Things We Do For No Reason

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Learning Objectives

- Discuss the fact that in medicine, we frequently order tests or give treatments that aren't supported by science or medical literature.
- Explain the importance of keeping current with medical science and of continuing to question established diagnostic and treatment criteria.
- Identify some methods of separating "traditional" medical practice from "best" practice.

- I have no conflicts of interest or financial concerns to disclose.

DOGMA

- a principle or set of principles laid down by an authority as incontrovertibly true (google.com)
- Synonyms- blind faith, invincible conviction, unquestioning belief, certainty
- Is there a place for “dogma” in medicine?

DOGMA

- My resident told me, and hers told her, and the resident before her and the attending before him all said…
- "Urban legend" is dangerous but rampant in the world and in medicine. Many of the things we do are for no reason, or at least not backed up by evidence, science, or literature.
- "We've always done it this way…"


The most dangerous
phrase in the language is
"we've always done it this way."

#TWDFNR

- “Evidence-based medicine is the best medicine.”

- -- Mike Sewell

SHOW ME THE MONEY!!!

Avoiding NSAIDS in fracture patients

- Orthopedics sometimes propagates this myth, and it came from studies on rat models.
- No statistically significant association between NSAID exposure and nonunion in humans has been identified, and metanalysis shows no increased risk of nonunion with NSAID exposure.
- NSAIDs decrease inflammation and pain and decreased opioid use, improve mobility, and hasten overall recovery.

- Dodwell ER, Latorre JG, Parisini E, Zwettler E, Chandra D, Mulpuri K, Snyder BNSAID exposure and risk of nonunion: a meta-analysis of case-control and cohort studies. Calcif Tissue Int. 2010;87(3):193

#TWDFNR

- Tony Breu, MD
- VA Boston Heathcare System
- Brown University
- Society of Hospital Medicine

#TWDFNR

- Journal of Hospital Medicine
- Choosing Wisely: Things We Do For No Reason
- Choosingwisely.org (ABIM)
- #medtwitter
- #TWDFNR

#TWDFNR

- TWDFNR has been presented at many places in many formats:
- Emory University
- Brown University
- Rutgers University
- University of Maryland
- Johns Hopkins (Delaware ACP State Chapter meeting)
- Virginia Commonwealth
- University of Oregon
- University of Texas - Southwestern
- LSUHS

FOBT in hospitalized patients

- Pt w history of alcohol abuse, cirrhosis, and grade II esophageal varices
- Admitted for treatment of alcohol withdrawal
- Reports dark-colored stools a week prior to admission
- Repeat hemoglobin is stable.

What should be done next?

FOBT in hospitalized patients

- The US Preventive Services Task Force and the American College of Gastroenterology recommend fecal occult blood testing (FOBT) as one method for colorectal cancer (CRC) **screening** in average risk populations.

- False Positive FOBT
  - ingested blood via extra-intestinal sources
  - intestinal mucosal inflammation
  - clinically insignificant GI blood loss due to medications (eg, aspirin, NSAIDs)
  - ingestion of meats, fruits, or vegetables (broccoli, cauliflower)

- False Negative FOBT
  - Slow or intermittent bleeds
  - Vitamin C

FOBT in hospitalized patients

- False positive results leave a quandary for GI consultants and result in unnecessary procedures and prolonged LOS.
- Clinical picture is a much better tool in an inpatient setting.
- FOBT really has NO PLACE in a hospital setting

U.S. Preventive Services Task Force. Screening for colorectal cancer: recommendation and rationale. Ann Intern Med. 2002;137:129-131.

Lieberman DA, Rex DK, Winawer SJ, Giardiello FM, Johnson DA, Levin TR. Guidelines for colonoscopy surveillance after screening and polypectomy: A consensus update by the US Multi-Society Task Force on Colorectal Cancer, Gastroenterology. 2012;143(3):844-857.

Recommendations

- FOBT should not be performed to diagnose UGIB.
- The best diagnostic tools are a good history, physical examination, and visual inspection of the stool.
- Deferring FOBT to the ambulatory setting may improve test performance characteristics.

Benji K. Mathews, MD, Temple Ratcliffe, MD, Raj Sehgal, MD, James M. Abraham, MD, Monash B, Fecal occult blood testing in hospitalized patients with upper gastrointestinal bleeding. *J. Hosp. Med* 2017;7;567-569. doi:10.12788/jhm.2773

Ammonia in Hepatic Encephalopathy

- Pt with known cirrhosis due to Hepatitis C and alcoholism
- Alteration in mentation
- No overt signs or symptoms of infection
- Exam normal except for somnolence, disorientation to space and time, asterixis, and ascites
- Lab normal except for an elevated BUN, low platelets

- What is the next step?

