapse for prevention with infective endocarditis. This is per evidence that the risk for C diff and unwanted selection of resistant microorganisms outweighs the very small to nil benefit from preventing endocarditis in such patients. Indications for endocarditis prophylaxis otherwise can include prosthetic cardiac valve, previous infective endocarditis, or an unrepaired cyanotic heart defect,

Choosing Wisely Recommendation: Avoid prophylactic antibiotics for the treatment of mitral valve prolapse.

Incorrect Choices:

a-d. This patient does not need any antibiotic prophylaxis for her mitral valve prolapse.

Sources:

http://www.choosingwisely.org/clinician-lists/infectious-diseases-society-prophylactic-antibiotics-for-mitral-valve-prolapse/

Gopalakrishnan PP, Shukla SK, Tak T. Infective endocarditis rationale for revised guidelines for antibiotic prophylaxis. Clin Med Res. 2009 Sep;7(3):63–8.

47. A 19 yo patient presents to your office complaining of fever, sore throat and runny nose. He has had these symptoms for three days and denies cough, facial pain or any other symptoms. His temperature is 100.8 and exam is notable for erythema in the oropharynx, clear rhinorrhea noted in the nares and clear lungs. Monospot test is negative. How should you treat the patient?

A. Azithromycin

B. Ceftriaxone

C. Supportive therapy

D. Amoxicillin

C. Amoxicillin/Clavulanic Acid

Answer C

This patient with mild fever, rhinorrhea, normal lung exam and no reports of productive sputum likely has an upper respiratory infection. Because upper respiratory infections are predominately viral, the Infectious Disease Society of America recommends against using antibiotics for treatment. Instead supportive treatment with antipyretics, fluid hydration and short courses of decongestants is suggested. This helps avoid the overuse of antibiotics with concurrent antimicrobial resistance, adverse effects and increased costs.

Choosing Wisely Recommendation: Avoid prescribing antibiotics for upper respiratory infections.

Sources:

http://www.choosingwisely.org/clinician-lists/infectious-diseases-society-antbiotics-for-upper-respiratory-infections/

Zoorod R, Sidani MA, Fremont RD, Kihlberg C. Antibiotic use in acute upper respiratory tract infections. Am Fam Physician. 2012 Nov 1;86(9):817-22.

48. You are following a patient with complaints of weight gain and constipation over the past 6 weeks. Hypothyroidism is part of your differential. Which of the following are the most appropriate labs for initial workup?

a. TSH

b. TSH, Free T3

c. TSH, Free T3, Free T4

d. TSH, Free T3, Free T4, Thyroglobulin

e. TSH, Free T3, Free T4, Thyroglobulin, Thyroid Antibody Tests

Answer A

The American Society for Clinical Pathology recommends against ordering multiple tests in initial evaluation of patients with suspected thyroid disease. Instead, they argue that patients should be tested with TSH and other tests, such as Free T4, should be ordered following abnormal results of the

TSH. This is because the TSH is able to detect subclinical thyroid disease even in those patients without symptoms.

Choosing Wisely Recommendation:

http://www.choosingwisely.org/clinician-lists/american-society-clinical-pathology-suspected-thyroid-disease-evaluation/

Dufour DR. Laboratory tests of thyroid function: uses and limitations. Endocrinol Metab Clin North Am. 2007 Sep;36(3):579-94, v.

49. A 62 yo male presents to your ED with substernal chest pain for the past 2 hours with radiation down his left arm. In addition to your normal initial management for acute coronary syndrome, you send cardiac markers. Which of the following are the most appropriate set of markers to send?

a. Troponin I

b. Troponin I, CK-MB

c. Troponin I, CK-MB, myoglobin

d. none of the above

e. any of the above

Answer A

The American Society for Clinical Pathology recommends against the use of myoglobin or CK-MB to diagnose myocardial infarction. The Society argues that Troponin I or T should be used instead as these markers are more specific and sensitive for myocardial infarction (MI) the myoglobin or CK-MB. Further, these markers become elevated at a faster than CK-MB and at either the same or a faster rate than myoglobin depending on the evidence cited.

Choosing Wisely Recommendation: Don't test for myoglobin or CK-MB in the diagnosis of acute myocardial infarction (AMI). Instead, use troponin I or T.

Source:

http://www.choosingwisely.org/clinician-lists/american-society-clinical-pathology-myoglobin-to-diagnose-acute-myocardial-infarction/

Eggers KM, Oldgren J, Nordenskjöld A, Lindahl B. Diagnostic value of serial measurement of cardiac markers in patients with chest pain: limited value of adding myoglobin to troponin I for exclusion of myocardial infarction. Am Heart J. 2004 Oct;148(4):574-81.

50. A 56 yo male with Type II Diabetes Mellitus presents to your clinic for follow up of his testosterone labs. He had the test ordered because of his complaints of fatigue and decreased interest in sex. His

value is 435 ng/dL (normal range 280 ng/dL-1100 ng/dL). Should this patient receive testosterone therapy?

a. Yes, the patient's testosterone is at the lower range of normal and his symptoms are consistent with deficiency.

b. No, the patient's testosterone is within the normal range.

c. No, the patient has a low normal testosterone but needs to try other medications to raise this level first.

d. Yes, the patient's testosterone is normal but treatment is still indicated given the symptoms.

Answer B

The American Society for Clinical Pathology recommends against providing testosterone therapy unless patients have a documented low value of testosterone per laboratory values. This is per guidelines produced by the Endocrine Society Task Force, which state that the diagnosis of androgen deficiency is made after documentation of androgen deficiency along with concurrent symptoms of deficiency. This patient's testosterone value is within normal range.

Choosing Wisely Recommendation: Don't prescribe testosterone therapy unless there is laboratory evidence of testosterone deficiency.

