Update in Hospital Medicine
2014

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Albert Einstein College of Medicine

Presented by members of the SGIM Academic Hospitalist Taskforce
Update in Hospital Medicine 2014

• Updated literature
• March 2013– March 2014

Process:
• CME collaborative review of journals
  ▪ Including ACP J. Club, J. Watch, etc.
• Three hospitalists ranked articles
  ▪ Definitely include, can include, don’t include
Chose articles based on 3 criteria:

1) Change your practice/teaching
2) Modify your practice/teaching
3) Confirm your practice/teaching

- Hope to not use the words
  - Markov model, Kaplan-Meier, Student’s t-test
- Focus on breadth, not depth
Update in Hospital Medicine 2014

- Major reviews/short takes
- Case-based format
- Multiple choice questions
- Promote retention
Syllabus/Bookkeeping

• No conflicts of interest
• Final presentation available by email:
  sharpeb@medicine.ucsf.edu
• Bibliography available at the end
Case Presentation

You are long-call and your hard-working intern presents the next case.

She describes a 63 year-old man with a history of COPD, CAD, and diabetes who presented with 3 days of fever, cough, and shortness of breath.

On presentation, his vitals were temperature 38.9°C, blood pressure 80/45, heart rate 130s, respiratory rate 30, and oxygen saturation 85% on room air.
Case Presentation

His exam was notable for diffuse expiratory wheezes and crackles at the right base. His white blood cell count is 24,000 and his CXR shows a clear RLL infiltrate.

The team has diagnosed him with community-acquired pneumonia and a COPD exacerbation and is admitting the patient to the ICU.

The intern states they will treat him with ceftriaxone and azithromycin. What teaching point might you make about the antibiotic choice for CAP?
What teaching point might you make about the antibiotic selection (patient with CAP going to the ICU)?

A. We probably don’t need to cover atypicals – sounds a lot like Strep pneumo to me. Let’s stop the azithro.

B. That’s fine but we could give him ceftriaxone and doxy – it is a lot cheaper and just as good.

C. That’s a good choice – there may be a mortality benefit to using azithro in patients going to the ICU with CAP.

D. Seriously? Ceftriaxone and azithro? C’mon, the guy is in septic shock – we gotta give him the Vosyn (vancomycin and Zosyn)!
Macrolides for CAP in the ICU

Question: For critically ill patients with CAP, are there benefits associated with macrolide therapy?

Design: Systematic review & meta-analysis
Total of 27 observational studies (no RCTs)
~10,000 patients; all “high-quality” observational studies

- Compared macrolides vs. no macrolides
- Primary outcome: 30-day mortality

Results

- 41% of patients got macrolides

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Macrolides for CAP in the ICU

Question: When should we transfuse in the setting of an acute GI bleed?

Design: Syst review & meta-analysis; 27 obs studies (no RCTs); macrolides vs. no

Conclusion: Macrolides may be assoc. with lower mortality in pts. with CAP in the ICU; May have 25% decrease in mortality

Comment: All observational data; other treatments?? Plausible impact from immune modulatory properties (cytokines, neutrophils, etc.) Guidelines suggest either azithro or FQ Likely first-line: β-lactam + macrolide

What teaching point might you make about the antibiotic selection (patient with CAP going to the ICU)?

A. We probably don’t need to cover atypicals – sounds a lot like Strep pneumo to me. Let’s stop the azithro.

B. That’s fine but we could give him ceftriaxone and doxy – it is a lot cheaper and just as good.

C. That’s a good choice – there *may* be a mortality benefit to using azithro in patients going to the ICU with CAP.

D. Seriously? Ceftriaxone and azithro? C’mon, the guy is in septic shock – we gotta give him the Vosyn (vancomycin and Zosyn)!
Case Presentation

The patient is started on ceftriaxone and azithromycin and the team is excited about the evidence-based practice.

The resident turns and says, “Hey, I have a question – what’s the deal with procalcitonin? Should we be using that to decide about antibiotics in a patient like this?”

How do you respond to the resident’s question about procalcitonin?
How do you respond to the resident’s question about procalcitonin?

A. In patients with respiratory tract infections, it might help reduce antibiotic use without impacting outcomes.

B. It is good for the outpatient setting but there is no evidence for using it in the ICU.

C. Procalcitonin? Why would do that? His calcium level is fine.

D. That’s a great question. Why don’t you go ahead and look that up.
Procalcitonin-Guided Treatment

Question: Should procalcitonin be used to guide antibiotic therapy?