Ammonia in Hepatic Encephalopathy

- Ammonia levels in patients with CLD do **NOT** reliably diagnose HE.
- Sensitivity 47.2%
- Specificity 78.3%
- PPV 78.3%
- NPV 48.6%
- Overall Diagnostic Accuracy **59.3%**, a little better than a coin flip!

Gundling F, Zelihic E, Seidl H, et al. How to diagnose hepatic encephalopathy in the emergency department. Ann Hepatol. 2013;12:108-114

Ammonia in Hepatic Encephalopathy

- Following NH3 levels to determine resolution?
- Patients with HE sometimes have normal values.
- NH3 has never been shown to correlate with severity of HE.
- NH3 may still be elevated 48 hrs after normalization of neurologic status.
- Serial measurements of ammonia in patients with CLD are not useful. Improvement based on serial exams.

Nicolao F, Masini A, Manuela M, Attili AF, Riggio O. Role of determination of partial pressure of ammonia in cirrhotic patients with or without hepatic encephalopathy. J Hepatol. 2003;38:441-446.

RECOMMENDATIONS

- HE is a diagnosis of exclusion and is made on clinical grounds.
- Do not check serum ammonia levels in patients with CLD to diagnose HE, to assess the severity of HE, or to determine whether HE is resolving.
- Use clinical evaluation to determine the severity and course of HE and treatment, NOT ammonia levels

Ninan J, Feldman L. Ammonia Levels and Hepatic Encephalopathy in Patients with Known Chronic Liver Disease *J. Hosp. Med. 2017 August;12(8):659-661*

Syncope – Carotid US and Echo

- 66 yo man with HTN, hospitalized for a transient loss of consciousness
- Had been outside on hot day, felt dizzy before LOC
- No chest pain, diaphoresis, dyspnea, seizures, slurred speech
- Cardiac and neurologic exams normal
- Labs and ECG normal

- What happens next?

Syncope – Carotid US and Echo

- Carotid US is NOT indicated in the workup of syncope in adults unless there is reason to suspect concomitant TIA or CVA.
- Carotid hypersensitivity can cause syncope, but this is diagnosed by physical exam, not by US. Carotid stenosis very rarely causes syncope in absence of CVD.
- The yield of carotid US in syncope is very low, but the cost is high (including downstream costs) and benefit does not outweigh risk and/or cost.
- *Mendu ML, McAvay G, Lampert R, Stoehr J, Tinetti ME. Yield of diagnostic tests in evaluating syncopal episodes in older patients. Arch Intern Med. 2009;169(14):1299–1305.*

Syncope – Carotid US and Echo

- Transthoracic echo has an extremely low diagnostic yield in patients with no cardiac history and a normal physical examination and ECG.
- % of patients with a normal cardiac history, examination, and ECG with new, significant abnormalities on echo
- 0% in 3 studies (n = 340)
- 2% in 1 study (10/488 patients)
- 2.1% in 1 study (1/47 patients)
- 4.2% in 1 study (8/192 patients)

Syncope – Carotid US and Echo

Recchia D, Barzilai B. Echocardiography in the evaluation of patients with syncope. J Gen Intern Med. 1995;10(12):649-655.

Mendu ML, McAvay G, Lampert R, Stoehr J, Tinetti ME. Yield of diagnostic tests in evaluating syncopal episodes in older patients. Arch Intern Med. 2009;169(14):1299-1305.

Anderson KL, Limkakeng A, Damuth E, Chandra A. Cardiac evaluation for structural abnormalities may not be required in patients presenting with syncope and a normal ECG result in an observation unit setting. Ann Emerg Med. 2012;60(4):478-484.e1.

Chang NL, Shah P, Bajaj S, Virk H, Bikkina M, Shamoon F. Diagnostic Yield of Echocardiography in Syncope Patients with Normal ECG. Cardiol Res Pract. 2016;2016:1251637.

Han SK, Yeom SR, Lee SH, et al. Transthoracic echocardiogram in syncope patients with normal initial evaluation. Am J Emerg Med. 2017;35(2):281-284.

Syncope – Carotid US and Echo

- The diagnostic yield of echo is higher in pts with:
- positive cardiac history
- abnormal ECG
- abnormal physical exam suggestive of structural heart disease
- abnormal cardiac biomarkers

Han SK, Yeom SR, Lee SH, et al. Transthoracic echocardiogram in syncope patients with normal initial evaluation. Am J Emerg Med. 2017;35(2):281-28

Sarasin FP, Junod AF, Carballo D, Slama S, Unger PF, Louis-Simonet M. Role of echocardiography in the evaluation of syncope: a prospective study. Heart. 2002;88(4):363-367.

