Things That Annoy Me

Part 2 Objectives:

1. Summarize the things that annoyed me last year and see if anything has changed
2. Describe management decisions in the treatment of cellulitis presenting to an emergency department
3. List bad electrolyte decisions in emergency care
4. Describe Phenobarbital use in alcohol withdrawal
5. Describe discharge opioid prescribing in emergency departments

Last Time

- BNP of questionable value above clinician gestalt for ruling in or out CHF
- Bio markers for serious bacterial illness in children are garbage
- Hypertensive urgency is a made up disease but high BP in ER has prognostic implications
- Tetracaine is safe for corneal abrasions as take home therapy
- Antibiotics not necessary for acute uncomplicated diverticulitis
- Contrast does not cause renal failure but renal failure is more common in sick patients who get CTs
- Tamiflu is garbage
- Dex works for very sore throats

Mrs Cellulitis

87 y.o. Male presents with isolated left leg cellulitis

- No known trigger
- Leg red and warm
- Feels otherwise well
- US for DVT negative
- What do you want to do?
- Labs? No labs?
- Route of therapy?

IV vs Oral Antibiotics for Cellulitis in the ED

- Is IV therapy superior to oral therapy?
- Evidence-based review for Emergency Medicine

Evidence Summary-Cochrane Review

- No clear superiority of IV over oral therapy
- Similar cure rates in uncomplicated cellulitis
- Evidence quality is moderate to low, but consistent
- NNT in the 200 range IV versus PO and the outcome is “better quicker” rather than treatment failure

Why IV Is Often Overused

- Perception IV is 'stronger'
- ED culture and risk aversion
- Desire to 'do something more'

When IV (or IM) IS Appropriate

- Sepsis, necrotizing fasciitis or hemodynamic instability
- Rapid progression or concern for deep infection
- Unable to absorb or tolerate PO
- Significant immunocompromise
- Failure of adequate trial oral therapy

ED Practical Approach

- Stable + non-purulent + PO tolerant → Oral antibiotics
- Moderate severity or logistics issue → OPAT (outpatient parenteral antibiotic therapy)
- Unstable or complicated → Admit
- Telling patient to come back if they aren’t better is terrible advice (be more specific)
- Clear response is present in about 90% of patients by day 3 in multiple studies

What about steroids

- NNT 4-6 for improvement 1-2 days sooner
- No change in treatment outcomes, admissions, mortality
- Prednisone 30 mg po do x 7 days
- Smaller studies using 1 dose Dexamethasone
- Best evidence is for Erysipelas

MRSA?

Everyone needs multiple antibiotics?

Nope

- MRSA is common in purulent infections
- Most purulent infections need I and D NOT antibiotics
- MRSA is NOT common in nonpurulent infections
- But wait: adding ABx does not improve outcome of THIS abscess but weak studies show a NNT 20 for prevention of recurrent MRSA abscesses

Clinical Question

- For uncomplicated non-purulent cellulitis treated as outpatient:
- Does ceftriaxone improve outcomes compared with cefazolin + probenecid?

Bottom Line

- Ceftriaxone is NOT superior to cefazolin (Ancef) + probenecid
- Both regimens have similar cure and failure rates
- Choice should be based on logistics and stewardship

Effectiveness: What Studies Show

- Randomized and observational OPAT studies show:
- Similar clinical cure rates
- No reduction in admission or ED return
- No mortality or complication benefit

Antimicrobial Spectrum

- Both cover β-hemolytic streptococci well
- Neither covers MRSA
- Cefazolin has stronger MSSA activity than ceftriaxone

Practical Comparison

- Ceftriaxone:
- • Once-daily, no probenecid
- • Minimal renal adjustment
- • Broader spectrum

- Cefazolin + probenecid:
- • Once-daily OPAT
- • Narrower spectrum
- • Excellent MSSA coverage

When Ceftriaxone May Be Chosen

- Probenecid contraindicated or unavailable
- Adherence concerns
- Renal dosing simplicity
- Operational ED / OPAT reasons

Stewardship Considerations

- Avoid unnecessary broad-spectrum therapy
- Cefazolin aligns better with antimicrobial stewardship
- Reserve ceftriaxone for specific indications

Bilateral Leg Cellulitis

Almost Never

- Resist the urge to diagnose/admit patient with bilateral leg cellulitis
- Almost NEVER happens
- Stasis dermatitis
- Usually recurrent, signs of stasis, poorly demarcated; itchy and achy rather than painful

Mr Happy Times

ETOH

- 48 yo male presents intoxicated but already showing signs of acute alcohol withdrawal
- You decide to admit him and reach for the alcohol withdrawal order set
- A smart student says “hey, what about Phenobarbital?”