Procalcitonin-Guided Treatment

Question: Should procalcitonin be used to guide antibiotic therapy?

Design: Systematic review & meta-analysis; 18 RCTs procalcitonin vs. usual care to manage antibiotics;

Four groups studied:
1) ICU
2) Respiratory tract infections (Pneumonia, COPD, etc.)
3) Neonates/sepsis
4) Post-op patients

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**Procalcitonin-Guided Treatment**

**Question:** Should procalcitonin be used to guide antibiotic therapy?

**Design:** Systematic review & meta-analysis; 18 RCTs procalcitonin vs. usual care to manage antibiotics;

**Conclusion:** In ICU pts., procalcitonin can safely be used to stop antibiotics; In respiratory tract infections, can be used to start or stop; decreases abx prescribing

**Comments:** Heterogeneity of studies, well-done overall; Confirms prior studies; safe & effective Must be used with standard protocol

How do you respond to the resident’s question about procalcitonin?

A. In patients with respiratory tract infections, it might help reduce antibiotic use without impacting outcomes.

B. It is good for the outpatient setting but there is no evidence for using it in the ICU.

C. Procalcitonin? Why would do that? His calcium level is fine.

D. That’s a great question. Why don’t you go ahead and look that up.
Case Continues

You make the appropriate teaching point about procalcitonin and later send a pdf of the article.

The patient is also given systemic steroids and bronchodilators for a COPD exacerbation. He slowly improves over the next 3 days and the team is preparing for discharge. You decide to make a teaching point about duration of steroids in patients with a COPD exacerbation.

You ask the intern, “How long should the steroid course be?”
How does the intern respond to your question – how long should the total steroid course be?

A. 5 days
B. 7 days
C. 10 days
D. 14 days with a taper
E. That’s a good question – why don’t you go and look that up.
Steroids in COPD Exacerbation

Question: In COPD exacerbations, what is the optimal duration of systemic steroids?

Design: Randomized placebo controlled, double blind; non-inferiority trial

Clear COPD exacerbation, age > 40 yo

- Included 314 patients (90% admitted, including ICU)
- Compared prednisone 40mg for 5 days vs. 14 days
- All received systemic antibiotics and nebulizer therapy

# Results

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- No difference in quality of life
- No difference in steroid side effects
- Significantly reduced steroid exposure over 6 months

Steroids in COPD Exacerbation

Question: In COPD exacerbations, what is the optimal duration of steroids?

Design: Randomized placebo controlled; double blind; non-inferiority trial; Clear COPD exacerbation, age > 40 yo

Conclusion: In COPD exac., 5 days not inferior to 14 days of steroids; no diff. in clinical outcomes, mortality, re-exacerbation; shorter LOS

Comments: Well done RCT, first to include ICU patients. Confirms prior observational studies. For most patients, 5 days is enough.

How does the intern respond to your question – how long should his total steroid course be?

A. 5 days
B. 7 days
C. 10 days
D. 14 days with a taper
E. That’s a good question – why don’t you go and look that up.
Case Presentation

You decide on a 5 day course.

The intern asks, “Hey, he’s on a beta-blocker for his CAD – is that safe given his COPD?”

Is the beta-blocker for CAD safe in patients with COPD?
In a retrospective study of patients with COPD who suffered a first myocardial infarction, those treated with a \(\beta\)-blocker (after controlling for other factors) had lower mortality over \(\sim 3\) years of follow-up (hazard ratio 0.50, 95% CI 0.36-0.69, \(p<0.001\)).

Adds to clear evidence of safety and improved outcomes in patients with COPD and CAD who are prescribed \(\beta\)-blockers.

Case Summary

Definitely

1. Unless contraindicated, prescribe short courses of steroids (5 days) in patients with a COPD exacerbation.

2. Prescribe β-blockers to patients with COPD and CAD.

Consider

1. Using macrolides in patients with CAP requiring ICU admission

2. Procalcitonin can reduce antibiotic exposure without impacting outcomes (ICU, respiratory tract infections)

Update in Hospital Medicine
Case Presentation

A 46 year old male presents to the ED with severe mid-sternal chest pain which is constant and worse with deep respirations. He does not wish to lie down on the stretcher as this makes the pain worse. His EKG shows diffuse ST elevations. The patient was treated with 600mg of Ibuprofen in the ED for pericarditis and was transferred to your observation unit because his EKG looked scary.