RECOMMENDATIONS

- Carotid artery ultrasound should not be done for syncope in the absence of other neurologic symptoms.
- Perform echo on patients with syncope and a history of cardiac disease, exam suggestive of structural heart disease or congestive heart failure, or abnormal ECG.
- All patients with syncope should receive a complete history, physical exam, orthostatic vital signs, and ECG.

Dittmar PC, Feldman LS, Carotid Artery Ultrasound for Syncope.*J. Hosp. Med* 2016;2;117-119. doi:10.1002/jhm.2428

Acute Treatment of Hypertensive Urgency in Hospitalized Patients

- 67-year-old man is hospitalized with CAP
- Hx of HTN, takes amlodipine and chlorthalidone as an outpatient
- Hospital day two, B/P 192/95 on a scheduled vital signs check
- No other symptoms, on his home B/P med regimen
- Nurse asks about adding "as-needed" antihypertensive medications
- What happens next?

Acute Treatment of Hypertensive Urgency in Hospitalized Patients

Assumption: If one does not treat immediately, something bad (ie, end-organ damage) will occur over the next few hours.

Acute Treatment of Hypertensive Urgency in Hospitalized Patients

- Reality (or at least what happens in an intern's head):
- 1) If I don't prescribe something, this patient's blood pressure is going to stay up and this nurse is going to keep calling me (and document in the record that I am ignoring it) every hour or two until I do something.
- 2) Even UpToDate notes that "potential legal ramifications partially motivate lowering the blood pressure over several hours."

Varon J, Williams EJ. Management of severe asymptomatic hypertension (hypertensive urgencies) in adults. In: Post T, ed. UpToDate, Waltham, MA. (Accessed February 13, 2018).

Acute Treatment of Hypertensive Urgency in Hospitalized Patients

- In hypertensive urgency, rates of adverse events at seven days are low, even with extreme blood pressure elevation.
- 58,836 patients found to have blood pressures meeting the criteria for hypertensive urgency.
- For SBP<220, rates of MI or CVA/TIA in first seven days were 0.1% in those sent home and 0.5% in those sent to hospital.
- For SBP>220, rates were 0.1% for those sent home and 0% for those sent to hospital.

Patel KK, Young L, Howell EH, et al. Characteristics and outcomes of patients presenting with hypertensive urgency in the office setting. *JAMA Intern Med.* 2016;176(7):981-988. doi: 10.1001/jamainternmed.2016.1509.

Acute Treatment of Hypertensive Urgency in Hospitalized Patients

- "Patients with markedly elevated BP but without acute target-organ damage usually do not require hospitalization", and "there is no evidence to suggest that failure to aggressively lower BP is associated with any increased short-term risk to the patient who presents with severe hypertension." – JNC-7
- "Unfortunately, the term 'urgency' has led to overly aggressive management of many patients with severe, uncomplicated hypertension. Aggressive dosing with intravenous drugs or even oral agents, to rapidly lower BP is not without risk." - JAMA

Chobanian AV, Bakris GL, Black HR, et al. The seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High blood pressure: the JNC 7 report. *JAMA*. 2003;289(19):2560-2572. doi: 10.1001/jama.289.19.2560.

Steinman MA, Auerbach AD. Managing chronic disease in hospitalized patients. *JAMA Intern Med.* 2013;173(20):1857-1858. doi: 10.1001/jamaint- ernmed.2013.9511.

SUMMARY OF RECOMMENDATIONS

- Ensure that patients do not have symptoms and/or signs of end-organ damage
- Search for causes of treatable HTN in hospitalized patients: pain, nausea, withdrawal syndromes, and missing medications
- If no symptoms and/or signs of end-organ damage, allow rest, followed by reassessment.
- Do not give IV or immediate-acting oral antihypertensive medications to acutely lower blood pressure.

Cellulitis – Blood Cultures and LE Venous Doppler

- 50 yo man with cellulitis right shin
- Redness, warmth, pain, and swelling, but no history of VTE
- No indwelling hardware in his RLE
- No shortness of breath or chest pain
- Admitted for IVF and IV cefazolin

- What is the next step?

Cellulitis – Blood Cultures and LE Venous Doppler

- Ultrasound is ordered for up to 73% of patients with a cellulitis diagnosis.