Sources:

http://www.choosingwisely.org/clinician-lists/american-society-clinical-pathology-testosterone-therapy/

Bhasin D, Cunningham GF, Hayes FJ, Matsumoto AM, Snyder PJ, Swerdloff RS, Montori VM; Task Force, Endocrine Society. Testosterone therapy in adult men with androgen deficiency syndromes: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab. 2010 Jun;95(6):2536-59.

51. A 56 year old male patient comes into your clinic complaining of intermittent pain in his calves when he walks. You find his ABIs to be .6 on the L and .6 on the R. When is it appropriate to perform carotid ultrasound on a patient?
    a. One time in males 65-75 who have smoked at any point in their lives.
    b. A patient complaining of intermittent claudication with known lower extremity vascular disease.
    c. One time in males AND females 65-75 who have smoked at any point in their lives.
    d. In all patients, one time after the age of 60.
    e. None of the above.

Answer: B

The Society for Vascular Surgery argues that carotid duplex screening in asymptomatic patients should be limited to those situations in which patients have other risk factors predisposing to carotid artery

disease. Some studies suggest that the prevalence of carotid artery disease, defined as >60% stenosis, is present in 20% of patients with clinically significant peripheral vascular disease. As such, PVD is an indication for carotid duplex screening per the Societies updated recommendations in 2011. Other risk factors for carotid artery disease include being over the age of 65 with history of coronary artery disease, smoking or hypercholesterolemia.

Choosing Wisely Recommendation: Avoid use of ultrasound for routine surveillance of carotid arteries in the asymptomatic healthy population at any time.

Sources:

http://www.choosingwisely.org/clinician-lists/society-vascular-surgery-ultrasound-for-routine-surveillance-of-carotid-arteries/

Ricotta JJ, Aburahma A, Ascher E, Eskandari M, Faries P, Lal BK; Society for Vascular Surgery. Updated Society for Vascular Surgery guidelines for management of extracranial carotid disease. J Vasc Surg. 2011 Sep;54(3):e1-31.

52. A 60 yo female patient complains of intermittent pain in her calves and thighs. She is able to perform her daily functions but she complains of bilateral pain in her calves after walking a block. Patient past medical history is significant for dual medication controlled hypertension and a 30 pack year smoking history. On exam you find diminished dorsalis pedis and posterior tibial pulses bilaterally. ABI is .72 on the left and .78 on the right. Which of the following are the most appropriate next steps in management?
    a. Trial of smoking cessation, diet and exercise.
    b. Angiogram
    c. Surgical bypass
    d. Angioplasty
    e. Her history and physical are normal. No intervention needed.

Answer A

The Society for Vascular Surgery recommends against using surgery or endovascular interventions as first line treatments for most cases of intermittent claudication. In this patient, a trial of smoking cessation and diet and exercise can help improve the claudication and should be attempted as the patient's symptoms are not preventing her from performing her daily functions. Further, she does not have evidence of critical limb ischemia on her exam or per her ABIs.

Choosing Wisely Recommendation: Don't use interventions (including surgical bypass, angiogram, angioplasty or stent) as a first line of treatment for most patients with intermittent claudication.

Sources:

http://www.choosingwisely.org/clinician-lists/society-vascular-surgery-interventions-as-first-line-treatment-for-intermittent-claudication/

Norgren L, Hiatt WR, Dormandy JA, Nehler MR, Harris KA, Fowkes FG; TASC II Working Group. Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II). J Vasc Surg. 2007 Jan;45 Suppl S:S5-67.

53. A 29 yo female patient is diagnosed with idiopathic thrombocytopenic purpura. She has no history of excessive bleeding, her physical exam is normal and she has a platelet count of 33000. Which of the following is the most appropriate therapy for her?
    a. Continue to monitor signs and symptoms of thrombocytopenia.
    b. Short dose of IV corticosteroids
    c. Longer dose of IV corticosteroids
    d. IVIG
    e. Splenectomy

Answer A

The American Society of Hematology recommends patients with ITP not be treated unless they have bleeding or a platelet count of less than 30000 in adults. This patient is asymptomatic with a platelet count more than 30000, which means she does not have to be treated. Per the American Society of Hematology recommendations on evaluation of ITP, HCV, HIV and other investigations of abnormalities in blood counts including peripheral smear must be performed before the diagnosis of ITP can be made.

Choosing Wisely Recommendation: Don't treat patients with immune thrombocytopenic purpura (ITP) in the absence of bleeding or a very low platelet count.

Sources: http://www.choosingwisely.org/clinician-lists/american-society-hematology-treating-immune-thrombocytopenic-purpura/

Neunert C, Lim W, Crowther M, Cohen A, Solberg L Jr., Crowther MA; American Society of Hematology. The American Society of Hematology 2011 evidence-based practice guideline for immune thrombocytopenia. Blood. 2011 Apr 21;117(16):4190–207.

54. A 56 yo male presents to your clinic for his yearly f/u. He tells you that 9 months ago, he was admitted to the hospital for a PE. He received heparin in the hospital and then was given warfarin for 6 months. On his labs, his platelet count is 98000 from 175000 three months ago. His 4T score is 2 indicating low pretest probability of Heparin Induced Thrombocytopenia (HIT). How should you manage this patient?
    a. Order Anti-PF4 Ab labs to r/o HIT
    b. Order Anti-PF4 Ab and Serotonin Release Assay to r/o HIT
    c. Order Anti-PF4 Ab and Serotonin Release Assay to r/o HIT and begin bivalirudin
    d. None of the above

Answer D

The American Society of Hematology recommends against performing labs to assess for HIT or beginning anticoagulation in patients with low pre-test probability per the "4-T's" score. Per the American Society of Hematology, "the "4-T's" score uses the timing and degree of thrombocytopenia, the presence or

absence of thrombosis, and the existence of other causes of thrombocytopenia to assess the pre-test probability of HIT." This patient has a score of 2, which indicates low pretest probability of hit. As such, labs and anticoagulation are not warranted.