You continue Ibuprofen 600mg every 8 hours and note that serial troponins are normal. You consider adding colchicine to the patient’s regimen, but are unsure if he will benefit.
Which of the following is true about colchicine for pericarditis?

A. The addition of colchicine to NSAIDs reduces the rate of recurrent and persistent pericarditis

B. A recent study found that colchicine offered no benefit to patients with acute pericarditis

C. In patients with acute pericarditis, colchicine is associated with decreased incidence of post-pericarditisic gout

D. Administration of colchicine reduces length-of-stay because the combination of NSAIDs and colchicine causes so much dyspepsia, patients want to go home
Colchicine in Acute Pericarditis

Question: Does colchicine added to NSAIDS improve outcomes for patients w/ acute pericarditis?

Design: Randomized double-blinded trial of colchicine plus NSAIDS vs. NSAIDS alone

- 240 patients with acute pericarditis randomized
- All got Ibuprofen 600mg q 8h for 7-10 days
- Intervention: colchicine 0.5 - 1.0mg daily for 3 months
- Primary outcome: composite of persistent or recurrent pericarditis
- Other outcomes: symptom persistence at 72 hrs, remission at 1 week, cardiac tamponade

Relative Risk of outcome if treated with Colchicine vs. not:

RR = 0.44 (95% CI: 0.28 – 0.70)

Results: Symptoms at 72 hrs

Symptoms at 72 hrs

- NSAIDs: 40.0% (P = 0.001)
- NSAIDs & colchicine: 19.2%

Results: Remission at 1 week

- **NSAI DS**: 58.3%
- **NSAI DS & colchicine**: 85.0%

P < 0.001

Results: Cardiac Tamponade

Bottom Line: Colchicine for Pericarditis

- Added to NSAID DS, colchicine reduces:
  1) Persistent or recurrent pericarditis
  2) Duration of symptoms
- Non-significant reduction in tamponade
- Rx: 0.5 – 1.0mg per day for 3 months

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Case Presentation

A 59 year-old man with a history of ischemic cardiomyopathy w/ reduced EF (32%), stage III CKD, and HTN. He has SOB, bilateral edema, bibasilar crackles, O2 sat 95% on 2L. He feels better after IV lasix. Hgb 8.7 g/dL. (last: 9.2 three mo earlier)

You continue lasix, restart his ACE-I and Beta-blocker. You consider transfusion to treat or reduce the risk of ischemia.
Which of the following is true regarding transfusions in patients with heart disease?

A. In patients who are possibly ischemic, you should transfuse to maintain Hgb > 10 g/dL
B. The ACP recommends using a restrictive transfusion strategy (threshold 7-8 g/dL) in hospitalized patients with coronary disease
C. Recent evidence establishes that a liberal transfusion strategy (threshold 9-10 g/dL) is best
D. Transfusions are harmless, there is no good reason not to
Transfusions for Heart Disease

Question: Is a liberal (threshold 9-10) vs. restrictive (threshold 7-8) transfusion strategy better in hospitalized patients with heart disease?

Design: Systematic Review

ACP Guidelines/Recommendations

- 52 studies were examined
- Most studies observational, not RCT
- Validity of observational studies was thought limited
- Many findings were conflicting or not precise
- Conclusions were few
- I will describe 2 of the most informative studies

Study #1:
Liberal (threshold = 10 g/dL) vs. Restricted (threshold = 8 g/dL)
Patients: ACS or stable CHD going to catheterization (n = 240)

Study #2:
Liberal (threshold = 30%) vs. Restricted (threshold = 24%)
Patients: Presenting with Acute MI (n = 45)

Composite: Hosp Mort, Recurrent Ischemia, New or worse CHF

Study #2:

Liberal (threshold = 30%) vs. Restricted (threshold = 24%)
Patients: Presenting with Acute MI (n = 45)

Bottom Line: Transfusion for Hospitalized patients with Heart Disease

- No consensus

- In patients with active ischemia, a liberal strategy (threshold 10 g/dL) may be beneficial

- ACP recommends a restrictive strategy (threshold 7-8 g/dL) for hospitalized patients with coronary disease

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Case Presentation

Because you think that the patient’s primary issue is acute decompensated heart failure and that acute ischemia is unlikely, you decide not to transfuse.