- 2013 meta-analysis of 9 studies
  - cellulitis patients with concurrent DVT
  - total DVT (3.1%) and proximal DVT (2.1%)

Gunderson CG, Chang JJ. Overuse of compression ultrasound for patients with lower extremity cellulitis. Thromb Res. 2014;134(4):846-850.

Gunderson CG, Chang JJ. Risk of deep vein thrombosis in patients with cellulitis and erysipelas: a systematic review and meta-analysis. Thromb Res. 2013;132(3):336-340.

Cellulitis – Blood Cultures and LE Venous Doppler

- Prospective cohort study of 200 patients with cellulitis
  - Wells score with D-dimer testing overestimated the DVT risk
- Among patients with a high-risk Wells score, a positive D-dimer result, or both—only 1 (0.5%) was diagnosed with ipsilateral DVT after ultrasound testing.

Maze MJ, Skea S, Pithie A, Metcalf S, Pearson JF, Chambers ST. Prevalence of concurrent deep vein thrombosis in patients with lower limb cellulitis: a prospective cohort study. BMC Infect Dis. 2013;13:141.

Cellulitis – Blood Cultures and LE Venous Doppler

- Retrospective study of 757 patients admitted for cellulitis
  - 553 had blood cultures performed
  - Specific microbial strain was isolated in 11 cases
  - 9 cases grew Gm+ organisms already covered with current antimicrobial therapy
  - 2 cases had risk factors for a more complicated infection such as an indwelling catheter or hardware

Perl B, Gottehrer NP, Raveh D, Schlesinger Y, Rudensky B, Yinnon AM. Cost-effectiveness of blood cultures for adult patients with cellulitis. Clin Infect Dis. 1999 Dec;29(6):1483-8.

Cellulitis – Blood Cultures and LE Venous Doppler

- Prospective study 50 adults with cellulitis
- Blood cultures were positive in 2 patients
  - 1 Group A streptococci
  - 1 Staphylococcus
  - Both covered by current antimicrobials

Hook EW 3rd, Hooton TM, Horton CA, Coyle MB, Ramsey PG, Turck M. Microbiologic evaluation of cutaneous cellulitis in adults. Arch Intern Med. 1986 Feb;146(2):295-7.

Cellulitis – Blood Cultures and LE Venous Doppler

Bottom Line:

Blood cultures are of little value in determining the microbial origin of acute cellulitis and no patient in either study required change in antimicrobial therapy based on culture results.

RECOMMENDATIONS

- Do not routinely perform ultrasound in cases of cellulitis.
- Consider US if there is:
  - a hx of VTE, immobility, thrombophilia, CHF, CVA w hemiparesis
  - trauma or recent surgery
  - Lack of response to antibiotics
- Do not routinely perform blood cultures on patients with cellulitis.
- Consider blood cultures if there is hardware or suspicion of sepsis or other concurrent infection.

Cho HJ, Dunn AS, The value of using ultrasound to rule out deep vein thrombosis in cases of cellulitis. J. Hosp. Med 2017;4;259-261. doi:10.12788/jhm.2719

Giving O2 to patients who aren't hypoxic

- Current "Dogma" – Give oxygen to non-hypoxic patients who have dyspnea, COPD, sickle cell disease, chest pain, acute MI, or CVA.

- Where it comes from – My resident does it, and it just makes sense, right? They are suffering from a problem caused by decreased oxygen or perfusion, so increasing pulse ox or PaO2 has to help. Right?

Giving O2 to patients who are not hypoxic

- Current Recommendation – Patients without hypoxia have very few indications for oxygen: Pneumothorax, CO poisoning or methemoglobinemia, cluster headaches, etc. Giving oxygen to patients with acute CVA provides no benefit and giving oxygen to patients with acute MI may WORSEN outcomes!

- Science Behind It –

Sepehrvand N, James SK, Stub D, *et al.* Effects of supplemental oxygen therapy in patients with suspected acute myocardial infarction: a meta-analysis of randomised clinical trials. *Heart* 2018;**104:**1691-1698.

Andell, P, et al. Eur Heart J Acute CardiovascCare. 2019May13:2048872619848978. doi: 10.1177/2048872619848978

Avoiding contrast-enhanced CT scans in patients with shellfish allergies

- Current "Dogma": Patients with shellfish allergies can't get IV contrast or need steroids and antihistamines prior to contrast
- Where it comes from: shellfish and contrast both contain iodine
- Current recommendation: For patients who require IV contrast media for CT scans, the American Academy of Allergy, Asthma, and Immunology recommends not routinely pretreating with corticosteroids and antihistamines for patients with a history of seafood allergy. The American College of Radiology recommends pretreatment with corticosteroids only for those patients who have previously experienced moderate to severe reactions to IV contrast.

