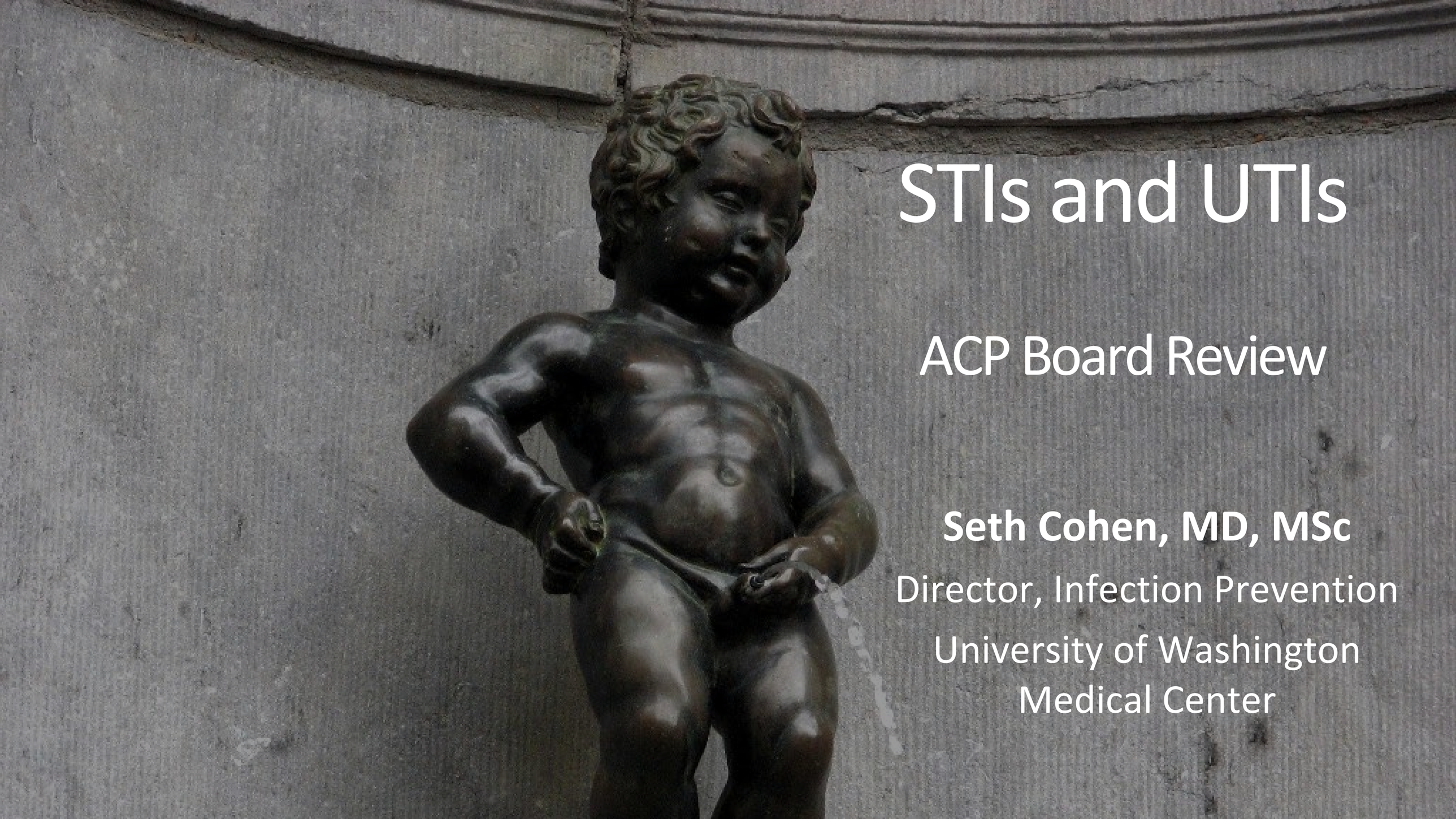

STIs and UTIs

ACP Board Review

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Disclosures

- None

When you’re stuck

- A radiologic test is never the most accurate test
- Risk factors for an infection are not as important as the individual presentation
- When in doubt, beta-lactam’s are the way to go (unless it’s a zoonosis or chlamydia)!