Choosing Wisely Recommendation: Don't test or treat for suspected heparin-induced thrombocytopenia (HIT) in patients with a low pre-test probability of HIT.

Sources:

http://www.choosingwisely.org/clinician-lists/american-society-hematology-testing-treating-suspected-heparin-induced-thrombocytopenia/

Watson H, Davidson S, Keeling D. Guidelines on the diagnosis and management of heparin-induced thrombocytopenia: second edition. Br J Haematol. 2012;159(5):528–40.

55. You are following a patient with a diagnosis of early stage CLL (Stage A without active disease) per his oncologist. What imaging is appropriate for monitoring this patient?
    a. CT Head and Neck
    b. CT Head and Neck, CT Chest
    c. CT Head and Neck, CT Chest, CT abdomen
    d. CT Head and Neck, CT Chest, CT abdomen, CT pelvis
    e. None of the above

Answer E

Per the American Society of Hematology, patients with asymptomatic and early stage CLL do not require baseline or routine surveillance with CT. This is per recommendations from the ESMO practice guidelines regarding CLL, which recommend against the use of CTs as routine practice outside of clinical trials. Instead clinical staging and monitoring is recommended in early stages as CT does not increase survival and leads to increased cost and exposure to radiation for patients.

Choosing Wisely Recommendation: Don't perform baseline or routine surveillance computed tomography (CT) scans in patients with asymptomatic, early-stage chronic lymphocytic leukemia (CLL).

Sources:

http://www.choosingwisely.org/clinician-lists/american-society-hematology-baseline-or-routine-surveillance-ct-scans-for-asymptomatic-early-stage-chronic-lymphocytic-leukemia/

Eichhorst B, Hallek M, Dreyling M, Group EGW. Chronic lymphocytic leukaemia: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2010 May;21 Suppl 5:v162–4.

56. A 28 yo female patient with history of sickle cell anemia presents with severe lower back pain. She has been admitted "many times" since she was a young child because of sickle cell pain crisis and she feels this episode is similar to those. Her Hgb is measured at 9.5 on admission. Over the course of a day, she is given 2.5 L of fluids and pain control is obtained with opiods. Her hemoglobin is now 8.0. What is the best next step?

a. Transfuse 1 unit pRBCs.
b. Transfuse to hemoglobin of 10.
c. No transfusion necessary. Continue to treat patient supportively.
d. Perform hemoglobin electrophoresis.
e. None of the above

Answer C

The American Society of Hematology (ASH) recommends against routinely transfusing patient with sickle cell disease for uncomplicated pain crisis without an appropriate clinical indication. This patient has a hemoglobin >7. Further, her 1.5 g/dL fall in hemoglobin can be adequately explained with her receiving 2.5 L of fluid. The ASH argues that patients that receive unnecessary transfusions experience unwarranted increases in risk of alloimmunization to minor blood group antigens and have a higher risk of iron overload.

Choosing Wisely Recommendation: Don't routinely transfuse patients with sickle cell disease (SCD) for chronic anemia or uncomplicated pain crisis without an appropriate clinical indication.

Source:

http://www.choosingwisely.org/clinician-lists/american-society-hematology-routine-transfusions-for-sickle-cell-disease-or-chronic-anemia/

Blood transfusion guideline. Dutch Institute for Healthcare Improvement CBO; 2011. 402 p.

57. On day 5 following sequential washout procedures of his spine for epidural abscesses in the lumbar spine, a 53 year old male IVDU is found to have a DVT per lower extremity duplex ultrasound. This is the patient's first DVT and his mobility has been limited as he has been recovering post-operatively, though he is expected to regain full function. The surgical team gives the go ahead for starting therapeutic anticoagulation. How long should this patient be treated with therapeutic anticoagulation for?
    a. 6 months
    b. 9 months
    c. 1 year
    d. 3 months
    e. 4 months

Answer: D

The American Society of Hematology recommends against anticoagulation for more than three months in a patient with a first time venous thromboembolism, which has occurred in the setting of a major transient risk factor. Such transient risk factors include surgery, trauma or an intravascular catheter. Per the ASH, these patients are at low risk for recurrence of VTE once the risk factor has been resolved. This patient has developed a DVT following surgery and likely immobility so his therapy should be no longer than 3 months.

Choosing Wisely Recommendation: Don't treat with an anticoagulant for more than three months in a patient with a first venous thromboembolism (VTE) occurring in the setting of a major transient risk factor.

Incorrect Choices

a-c, e. Anticoagulation for longer than 3 months is not necessary in first time VTE.

Sources:

http://www.choosingwisely.org/clinician-lists/american-society-hematology-anticoagulants-for-more-than-three-months-after-first-vte/

Kearon C, Akl EA, Comerota AJ, Prandoni P, Bounameaux H, Goldhaber SZ, Nelson ME, Wells PS, Gould MK, Dentali F, Crowther M, Kahn SR; American College of Chest Physicians. Antithrombotic therapy for VTE disease: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines.[Erratum appears in Chest. 2012 Dec;142(6):1698-1704]. Chest. 2012 Feb;141(2 Suppl):e419S–94S.

58. A 22 yo patient presents to his university Urgent Care complaining of sinus pain and runny nose for 3 days. Temperature is 100.6 and he has tenderness to palpation over the maxillary sinus. Otherwise, his physical exam is normal. He states he is able to follow up with his primary care doctor appropriately. Which is the best next step in management?
    a. Prescribe Amoxicillin/Clavulanate for the patient
    b. Prescribe Doxycycline
    c. Prescribe Levofloxacin
    d. Supportive therapy for 7 days and follow up if no change or worsening of symptoms.