Avoiding contrast-enhanced CT scans in patients with shellfish allergies

Science behind it:

Narayan AK, Durand DJ, Feldman LS, Shellfish Allergies and CT Scans. *J. Hosp. Med* 2016;6;435-437. doi:10.1002/jhm.2509

Beaty AD, Lieberman PL, Slavin RG. Seafood allergy and radiocon- trast media: are physicians propagating a myth? Am J Med. 2008;121: 158:e1–e4.

Schabelman E, Witting M. The relationship of radiocontrast, iodine, and seafood allergies: a medical myth exposed. J Emerg Med. 2010; 39(5):701–707.

http://www.choosingwisely.org/clinician-lists/ american-academy-allergy-asthma-immunology-low-or-iso-osmolar- radiocontrast-media/.

ACR Manual on Contrast Media. Version 9. Reston, VA: American College of Radiology, ACR Committee on Drugs and Contrast Media; 2013.

Getting Daily Labs on Hospitalized Patients

- Current "Dogma" – Labs get ordered as DAILY and just propagate throughout hospital stay.
- Where it comes from – We need to keep up with acute changes in status during the hospitalization, and I don't want to get yelled at.
- Excess labs increase costs, force workup associated with unrelated findings, and decrease patient satisfaction.

Getting Daily Labs on Hospitalized Patients

- Current Recommendation –
- Approach each patient daily and decide what tests are needed. If the results of the test are not going to impact you diagnosis or treatment plan, don't order the test!
- Science Behind It –

Corson, A. H., Fan, V. S., White, T. , Sullivan, S. D., Asakura, K. , Myint, M. and Dale, C. R. (2015), A multifaceted hospitalist quality improvement intervention: Decreased frequency of common labs. J. Hosp. Med., 10: 390-395.

Eaton KP, Levy K, Soong C, et al. Evidence-Based Guidelines to Eliminate Repetitive Laboratory Testing. *JAMA Intern Med*. 2017;177(12):1833–1839.

Prescribing Docusate for Constipation in Hospitalized Adults

- Current "Dogma" – Put all hospitalized patients on docusate so they don't get constipated from immobilization, illness, and other medications.

- Where it comes from – Doctors have been doing it since the 1930s and studies from the 1960s showed that it might work.

Prescribing Docusate for Constipation in Hospitalized Adults

McGill University Health Centre in Montreal, Canada reported that docusate was the most frequently prescribed laxative, accounting for 64% of laxative medication doses, with associated costs approaching $60,000 per year.

TABLE. **Summary of Randomized Controlled Trials Studying Docusate**

First Author	Year Published	Sample Size (n)	Patient Population	Intent of Therapy	Site of Care	Docusate Dose	Comparator	Duration	Brief Summary	Comments
Hyland[9]	1968	15	Geriatric patients in hospital with chronic constipation	Treatment	Hospital	Docusate sodium 100 mg tid	Placebo with crossover	Four weeks, then four weeks crossover	Increase in bowel movements with treatment	19 patients excluded because of placebo response
Goodman[12]	1976	34	Prophylaxis for Inpatients on "chronic medical service"	Prophylaxis	Hospital	Docusate sodium 100 mg bid	Control	26 days	No difference in frequency of quality of bowel movements	
Fain[13]	1978	46	Institutionalized patients with chronic constipation	Treatment	Nursing home	Docusate sodium 100 mg daily, docusate sodium 100 mg bid, docusate calcium 240 mg daily	Placebo period for each arm	Two weeks placebo, three weeks treatment	An increase in frequency of bowel movements with docusate calcium 240 mg, but no change in quality. Increase in bowel movements in other arms did not meet statistical significance	
Chapman[14]	1985	12	Healthy patients with ileostomies and healthy controls	Prophylaxis	Ambulatory	Docusate sodium 100 mg tid	Control with crossover	Four days	No difference in stool weight, frequency, water content, or transit time	
Castle[15]	1991	15	Elderly veterans in nursing home on bowel regimen	Treatment	Nursing home	Docusate calcium 240 mg bid	Placebo with crossover	Three weeks then two weeks crossover	No difference in stool frequency, need for additional laxatives, or patient's subjective experience	
McRorie[17]	1998	170	Chronic idiopathic constipation	Treatment	Ambulatory	Docusate sodium 100 mg bid	Psyllium 5.1g bid	Two weeks placebo, two weeks treatment	Psyllium increased stool water content and frequency; docusate had no change	Industry sponsored
Tarumi[18]	2013	74	Hospice patients	Prophylaxis and treatment	Inpatient hospice	Docusate sodium 200 mg bid	Placebo	10 days	No difference in stool frequency, volume, or consistency	All patients received sennosides

Prescribing Docusate for Constipation in Hospitalized Adults

- **Current Recommendation –**
- Use laxatives with proven efficacy (such as polyethylene glycol, lactulose, psyllium, or sennosides) for treatment or prophylaxis of constipation instead of using docusate.