The next morning when you see the patient, he is unhappy that he has been placed on fluid and salt restricted diet. “I’m really thirsty and my food tastes terrible.”
Which is true about fluid/salt restriction in acute decompensated heart failure?

A. Thirst is an important sign that appropriate negative fluid balance is being achieved

B. Fluid and salt restriction lead to thirst, but lead to more rapid weight loss, fewer complications and shorter LOS

C. Fluid and salt restriction lead to thirst, but offer no apparent benefits

D. You should bring a large pitcher of water to the bedside and challenge the patient to a drinking contest
Fluid and Salt Restriction in Acute Decompensated Heart Failure

Question: Do fluid and salt restriction improve weight loss and clinical stability in patients hospitalized with ADHF?

Design: Randomized trial with blinded outcome assessments

- Participants: 75 patients hospitalized with acute decompensated HF
- Randomized:
  - Restricted: <800 mL fluid/day & <800 mg sodium/day
  - Unrestricted: no restrictions on fluid and salt intake
- Primary Outcomes: 1) Weight loss; 2) Clinical congestion score
- Secondary Outcomes: 1) Thirst; 2) 30-day readmission

Results: 3-day weight loss

3-day Weight Loss (Kg)

- Fluid/Salt Restricted: 4.42 (P = 0.82)
- Unrestricted: 4.67

Results: Clinical Congestion Score

3-day CCS Improvement

Fluid/Salt Restricted: 4.03
Unrestricted: 3.44

P = 0.47

Results: Thirst

\[ p = 0.47 \text{ (group x time)} \]

Results: Other Outcomes

Within Hospitalization:
- Dose of diuretics
- Time to oral diuretics
- Creatinine
- BUN
- Potassium
- BNP

P = ns

At 30 days:
- Weight
- Thirst
- Labs
- Clinical Congestion Score
- NYHA functional class

P = ns

Favored unrestricted

Bottom Line: Fluid & Salt Restriction in Acute Decompensated Heart Failure

- Causes increased thirst (mostly later in the hospitalization)
- No effect on weight loss or clinical congestion
- No apparent effect on medication requirements, labs or outcomes

Which is true about fluid/salt restriction in acute decompensated heart failure?

A. Thirst is an important sign that appropriate negative fluid balance is being achieved

B. Fluid and salt restriction lead to thirst, but lead to more rapid weight loss, fewer complications and shorter LOS

C. Fluid and salt restriction lead to thirst, but offer no apparent benefits

D. You should bring a large pitcher of water to the bedside and challenge the patient to a drinking contest
Case Presentation: Short Take

You are consulting on a patient who is undergoing a mechanical aortic valve replacement. The patient has been started on Dabigatran and you have been asked to manage the post-operative anticoagulation.

You wonder if Dabigatran is as good as warfarin for patients with mechanical heart valves.
Which of the following is true about Dabigatran and mechanical heart valves?

A. Dabigatran is non-inferior to warfarin for patients with mechanical heart valves
B. Dabigatran is non-inferior for preventing strokes, but carries a lower bleeding risk
C. Dabigatran has not been studied in patients with mechanical valves
D. You should continue the Dabigatran, but only if you want your patient to have a stroke or bleed!
Dabigatran vs. Warfarin in Patients with Mechanical Heart Valves


*Death, stroke, systemic embolism, or myocardial infarction*
Dabigatran vs. Warfarin in Patients with Mechanical Heart Valves

Which of the following is true about Dabigatran and mechanical heart valves?

A. Dabigatran is non-inferior to warfarin for patients with mechanical heart valves
B. Dabigatran is non-inferior for preventing strokes, but carries a lower bleeding risk
C. Dabigatran has not been studied in patients with mechanical valves
D. You should continue the Dabigatran, but only if you want your patient to have a stroke or bleed!
**Summary**

**Definitely**

1) Add Colchicine to NSAIDs for the treatment of acute pericarditis

2) Do not use Dabigatran in patients with mechanical heart valves

3) Fluid and salt restriction will increase thirst without benefiting patients with acute heart failure

**Consider**

1) A restrictive transfusion strategy (threshold ~8 g/dL) in most patients with heart disease

2) A liberal transfusion strategy (threshold 10 g/dL) in patients with acute coronary syndromes
A GOOD Day

It’s a good day.