Answer D

The American College of Emergency Physicians recommends avoiding prescribing antibiotics in the ED for uncomplicated sinusitis. Patients with uncomplicated sinusitis generally are infected with viral organisms. Antibiotics are indicated if patients worsen or stay the same symptomatically after 7 days of supportive therapy. Antibiotics are also indicated for those patients who cannot follow up with their primary care providers. Complicated sinusitis (high persistent fevers >102°F, periorbital edema, inflammation, or erythema, cranial nerve palsies; abnormal extraocular movements, proptosis, vision changes, severe headache, altered mental status, or meningeal signs) requires referral.

Choosing Wisely Recommendation: Avoid prescribing antibiotics in the emergency department for uncomplicated sinusitis.

Incorrect choices

a-c. This patient warrants antibiotic therapy for his uncomplicated sinusitis only if he cannot follow up with a primary care provider in 7 days. Otherwise, he warrants supportive therapy to see if his symptoms improve.

Sources:

http://www.choosingwisely.org/clinician-lists/acep-antibiotics-in-the-ed-for-sinusitis/

Sinusitis and antibiotics. Lancet Infect Dis. 2012 May;12(5):355.

59. A 44 yo patient with PMH significant for two episodes of ureterolithiasis over the past 5 years presents to the ED with sxs of renal colic. The patient states that the pain is similar to those he experienced during his prior episodes of ureterolithiasis. Which of the following would make you more likely to order a CT abdomen and pelvis for this patient?
    a. Pt presents with fever.
    b. Pt age less than 50.
    c. History of recurrent uncomplicated kidney stones.
    d. Nausea per history.

Answer A

The American College of Emergency Physicians recommends avoiding ordering CT abdomen and pelvis in young otherwise healthy ED patients with history of kidney stones or ureterolithiasis when these patients present with uncomplicated renal colic. Of the choices above, fever is the only one that is a manifestation of complicated renal colic and requires more extensive workup. Other manifestations of complicated renal colic that may require advanced imaging include prolonged or uncontrolled symptoms with or without persistent hydronephrosis or signs and symptoms of an obstructing urinary tract infection.

Choosing Wisely Recommendation: Avoid ordering CT of the abdomen and pelvis in young otherwise healthy emergency department (ED) patients (age <50) with known histories of kidney stones, or ureterolithiasis, presenting with symptoms consistent with uncomplicated renal colic.

Incorrect choices:

b. Younger age is more associated with uncomplicated kidney stones.

c. A history of uncomplicated kidney stones is more associated with spontaneous passage of a new uncomplicated stone.

d. Nausea is a symptoms of uncomplicated renal stones and does not require advanced imaging.

Source:

http://www.choosingwisely.org/clinician-lists/acep-ct-of-abdomen-and-pelvis-for-ed-patients-under-50/

Ha M, MacDonald RD. Impact of CT scan in patients with first episode of suspected nephrolithiasis. J Emerg Med. 2004 Oct;27(3):225-31.

60. A healthy 46 yo male patient arrives in your ED complaining of lower back pain. He says this pain occurred suddenly yesterday after he lifted a box. The patient's vitals and physical,

including neuro and spinal exam, are completely normal. Should this patient receive imaging of his lumbar spine?

a. Yes, there is the possibility of fracture.
b. Yes, there is the possibility of herniated disc.
c. No, this patient does not have signs of neurologic deficit or a serious underlying condition.

Answer C:

The American College of Emergency Physicians argues that lumbar spine imaging should be avoided in patients with non-traumatic back injuries in the ED who do not present with progressive neurologic deficits or a serious underlying condition. Such conditions include bony metastasis, epidural abscess or cauda equine syndrome. The ACEP argues that the majority of cases of lower back pain presenting to the ED are due to muscle strain or inflammation and imaging does not improve time to recovery.

Choosing Wisely Recommendation: Avoid lumbar spine imaging in the emergency department for adults with non-traumatic back pain unless the patient has severe or progressive neurologic deficits or is suspected of having a serious underlying condition (such as vertebral infection, cauda equina syndrome, or cancer with bony metastasis).

Incorrect Choices:

A. The patient lacks point tenderness on exam and a history that would be consistent with bony fracture.
B. The patient does not have progressive neurologic deficits that would indicate that herniated requiring intervention has occurred.

Sources:

http://www.choosingwisely.org/clinician-lists/acep-lumbar-spine-imaging-in-the-ed/

Tracey NG, Martin JB, McKinstry CS, Matthew BM. Guidelines for lumbar spine radiography in acute low back pain: effect of implementation in an accident and emergency department. Ulster Med J. 1994 Apr;63(1):12-17.

61. A 46 yo female patient presents to the ED with complaints of 4 episodes of hemoptysis over the past 2 days. She does not complain of any other symptoms and has had a PE or DVT in the past. Her past medical history is significant for Diabetes Mellitus and Hypertension. She has a T of 101.4 and HR of 110. Her D Dimer is found to be negative. Should this patient receive a CT pulmonary angiography scan?
    a. No. Her Wells Criteria score is 2.5 and her D Dimer is negative.
    b. Yes. Her Well Criteria score is 2.5 so her D Dimer should be ignored.
    c. Neither of the above.

Answer A

The American College of Emergency Physicians recommends against performing CT pulmonary angiography in ED patients with a low pretest probability of a PE and a negative d-dimer. This patient is considered to be "PE Unlikely" given her Well Criteria score of 2.5, which indicates she has a low pre-test probability for PE. Further, her negative D Dimer eliminates the need for pulmonary imaging for PE.

Modified Wells criteria: clinical assessment for pulmonary embolism

Clinical symptoms of DVT (leg swelling, pain with palpation)	3.0
Other diagnosis less likely than pulmonary embolism	3.0
Heart rate >100	1.5
Immobilization (≥3 days) or surgery in the previous four weeks	1.5
Previous DVT/PE	1.5
Hemoptysis	1.0
Malignancy	1.0
Probability	**Score**
Traditional clinical probability assessment	
High	>6.0
Moderate	2.0 to 6.0
Low	<2.0
Simplified clinical probability assessment*	
PE likely	>4.0
PE unlikely	≤4.0

Data from van Belle, A, et al. JAMA 2006; 295:172.