Cases!

Case

- 36 yo man presents to clinic with a **new rash** on his palms and soles, present for 1 week
- He denies dysuria or genital lesions
- He has had **multiple anonymous partners** over the past 6 months
- He is concerned that his **hair is falling out** and complaints of **new tinnitus** and **left sided hearing loss**

Case

- HIV negative
- Labs show alkaline phosphatase of 230, AST 35, ALT 50
- RPR is 1:256
- LP shows 3 WBC, 1 RBC, VDRL negative, protein 35, normal glucose

Which of the following is the next best step in management?

a) Doxycycline 100mg PO BID x 14 days
b) Doxycycline + Ceftriaxone 250mg IM
c) Penicillin G benzathine 2.4 million units IM x 1
d) Penicillin G benzathine 2.4 million units IM weekly x 3
e) Continuous penicillin G x 14 days

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Neurosyphilis

- Can occur at any stage (primary, secondary, tertiary)!
- CSF VDRL is ~60-70% sensitive
- LP generally >5 wbcs and elevated protein
- Symptoms: AMS, cranial neuropathy, meningitis +/- stroke, auditory sx, visual sx

Neurosyphilis

- Treat for neurosyphilis if there is concern for **otic or ophthalmic involvement**: tinnitus, hearing loss, vision loss, photopsia, uveitis
- **Regardless** of CSF abnormalities
- Penicillin allergy or pregnant?
- **Desensitize** and treat with penicillin

https://pixnio.com/media/darkness-deep-underground-limestone-rock

Case: More Syphilis

- 36 yo man presents to clinic with **sore throat** and a new **macular rash** on his trunk and palms, present for 1 week.
- He has had **multiple anonymous partners** over the past 6 months.
- He is concerned that his hair is falling out. **No other complaints**

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Early (<1 year)

Benzathine Penicillin x 1

- Primary syphilis (painless chancre)
- Early latent syphilis: asymptomatic with known timing of exposure < 1 year
- Secondary syphilis: rash, systemic symptoms, hepatitis, pharyngitis, alopecia, and/or condyloma lata

Late (>1 year)

Benzathine Penicillin x 3

- Syphilis of unknown duration
- Tertiary syphilis: cardiovascular, gummatous, tabes dorsalis and general paresis

Neurosyphilis (can occur anytime!)

Continuous Penicillin x 14 days or IM PCN + probenecid

Syphilis treatment

- Penicillin allergy: Doxy (except in pregnancy or neurosyphilis)
- Jarisch-Herxheimer reaction:
  - Headache, myalgia, fever within 24hrs of treatment.
  - More common with early syphilis

Last syphilis question (testing is confusing)

Case: More Syphilis

- 35 yo M presents with malaise and macular rash over his torso
- He reports multiple anonymous sexual encounters
- He believes he had a painless genital ulcer a few months ago
- He has no neurologic symptoms

Case: More Syphilis

- The following return:
  - HIV negative
  - Syphilis EIA +
  - RPR -
  - FTA abs +
- He has never been treated for syphilis before

What is the most likely explanation for these results?

a) He does not have syphilis

b) He has been adequately treated for syphilis in the past

c) It's too early in his infection for this RPR to be positive

d) Antibody titers are too high to be accurately detected

- Syphilis EIA +
- RPR -
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- Syphilis EIA +
- RPR -
- FTA abs +

Syphilis testing algorithm

- Increased sensitivity for early disease
- Increased false positive rate compared to RPR

- If negative: confirm with different treponemal test (TPPA or FTA-abs)