It’s your last day as attending this month. You’ve seen interesting cases, shared some (hopefully) useful pearls, and the team was great!

Last night they admitted Mrs. J: a 58 year old woman with history of diabetes, osteoarthritis and recurrent *C. difficile* colitis

- Returned with watery diarrhea after completing a 14 day course of metronidazole.
- Labs: WBC 13K, Creatinine 2.5, non-specific UA.
Case continued…

Long acquainted with your “teachable moments”, your intern wisely did NOT order SPEP, UPEP, ANA, HIV, Hepatitis panel, or renal ultrasound to evaluate the elevated creatinine.

However, she noted that AIN are in the differential since Mrs. J had been on antibiotics and NSAIDs prior to admission.

So she ordered urine eosinophils. (Just in case.)
How do you respond to your intern?

A. Great job with thinking through the differential, but urine eosinophils are a poor test for diagnosing AIN

B. Great job. Urine eos are an insensitive but specific test for AIN – they can make the diagnosis if even minimally positive.

C. Great job, but what’s the point? Aren’t we just going to treat with IV fluids anyway?

D. I’m sorry, could you present again? I stopped listening after I realized that this is my last day.
Utility of urine eosinophils in AIN

Question: Are urine eos useful in diagnosing AIN?

Design: Case-control study using medical records of patients with AKI who were evaluated with urine eosinophils AND kidney biopsy.

- 566 patients
- 91 with biopsy-proven AIN

## Results

**AIN vs. All other diagnoses, n=566 cases**

<table>
<thead>
<tr>
<th>% Eosinophils</th>
<th>AIN</th>
<th>ATN</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>63</td>
<td>49</td>
<td>387</td>
</tr>
<tr>
<td>1-5</td>
<td>10</td>
<td>14</td>
<td>119</td>
</tr>
<tr>
<td>&gt;5</td>
<td>18</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91</strong></td>
<td><strong>69</strong></td>
<td><strong>566</strong></td>
</tr>
</tbody>
</table>
## Results

### AIN vs. ATN, \( n=160 \) cases

<table>
<thead>
<tr>
<th></th>
<th>&gt;1% cut-off</th>
<th>&gt;5% cut-off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>30.8%</td>
<td>19.8%</td>
</tr>
<tr>
<td>Specificity</td>
<td>71%</td>
<td>91.3%</td>
</tr>
<tr>
<td>PPV</td>
<td>58.3%</td>
<td>75%</td>
</tr>
<tr>
<td>NPV</td>
<td>43.8%</td>
<td>46.3%</td>
</tr>
<tr>
<td>Positive LR</td>
<td>1.06</td>
<td>2.3</td>
</tr>
<tr>
<td>Negative LR</td>
<td>0.97</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Utility of urine eosinophils in AIN

Question: Are urine eosinophils useful?

Design: Case-control study

Conclusion: Urine eosinophils are not a useful study

Comment: Nice study. Main strength is use of renal biopsy as gold standard.

How do you respond to your intern?

A. Great job with thinking through the differential, but urine eosinophils are a poor test for diagnosing AI N

B. Great job. Urine eos are an insensitive but specific test for AI N – they can make the diagnosis if even minimally positive.

C. Great job, but what’s the point? Aren’t we just going to treat with IV fluids anyway?

D. I’m sorry, could you present again? I stopped listening after I realized that this is my last day.
Case continued

Not surprisingly, the patient’s stool is positive for *C. difficile* by PCR.

As you and your resident start debate treating her with oral vancomycin for 14 vs. 21 days, your intern asks, “what about treating with a stool transplant?”
How should you respond?

A. Donor-feces infusions are just as effective as oral vancomycin, but many patients find the treatment “distasteful.”

B. Donor-feces infusions are more effective than oral vancomycin but good luck convincing your patient to try it.

C. Donor-feces infusions are less effective than antibiotics, so they only should be considered after antibiotics have failed.