Choosing Wisely Recommendation: Avoid CT pulmonary angiography in emergency department patients with a low-pretest probability of pulmonary embolism and either a negative Pulmonary Embolism Rule-Out Criteria (PERC) or a negative D-dimer.

Incorrect Choices:

A. The patient has a Wells Score less than 4 and as such a PE is unlikely.

C. PE is unlikely in this patient given the Wells score of 2.5.

Source:

http://www.choosingwisely.org/clinician-lists/acep-ct-pulmonary-angiography-in-ed-patients/

Kline JA, Courtney DM, Kabrhel C, Moore CL, Smithline HA, Plewa MC, Richman PB, O'Neil BJ, Nordenholz K. Prospective multicenter evaluation of the pulmonary embolism rule-out criteria. J Thromb Haemost. 2008 May;6(5):772-80.

62. A 60 yo male patient comes to ED with chief complaint of fainting. He tells you, he stood up after having sat watching television for a few hours and become dizzy and fell to his knees. Pt denies loss of consciousness, any trauma to his head, headache, garbled speech, weakness or confusion. Vitals and physical exam are normal. Is a CT Head appropriate in this patient?
    a. Yes. This patient presents with near syncope, which is a risk factor for brain injury or stroke.
    b. No. This patient's history and physical are unremarkable for head trauma or findings indicating stroke.
    c. Neither of the above

Answer B

The American College of Emergency Physicians argues against the use of CT Head in asymptomatic adult patients in the ED with syncope, insignificant trauma and a normal neuro eval. This patient has experienced near syncope, with causes unknown pending workup. This patient does not complain of head trauma or findings of stroke though. Further, neuro exam is completely normal. Thus, a CT scan of the head is not appropriate.

Choosing Wisely Recommendation: Avoid CT of the head in asymptomatic adult patients in the emergency department with syncope, insignificant trauma and a normal neurological evaluation.

Incorrect Choices:

A. Syncope in and of itself is not grounds for CT head if the patient is asymptomatic with insignificant trauma and a normal neurologic examination.

C. The patient does not need a CT head.

Sources:

http://www.choosingwisely.org/clinician-lists/acep-avoid-head-ct-for-asymptomatic-adults-with-syncope/

Giglio P, Bednarczyk EM, Weiss K, Bakshi R. Syncope and head CT scans in the emergency department. Emerg Radiol. 2005 Dec;12(1-2):44-6.

63. You are following a 68 yo female patient the day after she presented to the ED with aphasia, and right-sided weakness and was diagnosed with a L MCA ischemic stroke. She has had no new significant findings on physical exam over the past 24 hours apart from residual aphasia and right sided weakness. How should you approach beginning seizure prophylaxis for this patient?
    a. Prescribe keppra for 7 days.
    b. Perform an EEG and then prescribe keppra for 7 days.
    c. Prescribe phenytoin for 7 days

d. Perform an EEG and then prescribe phenytoin for 7 days.
e. None of the above

Answer E

The American Association of Neurological Surgeons and Congress of Neurological Surgeons recommend against routine use of seizure prophylaxis following ischemic stroke in patients who do not suffer seizures. This is per the lack of evidence that this actually decreases seizure occurrence. This patient does not have evidence of seizure following her stroke so has no reason to receive seizure treatment or prophylaxis.

Choosing Wisely Recommendation:

Don't routinely use seizure prophylaxis in patients following ischemic stroke.

Incorrect Choices:

A-D. Seizure prophylaxis is unnecessary in patients who present with strokes and no new onset seizures.

Sources:

http://www.choosingwisely.org/clinician-lists/american-association-neurological-surgeons-seizure-prophylaxis-following-ischemic-stroke/

64. Kwan J, Wood E. Antiepileptic drugs for the primary and secondary prevention of seizures after stroke. Cochrane Database of Systematic Reviews 2010, Issue 1. Art. No.: CD005398. DOI: 10.1002/14651858.CD005398.pub2.

A 10 year old patient is brought in by his parents to the Emergency Department. He presents with pain in right lower quadrant and rebound tenderness. You suspect appendicitis. Which of the following is the best imaging modality to consider first to confirm your suspicion?

a. MRI
b. CT with Contrast
c. CT without Contrast
d. Ultrasound
e. None of the above

Answer D

The American College of Radiology (ACR) recommends that ultrasound be considered as an option before CT in the diagnosis of appendicitis in pediatrics patients. The ACR argues that skilled ultrasound technologists can have high accuracy in diagnosing appendicitis and CT is always an option if the exam is equivocal. This approach reduces cost and radiation risks.

Choosing Wisely Recommendation: Don't do computed tomography (CT) for the evaluation of suspected appendicitis in children until after ultrasound has been considered as an option.

Incorrect Choices:

A. MRI has been used as a successful modality to diagnose appendicitis but its cost prohibitive from it being considered before ultrasound sequentially.

B, C. Ultrasound is cheaper and reduces radiation exposure. Hence, it is preferred as the first step imaging modality. As an aside, many appendicitis imaging protocols avoid the use of contrast as it can often be diagnosed without it.

E. Ultrasound is the correct choice.

Sources:

http://www.choosingwisely.org/clinician-lists/american-college-radiology-ct-to-evaluate-appendicitis-in-children/

Krishnamoorthi R, et al. Effectiveness of a staged US and CT protocol for the diagnosis of pediatric appendicitis: reducing radiation exposure in the age of ALARA. Radiology 2011;259:231-239.

65. A 36 year old male patient presents to your clinic complaining of low back pain. He says the pain happened after he was lifting a box at his job and has been dull for the last 5 days and worsens with exacerbation. His history and physical is otherwise normal. How should you image this patient?