- **Science Behind It –**

Robert J Fakheri, MD, Frank M Volpicelli, MD, Things We Do for No Reason: Prescribing Docusate for Constipation in Hospitalized Adults. *J. Hosp. Med* 2019;2;110-113. doi:10.12788/jhm.3124

Lee TC, McDonald EG, Bonnici A, Tamblyn R. Pattern of inpatient laxative use: waste not, want not. *JAMA Intern Med*. 2016;176(8):1216-1217. doi: 10.1001/jamainternmed.2016.2775.

#TWDFNR

- Telemetry when patients don't need it
- Making patients NPO for no reason
- Neuroimaging for hospitalized patients with delirium
- Routine replacement of peripheral IVs every 3 days
- Probiotics in patients with Clostridioides difficile infection
- Sliding scale insulin in hospitalized patients
- Failure to question a PCN allergy
- Routine overnight vital sign checks

#TWDFNR

- Neutropenic Diet
- Hospitalization for the evaluation of low risk chest pain
- Bridging anticoagulation around surgery or procedures
- Against Medical Advice Discharges
- Giving 2 units PRBC to stable anemic patients instead of 1unit
- Contact Precautions for MRSA and VRE
- Prealbumin levels to diagnose malnutrition in hospital

#TWDFNR

- Urine eosinophils for acute interstitial nephritis
- Urinary fractional excretion indices in the evaluation of acute kidney injury
- Serum and RBC folate testing on hospitalized patients
- Nebulized bronchodilators instead of metered-dose inhalers for obstructive pulmonary symptoms
- SCDs for patients on medical wards
- Routine Pre-op labs

#TWDFNR

- Routine Chest Radiographs after Uncomplicated Thoracentesis
- IVC Filter placement in patients with VTE and no contraindication to anticoagulation
- Discontinuing Buprenorphine When Treating Acute Pain
- Routine Echocardiography in Hemodynamically Stable Patients with Acute Pulmonary Embolism
- Vitamin D screening
- Routine coverage of anaerobes in aspiration pneumonia

#TWDFNR

- The use of thickened liquids in hospitalized patients with dysphagia
- Blood cultures in hospitalized patients on antibiotics
- Checking and following BNP in patients with known LVSF
- Use of antipsychotic meds in hospitalized patients with acute delirium
- Ordering T3 and T4 when TSH alone is appropriate
- Routine lipid screening

#TWDFNR

- Testing serology for H. pylori instead of stool antigen or breath test
- Testing for amylase instead of lipase for acute pancreatitis
- Getting hypercoaguability workup in face of acute clot
- Treating abnormal INRs when inappropriate
- Procalcitonin testing outside of protocols
- Testing for C. diff inappropriately
- Ordering broad respiratory panels

#TWDFNR

- The use of thickened liquids in hospitalized patients with dysphagia
- Blood cultures in hospitalized patients on antibiotics
- Checking and following BNP in patients with known LVSF
- Use of antipsychotic meds in hospitalized patients with acute delirium
- Routine premedication before transfusion

Neuroimaging for hospitalized patients with delirium

- Current "Dogma" – When a patient in the hospital develops delirium, they need a stat CT brain

- Where it comes from – Delirium can be caused by intracranial processes, and we don't want to miss anything