D. Say, “eeew” and walk away.
Treating recurrent *C. difficile* colitis

**Question:** Is donor-feces infusion superior to vancomycin for recurrent *C. difficile*?

**Design:** RCT of 42 patients with recurrent *C. difficile* diarrhea treated with 1) vanc + bowel lavage + donor-feces infusion, 2) vanc + bowel lavage, 3) vanc only

Methods

- 42 patients ≥18 yrs with >3 mos life-expectancy & relapse of C. difficile positive diarrhea after ≥1 adequate abx course.
- 13 – Vancomycin 500 mg QID x 14 days
- 13 – Vanc x 14 days → bowel lavage
- 16 – Vanc x 4 days → bowel lavage → donor feces

Outcome: “cure” without relapse for >10 weeks


Study terminated early for *P* < .001 for primary end-point
## Results

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Vanc</th>
<th>Vanc + lavage</th>
<th>Vanc + lavage + donor-feces</th>
<th>Vanc + lavage + &gt;1 donor-feces</th>
</tr>
</thead>
<tbody>
<tr>
<td>% cure</td>
<td>30.8%</td>
<td>23.1%</td>
<td>81.3%</td>
<td>93.8%</td>
</tr>
</tbody>
</table>


- \( P = .008 \)
- \( P < .001 \)
- \( P = .003 \)
- \( P < .001 \)
Among 16 patients receiving donor-feces infusion

<table>
<thead>
<tr>
<th>Adverse effect</th>
<th>#</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constipation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Infection</td>
<td>2</td>
<td>1 UTI, 1 culture-neg fever</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>1</td>
<td>choledocholithiasis</td>
</tr>
<tr>
<td>Death</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>dizziness (presyncope)</td>
</tr>
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How should you respond?

A. Donor-feces infusions are just as effective as oral vancomycin, but many patients find the treatment “distasteful.”

B. Donor-feces infusions are more effective than oral vancomycin but good luck convincing your patient to try it.

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D. Say, “eeew” and walk away.
Treating recurrent *C. difficile* colitis

**Question:** Is donor-feces infusion superior to vancomycin for recurrent *C. difficile*?

**Design:** RCT of 42 patients with recurrent *C. difficile*

**Conclusion:** Donor feces-infusions plus a short course of oral antibiotics significantly increases the likelihood of cure when compared with standard course antibiotics

**Comment:** Small sample size due to early study termination may have exaggerated treatment effects. Potential for adverse effects remains uncertain.


*Update in Hospital Medicine*
Case continued…

As you’re walking to the next patient, your intern mentions that they had a particularly difficult time getting an IV in Mrs. J.

She tells you that he knows patient with PICCs are less likely than those with central lines to develop bloodstream infections, so she asked the PICC nurse to place one.

ANOTHER teachable moment!!!
Short Take: Risks of PICCs

A meta-analysis of 23 studies involving 57,250 patients found that PICCs are associated with significantly fewer CLABSI's than central lines, but the protective effect is stronger in the *outpatient setting* (RR 0.22, 95% CI 0.18-0.27), than the *hospital* (RR 0.73, 95% CI 0.54-0.98).

Among a subset of 13 studies that reported incidence of infection by catheter-days, PICC-associated infections were as common as central line-associated infections (IRR 0.91, 95% CI 0.46-1.79).

Case continued...

In the afternoon, you and your resident go to see Mr. F, an 81 yo admitted 4 days ago with new-onset atrial fibrillation and heart failure. You hope to discharge him today.

Your resident proceeds to explain the atrial fibrillation and cardiomyopathy diagnoses, stressing the importance of diet, follow-up and medications – especially the warfarin. She concludes by asking, “does all that make sense?” To which he replied, “yes, I think it does.”

You ask, “What did you hear?”
What was Mr. F’s most likely response?

A. Actually, I’m really not sure. Would you tell me again?

B. Well, she told me I need to take my medicines and eat right.

C. She said I have atrial fibrillation, which is an arrhythmia caused by long-standing hypertension leading to an enlarged heart. I now need to take beta-blockers and warfarin, and I should go to my AC clinic appointment next week.
Patients’ understanding of DC instructions

Question: What is the quality of DC advice? How well do patients understand DC advice?

Design: Descriptive study using prospective cohort involving patients hospitalized for PNA, CHF, ACS at a large academic hospital

- >64 yrs, English/Spanish, intact cognition, non-hospice
- Telephone interview within 1 week after discharge
  - Asked to rate hospital care, understanding of dc advice, etc.
  - Probes to verify understanding
- Responses compared to medical record “gold standard”
  - Understanding=medical professional would understand pt.