A. MRI

B. X Ray

C. CT

D. This patient does not warrant imaging

Answer D

The American Academy of Family Physicians recommends against imaging for low back pain within the first six weeks unless there are red flags. Red flags include neurological symptoms such as foot drop, saddle anesthesia, progressive weakness or loss of bowel and bladder control. Other red flags include age >55, or suspicion for osteomyelitis. If back pain is unwarranted after 6 weeks, an x ray is warranted with the use of further imaging dependent on whether the x ray was diagnostic or not.

Choosing Wisely Recommendation: Don't do imaging for low back pain within the first six weeks, unless red flags are present.

Incorrect Choices

A. Indications for MRI include history of cancer with new onset low back pain, diagnostic workup of possible vertebral infection, cauda equina syndrome or progressive motor weakness

B, C. This patient does not have any alarm symptoms as of yet and does not warrant radiography as a result.

Sources:

http://annals.org/article.aspx?articleid=736814

http://www.choosingwisely.org/clinician-lists/american-academy-family-physicians-imaging-low-back-pain/

66. A 67 year old male patient comes into your office asking about a DEXA scan screening for osteoporosis. He says his wife received one and he wants to know if he should as well. He does not have any risk factors for osteoporosis. What is the appropriate response?

a. Yes, you are over age 65 and as such warrant a DEXA scan.

b. Yes, you are over age 60 and as such warrant a DEXA scan.

c. No, you are under age 70 and as such do warrant a DEXA scan.

d. No, men are not supposed to be screened for osteoporosis

Answer C

The American Academy of Family Physicians recommends that practitioners not use DEXA scans to screen for osteoporosis in women under 65 and men under 70 who do not have risk factors for osteoporosis. Key risk factors not including age and gender include family history, prior history of broken bones, alcohol and ethnicity (Asians and Caucasians are at higher risk). The male patient noted above is 67 and as such does not warrant screening.

Choosing Wisely Recommendation: Don't use dual-energy x-ray absorptiometry (DEXA) screening for osteoporosis in women younger than 65 or men younger than 70 with no risk factors.

Incorrect Choices:

A and B. 65 is the age at which DEXA screening is recommended for woman.

D. Men are recommended to have DEXA scans after age 70.

Sources:

http://www.choosingwisely.org/clinician-lists/american-academy-family-physicians-dexa-screening-for-osteoporosis/

67. A 91 year old man is admitted with a complicated urinary tract infection. He is coming from a skilled nursing facility and has advanced dementia. On admission, the patient is noted to be an elderly frail gentleman who does not speak but grunts. The patient has a history of agitation but is currently calm in bed. After a few days of minimal PO intake with trays, your team ponders methods for assisting with feeding. Which of the following methods would you try first?

a. Oral Assisted Feeding

b. Percutaneous Tube Feeding

Answer A

The American Geriatrics Society argues that oral assisted feeding should be offered to patients with severe dementia before percutaneous feedings tubes. This is based off studies that show that mortality, aspiration pneumonia and functional status outcomes are all similar between oral assisted feeding and percutaneous tube feeding. There is evidence though that tube-feeding has a correlation with use of physical and chemical restraints and pressure ulcers. As such, oral assisted feeding, by hand, is the superior first choice of the two types of feeding.

Choosing Wisely Recommendation: Don't recommend percutaneous feeding tubes in patients with advanced dementia; instead offer oral assisted feeding.

Sources:

http://www.choosingwisely.org/clinician-lists/american-geriatrics-society-percutaneous-feeding-tubes-in-patients-with-dementia/

68. Hanson LC, Carey TS, Caprio AJ, Lee TJ, Ersek M, Garrett J, Jackman A, Gilliam R, Wessell K, Mitchell SL. Improving decision-making for feeding options in advanced dementia: A randomized, controlled trial. J Am Geriatr Soc. [Internet]. 2011 Nov;59(11):2009–2016.

A 70 year old patient comes to your clinic for management of his Type II diabetes. He is currently on Metformin and his previous four A1C's have ranged from 7.0-7.4. Otherwise, the patient does not have any medical problems. How should you manage his diabetes?

A. Add one more oral medication with a goal of Hgb <6.5

B. Add one more oral medication with a goal of Hgb <7.0

C. The patient will likely need insulin.

D. The patient's A1C's are appropriate for his age.

E. None of the above

Answer D

The American Geriatrics Society (AGS) notes that 7.0-7.5% are appropriate A1C targets for healthy older adults with longer life expectancy. This patient has minimal other medical problems and as such, falls into this category. In older adults, evidence shows that tight glycemic control produces higher rates of hypoglycemia and is associated with increased mortality. The benefits of tight glycemic control are predominately controlling microvascular complications, which often take years to develop. The AGS argues further that physicians should try to avoid using medications other than metformin in older aged diabetics. Metformin has been shown to be an effective all mortality reducer and cardiovascular complications reducer in patients with atherosclerosis and diabetes of all ages. The recommendations

for A1C targets for different ages in people with diabetes are as follows: 7.0 – 7.5% in healthy older adults with long life expectancy, 7.5 – 8.0% in those with moderate comorbidity and a life expectancy <10 years, and 8.0 – 9.0% in those with multiple morbidities and shorter life expectancy.

Choosing Wisely Recommendation: Avoid using medications other than metformin to achieve hemoglobin A1c<7.5% in most older adults; moderate control is generally better.

Incorrect Choices:

A and B. As mentioned above, the goal range for this patients A1c is 7.0-7.5. Adding diabetic agents to reduce his A1C puts the patient at increased mortality and hypoglycemia risk.

C and E. The patient is within his goal range for A1C, 7.0-7.5. As such, medication additions are inappropriate.