Alcohol Withdrawal: Why Phenobarbital?

- Long half-life
- GABA agonism + glutamate inhibition
- Avoids benzodiazepine stacking

Phenobarbital: Systematic Review

- No increase in ICU admission
- Comparable adverse events
- Supports ED use

- WestJEM / EM Ottawa, 2025

Phenobarbital: ED Cohort Outcomes

- Lower admission rates
- Shorter ED LOS
- Less IV medication use

- JACP, 2025

High-Dose Phenobarbital (Severe AWS)

- Reduced ICU admission
- Shorter ICU LOS
- Reduced benzodiazepine exposure
- NNT 6

- JACP, 2025

Phenobarbital Dosing (Typical ED)

- Load: 6–10 mg/kg IV (IBW)
- PRN: 1–2 mg/kg IV q20–30 min
- Typical max: ~15 mg/kg
- Monitor airway & sedation

Mrs Fatigue

- 89 yo male presents from nursing home with fatigue, fever, foul urine
- You admit him with sepsis from UTI
- Nurse makes you aware of the “abnormal values in the extended lytes the resident asked for”
- Mg2+ slightly low, PO43- slightly low, Ca2+ slightly high
- Change management or outcome?

Clinical Question

- Do extended electrolytes (Mg, Ca, PO_4, ± ionized Ca) improve outcomes?
- Outcomes: mortality, ICU admission, length of stay, readmission

Bottom Line

- No evidence routine extended lytes improve outcomes
- Electrolyte abnormalities are prognostic
- Targeted testing makes more sense

How Common Are Abnormalities?

- Electrolyte abnormalities are common in ED patients
- Severity correlates with mortality and LOS
- Association ≠ benefit from routine testing (no better outcomes)
- Risk marker ≠ therapeutic intervention

Rational Ordering Evidence

- Clinical criteria predicted significant abnormalities
- Missed abnormalities did not change management or outcomes

- Annals of Emergency Medicine

Does Testing Change Management Or Outcomes?

- Electrolytes often change process of care
- Limited evidence of downstream outcome benefit
- Mostly process-of-care measures studied
- This is similar to contrast and renal failure for CTs—> a marker of severity of illness

High-Risk Subgroups

- Extended electrolytes more likely to matter in:
- Vomiting / diarrhea
- Altered mental status
- Diuretics or renal disease
- Seizures, arrhythmias, alcohol withdrawal

Electrolyte-Specific Value

- Magnesium: arrhythmias, seizures, AWS
- Ionized calcium: tetany, malignancy, massive transfusion
- Phosphate: refeeding syndrome, DKA, sepsis

What We Don’t Have

- No RCTs showing benefit of routine extended panels
- No proven mortality or LOS benefit
- Practice largely driven by habit

Choosing Wisely Canada

- Avoid routine electrolyte testing without indication
- Order based on history, exam, ECG
- Reduces low-value care

Practice Implications

- Routine extended lytes for all ED patients not supported
- Targeted ordering is safe and defensible
- Opportunity for local protocolization

Opioids At Discharge for Painful Conditions

Yes?No?

- In 1990’s we were told we did not treat pain well enough and encouraged to prescribe for everything
- Today, it is implied we are bad doctors if we ever prescribe
- What does science tell us?

Evidence?

- 0.5-2% of opioid naive patients will develop persistent opioid use (defined as continued use at 3-12 months)
- Most patients do not develop dependence
- Risks rises rapidly with DOSE, DURATION and PATIENT FACTORS
- < 3 day supply has lowest risk; risk doubles if 5-7 days given
- > 50 morphine milligram equivalents per day strongly associated with persistent use
- Providing refills strongly associated with persistent use

Patient Risk Factors

- Prior substance use disorders
- Anxiety, depression, PTSD
- Chronic pain disorder
- Low socioeconomic status
- Both older and younger patients
- Concurrent benzo use
- Back pain, headache, fibromyalgia

What Lowers Risk?

- Avoid > 3 days
- Lowest possible effective dose
- Avoid ER refills