TABLE. **Studies of Neuroimaging for Hospitalized Patients with Delirium**

Lead Author	Year	Study Design	Population (n)	Setting	Methods	Definition of Positive Neuroimaging	Outcome Measures	Results
Lai[6]	2010	Case Control	Adult patients admitted to a delirium unit over an 18-month period (300 patients, 200 with head CT)	Single teaching hospital in Australia	CAM used by geriatricians to identify patients. Then chart review for additional predictive risk factors. Two clinicians reviewed the clinical significance of CT results.	Intracranial abnormalities accountable for a cause of delirium that resulted in a change in patient's management.	The yield of true positive CT findings showing an intracranial cause of delirium.	29/200 (14.5%) true positive CT findings, 13 with ischemic stroke, 7 with SDH, 9 with ICH. 3/200 (1.5%) had none of the three risk factors: focal neurologic deficits, recent falls, or deterioration in consciousness.
Thiesen-Toupal[10]	2014	Retrospective Cohort	Adult patients who underwent CT head scans on multiple medical floors over a 35-month period (1,714 head CT studies, 220 scans for delirium)	Single tertiary care center in the Northeast	Indications for scans were delirium, AMS, confusion, encephalopathy, or unresponsiveness. CT scans had to be done 24 hours after admission. Patients excluded if known fall, head trauma, or new neurologic deficit in the previous two weeks or admitted diagnosis of intracranial pathology.	Defined as an intracranial process that could explain delirium. "Equivocal" scans had findings of unclear significance.	Diagnostic yield of head CT imaging for identifying the cause of non-resolving or new-onset delirium.	6/220 (2.7%) positive scans and 4/220 (1.8%) equivocal. 3/6 positive scans were in anticoagulated patients.
Vijayakrishnan[11]	2015	Retrospective Cohort	Adult hospitalized patients who had CT head scans for mental status changes over a 12-month period (400 patients, 36 with an indication of delirium)	Single tertiary care center in the Northeast	Radiology logs reviewed using keywords: confusion, delirium, agitation, and AMS. Charts reviewed to include patients who developed AMS while inpatient. Patients with long-standing AMS with no worsening during inpatient stay were excluded.	Acute changes: new stroke, hemorrhage, infection, or neoplasm.	Acute CT scan findings that altered management.	4/36 (11%) CT scans with acute changes in patients with inpatient delirium. All 4 met imaging guidelines for recent falls, new neurologic deficits. or anticoagulation.
Hijazi[7]	2015	Retrospective Cohort	Adult patients diagnosed with delirium either at or during admission over a 20-month period (1653 patients with delirium, 538 with CT and/or MRI imaging)	Single tertiary care center in Australia	Patients selected by using ICD-10 codes for delirium or disorientation, disorientation NOS, other delirium, and delirium NOS. Delirium must have been documented prior to imaging request.	Acute/subacute stroke, hemorrhage, abscess, neoplasm, vasculitis, PRES, encephalitis, acute demyelination, or fat embolism.	The yield of CT and/or MRI imaging in patients with possible delirium.	78/538 (14.5%) positive CT head or MRI brain scans. Patient exam findings or risk factors for intracranial processes not described.

Abbreviations: AMS, altered mental status; CAM, Confusional Assessment Method; CT, computed tomography; ICH, intracerebral hemorrhage; MRI, magnetic resonance imaging; NOS, not otherwise specified; PRES, posterior reversible encephalopathy, syndrome; SAH, subarachnoid hemorrhage; SDH, subdural hemorrhage.

Neuroimaging for hospitalized patients with delirium

RECOMMENDATIONS

- Perform neuroimaging if:
  - history of fall or head trauma in the preceding two weeks
  - any new focal neuro abnormalities on neurologic exam
  - patient is receiving systemic anticoagulation
  - sudden decline in the level of consciousness
  - persistence despite addressing identified factors
  - suspicion for embolic or metastatic processes
- Science Behind It –

Stephen Chow, DO, Andrew McWilliams, MD, Daniel M Kaplan, MD, John R Stephens, MD, Things We Do for No Reason: Neuroimaging for Hospitalized Patients with Delirium. *J. Hosp. Med* 2019;7;441-444. Published online first March 20, 2019.. doi:10.12788/jhm.3167

Routine replacement of peripheral IVs every 3 days

- Current "dogma" – replace peripheral IVs every 3 days, regardless of how well it functions or what it looks like clinically.
- Where it comes from – CDC recommendations based on studies from the 1970s
- Current recommendation - According to the CDC: "No recommendation is made regarding replacement of peripheral catheters in adults, only when clinically indicated."

Routine replacement of peripheral IVs every 3 days

- Science behind it – Catheters left in place longer than 3 days but with good function and no signs of complication had no higher incidence of phlebitis or local or bloodstream infection.

Webster J, Osborne S, Rickard CM, New K. Clinically-indicated replacement versus routine replacement of peripheral venous catheters. Cochrane Database Syst Rev. 2015;(8):CD007798.

Rickard CM, Webster J, Wallis MC, et al. Routine versus clinically indicated replacement of peripheral intravenous catheters: a randomised controlled equivalence trial. Lancet. 2012;380(9847):1066-1074.

Using probiotics in patients with Clostridioides difficile infection

- Current Dogma – Give probiotics to patients with C. diff infections to promote recovery and prevent recurrence.
- Where it comes from – People have been doing it for years, and it just makes good sense, right?
- Current Recommendation – No probiotic agent has shown reliable or reproducible efficacy in preventing CDI. Current treatment guidelines recommend against the routine use of probiotics in C diff infections.