Sources:

http://www.choosingwisely.org/clinician-lists/american-geriatrics-society-medication-to-control-type-2-diabetes/

Montori VM, Fernández-Balsells M. Glycemic control in type 2 diabetes: Time for an evidence-based about-face? Ann Intern Med [Internet]. 2009 Jun 2;150(11):803-8. Erratum in: Ann Intern Med. 2009 Jul 21;151(2):144. PMID: 19380837

69. A 76 year old woman with a history of a L2 compression fracture 1 week ago, diagnosed by x ray, is admitted to the hospital for pain control. She was discharged from the hospital to SNF 1 week ago with seven days of lorazepam for insomnia and Tylenol for pain control. She is also on metformin and aspirin. On exam, you note that she is alert and oriented times one as compared with three last week. She is also unable to perform serial 7 subtractions and often requires reorienting during history taking. Her skilled nursing facility reports that she was having trouble sleeping at night but often seemed sedated during days. You note that the patient has become delirious over the last week. Which of the following medications mostly likely contributed to this patient becoming delirious?

a. Metformin

b. Tylenol

c. Lorazepam

d. Low dose Aspirin

Answer C

Benzodiazepines such as lorazepam are notable for their ability to diminish immediate and delayed memory and psychomotor performance in all patients, but older adults more than normal. Further, benzodiazepines are listed on Beers Criteria as medications to avoid in older adults because they increase the risk of motor vehicle accidents, falls, hip fractures and all-cause mortality rates. The American Geriatric Society also delineates that benzodiazepines or other sedative-hypnotics should not

be used as first choice for insomnia, agitation or delirium. Instead, benzodiazepine use should be reserved for alcohol withdrawal or generalized anxiety disorder unresponsive to other therapies.

Choosing Wisely Recommendation: Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium.

Incorrect Choices

A. Metformin is not associated with delirium has demonstrated mortality benefit in patients with diabetes with appropriate indications for use, regardless of age.

B and D. Tylenol and low dose aspirin are not associated with delirium.

Sources:

http://www.choosingwisely.org/clinician-lists/american-geriatrics-society-benzodiazepines-sedative-hypnotics-for-insomnia-in-older-adults/

The American Geriatrics Society 2012 Beers Criteria Update Expert Panel. American Geriatrics Society Updated Beers Criteria for potentially inappropriate medication use in older adults. J Am Geriatr Soc. 2012 Apr;60(4):616-31.

70. A 17 year old patient comes to your clinic for a follow up visit. He report that when he exercises he begins to wheeze and feel short of breath. Vitals are normal and on physical exam, you here diffuse wheezes and the patient tells you he just came from soccer practice. You suspect he patient is suffering from exercise-induced asthma. Would you obtain spirometry before treating the patient?

a. No. The patient does not need spirometry to have a diagnosis of asthma.

b. Yes. The patient needs spirometry to determine asthma medication dosing.

c. No. The patient does need spirometry but this can be performed after he receives asthma medications.

d. Yes, Spirometry is essential to asthma diagnosis.

Answer D

The American Academy of Allergy, Asthma and Immunology recommends patients receive spirometry before being diagnosed with and managed for asthma. This is per guidelines for the diagnosis and management of asthma by the National Asthma Education and Prevention Expert Panel. Symptoms of asthma are often non-specific and as such, history and physical exam may over or underestimate asthma control. This could lead to misdiagnosis, delayed treatment and increased cost of care.

Choosing Wisely Recommendation

Don't diagnose or manage asthma without spirometry

Sources:

http://www.choosingwisely.org/clinician-lists/american-academy-allergy-asthma-immunology-spirometry-for-asthma-diagnosis-and-management/

National Asthma Education and Prevention Expert Panel Report 3: Guidelines for the diagnosis and Management of Asthma. NIH Publication Number 08–5846 October 2007.

71. A 60 year old male patient comes in with sudden hearing loss. History and exam is not significant for findings other than bilateral sensorineural hearing loss. You presumptively diagnose the patient with idiopathic sudden sensorineural hearing loss based off of audiometry confirming a 30-dB hearing loss at three consecutive frequencies. Is a CT head non contrast appropriate?

a. No. We need to order an MRI first.
b. No. We need routine laboratory tests first.
c. No. CT head/brain is not recommended in patients with presumptive idiopathic sudden sensorineural hearing loss.
d. Yes. A neurological lesion may be identified with the CT head.

Answer C

The American Academy of Otolarynology recommends against ordering CT scans of the head for patients with sudden hearing loss. This is based off of recommendations in the clinical practice guidelines for management of sudden hearing loss. Idiopathic sudden hearing loss (ISSNHL) is a diagnosis that is presumed when audiometry confirms a 30-dB hearing loss at 3 consecutive frequencies as mentioned above and when now underlying condition for hearing loss can be determined by history and physical. MRI or auditory brainstem response testing is considered appropriate in workup of ISSNHL to rule out retrocochlear pathology. CT scan on the other hand offer little useful information and exposes patients to radiation. Indications for CT scan of the head in a patient with sudden hearing loss include focal neurologic findings, a history of trauma or chronic ear disease.

Choosing Wisely Recommendation

Don't order computed tomography scan of the head/brain for sudden hearing loss.

Incorrect choices

a. Though CT head is not appropriate in this case, MRI would be to assess for retrocochlear pathology.
b. The American Academy of Otalarynology recommends against performing routine laboratory tests when a presumptive diagnosis of ISSNHL can be made.

d. CT head does not contribute to evaluation of ISSNHL.

Sources

http://www.choosingwisely.org/clinician-lists/american-academy-otolaryngology-head-and-neck-surgery-ct-scans-of-head-brain-for-sudden-hearing-loss/

Stachler RJ, Chandrasekhar SS, Archer SM, Rosenfeld RM, Schwartz SR, Barrs DM, Brown SR, Fife TD , Ford P, Ganiats TG, Hollingsworth DB, Lewandowski CA, Montano JJ, Saunders JE, Tucci DL, Valente M, Warren BE, Yaremchuk KL, Robertson PJ. Clinical practice guideline: Sudden hearing loss. Otolaryngol Head Neck Surg [Internet]. 2012 Mar [cited 2012 Oct 18];146(3 Suppl):S1-35.