Results

- 3743 discharges >64 yrs → 592 eligible → 377 enrolled
- 171 (45.3%) had college or graduate degree

<table>
<thead>
<tr>
<th>DC instructions</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses lay language</td>
<td>71.9%</td>
</tr>
<tr>
<td>“Red Flags” advice</td>
<td>84-95%</td>
</tr>
<tr>
<td>Recommends low Na⁺ diet for CHF</td>
<td>63%</td>
</tr>
</tbody>
</table>

# Results

<table>
<thead>
<tr>
<th>DC advice content</th>
<th>Self-reported understanding*</th>
<th>Verified understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason for hospitalization</td>
<td>95.6%</td>
<td>Complete: 59.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Symptoms: 32.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>None:  8.2%</td>
</tr>
<tr>
<td>Symptoms to look for</td>
<td>83.5%</td>
<td>NA</td>
</tr>
</tbody>
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* Strongly agree/agree with understanding

Results

Other issues

• Only 32% of patients had f/u appointments at discharge.
• If advised to make f/u appointment: 56.5% did.
• 30% had <1 day notice for discharge.

Patient’s understanding of DC instructions

Question: What is the quality of DC advice? How well do patients understand DC advice?

Design: Descriptive study using prospective cohort of hospitalized patients with PNA, CHF, ACS

Conclusion: DC instructions & processes have room for improvement. Patients often falsely optimistic about their understanding of reasons for hospitalization

Comment: Only one hospital. Ideal interventions unclear, but promising approaches include education for discharge earlier in hospitalization and using “teach-back”

What was Mr. F’s most likely response?

A. Actually, I’m really not sure. Would you tell me again?

B. Well, she told me I need to take my medicines and eat right.

C. She said I have atrial fibrillation, which is an arrhythmia caused by long-standing hypertension leading to an enlarged heart. I now need to take beta-blockers and warfarin, and I should go to my AC clinic appointment next week.
At the end of the day, your resident expresses her appreciation for your teaching, and says,

“\textit{I’m thinking of becoming a generalist like you.}”

“I’d even consider becoming a hospitalist except that I don’t want to burn out.”
A meta-analysis of 9 studies using the Maslach Burnout Inventory to assess burnout among 1,390 outpatient and 899 inpatient physicians showed no significant differences.

Subscales for feelings of:

- *Emotional exhaustion* (mean $\Delta$ 0.11, 95% CI -2.40-6.61)
- *Depersonalization* (mean $\Delta$ 0.00, 95% CI -1.03-1.02)
- *Personal accomplishment* (mean $\Delta$ 0.93, 95% CI -0.23-2.09)

Summary

Consider
1. Treating recurrent *C. difficile* diarrhea with donor-feces infusion
2. Use “teach-back” early and throughout hospitalization

Definitely
1. Use PICCs only when needed, not as a PIV substitute
2. Stop ordering urine eosinophils

And…
1. Don’t believe the hype. A career in hospital medicine can be just as rewarding as one in GIM.
Case Presentation

You are admitting a 76 year-old man with stage IV lung cancer who presented with generalized weakness and was found to have dehydration and acute kidney injury. Six months before he had been in the ICU for weeks with respiratory failure.

On admission, you re-assure the patient’s wife as much as you can. She asks, “You know, he never was the same after he was in the ICU. He’s just not himself. What happened?”
How do you respond to the patient’s wife regarding the prior ICU stay?

A. He’s got metastatic cancer so we’d expect he might slowly decline over time.

B. The time in the ICU may have led to caused some long-term cognitive impairment.

C. It is really hard to say but we’re going to do what we can to help him get better.

D. Well, I’m sure the doctor’s taking care of him made some huge mistake and that’s why he is the way he is today. Hospitals just aren’t a safe place to be.
Cognitive Impairment & Critical Illness

Question: How common is cognitive impairment after critical illness & what are the risk factors?

Design: Prospective cohort study, 2 hospitals; Admitted to ICU: resp failure, cardiogenic, septic shock; Examined delirium (ICU-CAM) & sedative use as risk factors

- Excluded pts w/ cognitive impairment at baseline
- Measured global & executive function at 3 and 12 months
- Controlled for age, co-morbid, baseline mental status, etc.

### Results

- 821 patients total, follow-up > 75%
- Only 6% had any baseline cognitive problems
- Total of 74% had delirium in the hospital

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</table>

- Similar dysfunction across all ages
- Duration of delirium was associated with worse global & executive fxn at 3 and 12 months*
- No clear correlation to sedative dose

Cognitive Impairment & Critical Illness

Question: How common is cognitive impairment after critical illness & what are the risk factors?