Using probiotics in patients with Clostridioides difficile infection

- Science Behind It –

McDonald LC, Gerding DN, Johnson S, et al. Clinical Practice Guidelines for Clostridium difficile Infection in Adults and Children: 2017 Update by the Infectious Diseases Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA). *Clin Infect Dis* 2018; 66:e1.

Surawicz CM, Brandt LJ, Binion DG, et al. Guidelines for diagnosis, treatment, and prevention of Clostridium difficile infections. *Am J Gastroenterol* 2013; 108:478.

Sliding-Scale Insulin for Glycemic Control in Hospitalized Patients

- Current "Dogma" – Hold oral agents and long acting insulin when patients are hospitalized and use only short acting insulin on sliding scale.

- Where it comes from – Oral agents and long acting insulin promote hypoglycemia in hospitalized patients (particularly sulfonylureas).

Sliding-Scale Insulin for Glycemic Control in Hospitalized Patients

- SSI alone has never been shown to prevent hyperglycemia in hospitalized patients
- Current guidelines from American Diabetes Association and American Association of Clinical Endocrinologists for hospitalized patients who require insulin
  - recommend against the prolonged use of SSI as monotherapy (category A recommendation)
  - support the use of basal plus correctional insulin with the addition of nutritional insulin for patients who are eating (category A recommendation)

Sliding-Scale Insulin for Glycemic Control in Hospitalized Patients

- Current Recommendation –

- Instead of SSI monotherapy for hospitalized patients who require insulin, add basal and prandial insulin, using a weight-based approach if necessary for insulin-naive patients.

- Science Behind It –

Browning LA, Dumo P. Sliding-scale insulin: an antiquated approach to glycemic control in hospitalized patients. *Am J Health Syst Pharm.* 2004;61(15):1611-1614

Daniel B Ambrus, MD, MSc, Mark J O'Connor, MD, Things We Do For No Reason: Sliding-Scale Insulin as Monotherapy for Glycemic Control in Hospitalized Patients. *J. Hosp. Med*2019;2;114-116. Published online first November 28, 2018. doi:10.12788/jhm.3109

American Diabetes A. 14. Diabetes care in the hospital: Standards of medical care in diabetes-2018. *Diabetes Care.* 2018;41(Suppl 1)

Moghissi ES, Korytkowski MT, DiNardo M, et al. American Association of Clinical Endocrinologists and American Diabetes Association consensus statement on inpatient glycemic control. *Endocr Pract.* 2009;15(4):353-369.

Failure to question a penicillin allergy

- Current "Dogma" – Withhold penicillin, cephalosporins, aztreonam, and monolactams from anyone with a reported penicillin allergy.
- Where it comes from – Cross reactivity reported and anaphylaxis is scary.

Failure to question a penicillin allergy

- 10% of the adult population 15% of hospitalized adults report PCN allergy, but about 90% of all patients reporting a PCN allergy can tolerate PCN antibiotics.
- Patients labeled as PCN allergic—whether correctly or incorrectly—have poorer outcomes as noted by increased rates of serious infections and tend to have longer hospital stays.

RECOMMENDATIONS

- Obtain drug allergy history
- Update the medical record if you can confirm a patient has since tolerated PCN or a PCN derivative to which they were previously allergic.
- Perform PST if PCN allergy history is unclear
- If skin test negative, try supervised oral challenge to PCN/PCN derivative.
- Test PCN-allergic patients preemptively who are at high risk of requiring PCN/PCN derivative antibiotics (surgery, transplant, oncology, and immunosuppressed patients)

Failure to question a penicillin allergy

- Science Behind It –

Renee S Kleris, MD, MPH, Patricia L Lugar, Md, MS, Things We Do For No Reason: Failing to Question a Penicillin Allergy History. Published online first March 20, 2019. DOI: 10.12788/jhm.3170

American Academy of Allergy, Asthma and Immunology, the American College of Allergy, Asthma and Immunology, and the Joint Council of Allergy, Asthma and Immunology. *Drug allergy: an updated practice parameter.* Ann Allergy Asthma Immunol. 2010;105(4):259-273. doi: 10.1016/j.anai.2010.08.002.

Macy E, Contreras R. *Health care use and serious infection prevalence associated with penicillin "allergy" in hospitalized patients: a cohort study*. J Allergy Clin Immunol. 2014;133(3):790-796. doi: 10.1016/j.jaci.2013.09.021.

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