72. A 42 year old male truck driver presents to the ED with erythema and edema of the left lower extremity. Duplex ultrasound demonstrates a deep vein thrombus in the left popliteal vein. When should you repeat an ultrasound?

a. 3 days
b. 7 days
c. When the patient has improvement in clinical symptoms.
d. Only if the patient condition worsens.

Answer D

The Society for Vascular Medicine recommends against reimaging DVT in the absence of a clinical change. This includes imaging to check for "response" to therapy. This is based off of recommendations from the American College of Chest Physicians.

Choosing Wisely Recommendation: Don't Reimage DVT in the absence of a clinical change.

Incorrect Choices

a, b, c. Reimaging a DVT is only appropriate if the clinical condition of the patient is worsening.

Sources:

http://www.choosingwisely.org/clinician-lists/society-vascular-medicine-reimage-deep-vein-thrombosis/

Bates SM, Jaeschke R, Stevens SM, Goodacre S, Wells PS, Stevenson MD, Kearon C, Schunemann HJ, Crowther M, Pauker SG, Makdissi R, Guyatt GH. Diagnosis of DVT Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines Practice Guidelines. Chest. [Internet]. 2012 Feb [cited 2012 Oct 18];141(2)(Suppl):e351S–e418S.

73. A 26 year old Caucasian woman comes into your clinic in Alaska. She has been a resident of Alaska her entire life. She asks for your opinion on testing her vitamin D levels. She says she has heard that vitamin D deficiency is related to cancer and cardiovascular disease. Which of the following is the most appropriate response to this patient?

a. We should test for Vitamin D deficiency because of the distance we are from the equator.
b. You are likely Vitamin D deficient and should take OTC supplements to reduce your risk of cancer and cardiovascular disease.
c. There is not convincing evidence that Vitamin D supplementation reduces cardiovascular disease or cancer risk. As such, I don't think testing Vitamin D levels would be helpful.
d. You are likely Vitamin D deficient and should take high dose supplements to reduce your risk of cancer and cardiovascular disease.

Answer C

The American Society for Clinical Pathology argues that practitioners not perform screening for 25-OH-Vitamin D deficiency in asymptomatic patients. This is based off of evidence that Vitamin D supplementation does not prevent poor health outcomes in all but a few conditions. As such lab testing is appropriate only when a patient's symptoms point to a condition for which aggressive vitamin D therapy may be used (e.g. osteoporosis, osteomalacia, rickets, CKD, malabsorption, obese individuals).

Choosing Wisely Recommendation: Don't perform population based screening for 25-OH-Vitamin D deficiency.

Sources:

http://www.choosingwisely.org/clinician-lists/american-society-clinical-pathology-population-based-screening-for-vitamin-d-deficiency/

Sattar N, Welsh P, Panarelli M, Forouchi NG. Increasing requests for vitamin D measurement: Costly, confusing, and without credibility. Lancet [Internet]. 2012 Jan 14 [cited 2012 Oct 12];379:95-96.

74. A 26 year old female comes to your office for a new employment physical. On exam, you find that her medial mid foot is close the ground on both feet with and without weight bearing. You suspect she has symmetric flat feet. She does not complain of any symptoms but tells you she has been wearing high heels more than normal lately. What inserts should you recommend for this patient?

A. Asymptomatic patients do not require shoe inserts for symmetric flat feet.
B. The patient should be provided shoe inserts with more than normal arch support.
C. The patient should be provided shoe inserts with less than normal arch support.
D. None of the above

Answer A

The American Orthopaedic Foot & Ankle Society recommends avoiding shoe inserts for patient with symmetric flat feet without symptoms. Evidence demonstrating the efficacy of non-operative surgical techniques (e.g. custom orthotics) for flat feet primarily has improvement in pain and function as the positive outcomes. There is as of yet, no evidence that orthotics improve or prevent symptoms in asymptomatic patients.

Choosing Wisely Recommendation: Don't use shoe inserts for symmetric flat feet or high arches in patients without symptoms.

Incorrect Choices

B,C,D. There is no evidence that shoe inserts prevents or decreases symptoms in asymptomatic flatfeet patients.

Sources:

http://www.choosingwisely.org/clinician-lists/american-orthopaedic-foot-ankle-society-shoe-inserts-for-symmetric-flat-feet-or-high-arches/

Evans AM, Rome K. A Cochrane review of the evidence for non-surgical inter ventions for flexible pediatric flat feet. Eur J Phys Rehabil Med. 2011;47(1):69–89.

75. Which of the following groups should be transfused with O negative blood if they have appropriate indications during an emergency and do not have a blood type on file?

A. Trauma patients
B. Female patients
C. Female patients with child bearing potential
D. Elderly male patients

E. None of the above

Answer C

The American Association of Blood Banks recommends against transfusing O negative blood in emergencies except to people with O negative blood or women with child bearing potential. This is because there is generally a chronic short supply of O negative blood in hospitals across the country. Women with childbearing potential are an exception to this recommendation because such patients are potentially at harm of producing Rho antibodies if they are exposed to Rho positive blood. Otherwise, only O negative patients should receive O negative blood in the emergency situation described above.

Choosing Wisely Recommendation:

Don't transfuse O negative blood except to O negative patients and in emergencies for women of child bearing potential with unknown blood group.

Incorrect choices

A, B, D, E. Patient's without known blood types should receive O positive blood in the case of emergency unless they have appropriate indications for O negative blood as described above.

Sources

http://www.choosingwisely.org/clinician-lists/american-association-blood-banks-transfusing-o-negative-blood/

The Chief Medical Officer's National Blood Transfusion Committee (UK). The appropriate use of group O RhD negative red cells. Manchester (UK): National Health Service; 2008. 4 p.