Design: Prospective cohort study, ICU admits; 3 & 12 months follow-up

Conclusion: After ICU admission, cognitive impairment is common (regardless of age)
Delirium assoc. with cognitive impairment
No clear assoc. with sedative use

Comment: Rigorous, well-done, good follow-up;
Delirium may cause inflammation/apoptosis
Preventing delirium may have benefits;
Can counsel patients/families

Pandharipande PP, et al. NEJM. 2013;369:14
How do you respond to the patient’s wife regarding the prior ICU stay?

A. He’s got metastatic cancer so we’d expect he might slowly decline over time.

B. **The time in the ICU may have led to caused some long-term cognitive impairment.**

C. It is really hard to say but we’re going to do what we can to help him get better.

D. Well, I’m sure the doctor’s taking care of him made some huge mistake and that’s why he is the way he is today. Hospitals just aren’t a safe place to be.
Case Presentation

You communicate this to the patient and family. Despite needing some help with ADLs, you do feel the patient has decision-making capacity.

Unfortunately, two days later, he develops septic shock from a hospital-acquired pneumonia. He is intubated and started on vasopressors.

He is transferred to the ICU.
Case Presentation

You realize that you never took time to discuss the patient’s wishes regarding end-of-life care.

You meet with his wife who is his durable power of attorney (DPOA).

You wonder if the treatment decisions would be different if you had talked with him directly.
How do end-of-life discussions with a surrogate affect treatment?

A. Surrogates are more likely to defer decisions to the physician

B. The patient is less likely to receive aggressive life sustaining treatments (ventilation, tube feeds, etc.)

C. The patient is more likely to receive aggressive life sustaining treatments (ventilation, tube feeds, etc.)

D. It is hard to come up with a “joke” answer for this one but if you have to, just think of some reference to a “Death Panel”
Surrogates and End-of-Life Discussions

Question: Do end-of-life discussions with surrogates (vs. patients) lead to different treatments in cancer patients in the hospital?

Design: Retrospective review; patients w/ advanced cancer, single academic med. center

- Total of 145 patients (lung & leukemia most common)
- Chart review to determine decision-making capacity
- Compared those who made own decisions vs. surrogates

Results

- 115 pts (79%) had decision-making capacity at admit
- 46 (40%) lost decision making capacity – end-of-life discussions were done with surrogates

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All $p < 0.001$

Surrogates and End-of-Life Discussions

Question: Do end-of-life discussions with surrogates lead to different treatments?

Design: Retrospective review; cancer pts.

Conclusion: Majority of patients have capacity on admission; many lose it during the stay. Discussions with surrogates are associated with more aggressive care.

Comment: Retrospective, one hospital, chart review, possible confounders; Seems like there is a missed opportunity; Surrogate decisions may lead to more aggressive care; have the discussion.

How do end-of-life discussions with a surrogate affect treatment?

A. Surrogates are more likely to defer decisions to the physician
B. The patient is less likely to receive aggressive life sustaining treatments (ventilation, tube feeds, etc.)
C. The patient is more likely to receive aggressive life sustaining treatments (ventilation, tube feeds, etc.)
D. It is hard to come up with a “joke” answer for this one but if you have to, just think of some reference to a “Death Panel”
Short Take: Hungry Shopping & Calorie Intake

In an observational study:

In 1 group of fasting participants, half were given Wheat Thins and the other half were left hungry and then asked to shop online for food.

In another, researchers tracked “hungry” versus “full” shoppers at a grocery store.

In both groups, hungry shoppers bought a higher ratio of high calorie foods while the total number of items was not significantly different.

Short Take: Handshake vs. Fist Bump

In comparing the standard handshake to the fist bump among 10 subjects, researchers found:

- Overall surface area exposed was > 4x higher with the handshake
- Total contact time was 2.7x longer with the handshake
- With 20 encounters, total colonization was > 4x higher with the handshake

Summary

Definitely

1) Appreciate cognitive decline is common (out to 12 months) in critically ill patients
2) Avoid shopping when hungry!

Consider

1) Early goals of care conversations for patients with cancer admitted to the hospital
2) Using the fist bump in the hospital
Update in Hospital Medicine 2014

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