Syphilis testing algorithm

Common scenario: EIA positive & RPR negative

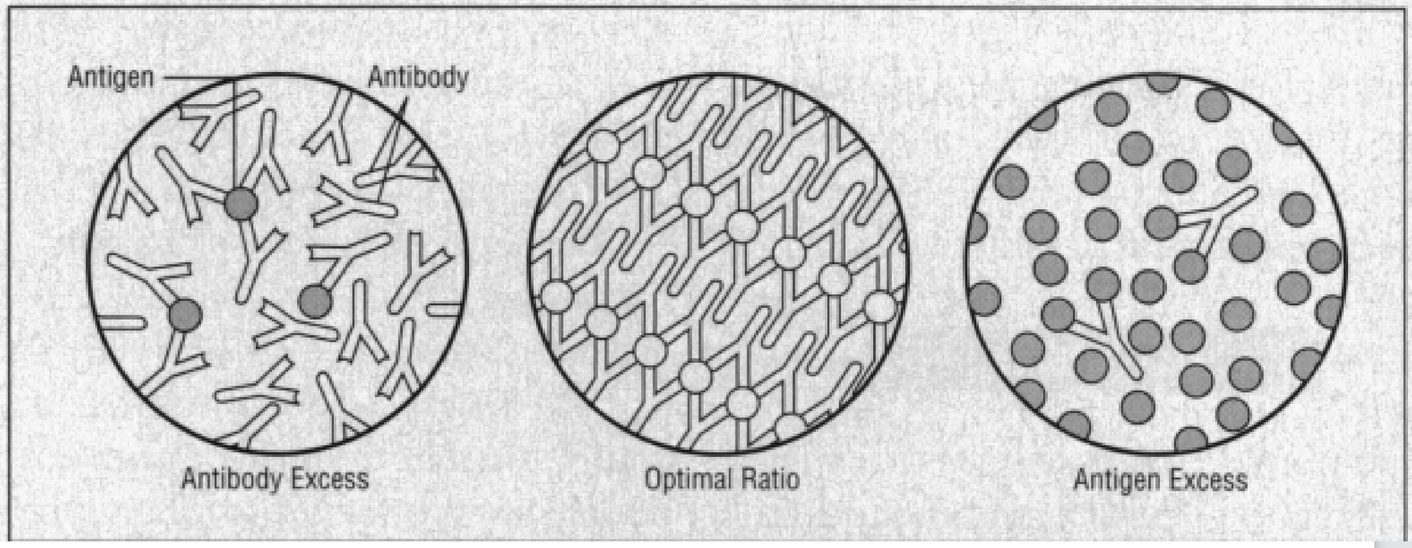
Previously treated syphilis

(most common)

Prozone Effect

Tested too early (before antibody formation)

Prozone effect



- Causes false negative RPR on the boards
- High antibody titers during secondary syphilis
- Interfere with ability to visualize antibody-antigen clumping
- Ask lab to dilute the sample

Jurado JAMA 1993

https://www.maxpixel.net/Spines-Plant-Nature-Flowers-Thorn-Rose-Flower-5405603

Case

- A 63 y.o. man with paraplegia due to spinal cord injury is admitted for increasing cough and dysreflexia. He has an indwelling urinary catheter for neurogenic bladder with recurrent urinary tract infections.
- On exam he is febrile and insensate below the umbilicus

Case

- UA: 4+ WBCs, 1+ RBCs
- Urine culture: >10^5 Candida albicans
- CXR shows RLL infiltrate
- Renal ultrasound is normal

Regarding his urine culture, what is the next best step?

a) CT abdomen/pelvis
b) Replace the foley catheter
c) Start fluconazole
d) Start micafungin
e) Fungal blood cultures

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Funguria

- Asymptomatic candiduria in adults does not require treatment
- Treat prior to urologic procedure
- Often resolves without antifungal treatment (eg catheter replacement)
- Persistent candiduria in immunocompromised patients (including DM) —> imaging to evaluate renal involvement

Case

- 39 year old man presents with rectal pain, fever and tenesmus over the last week.
- Denies diarrhea, abdominal pain
- He has had multiple anonymous partners over the past year and participates in receptive anal intercourse.
- On exam you find mild rectal bleeding, small painless perianal ulcerations and rectal tenderness

Case

- The following return:
- HIV negative
- Syphilis EIA negative
- Gonorrhea NAAT neg from rectal, pharyngeal and oral swabs
- Chlamydia NAAT positive rectal swab

What is the most likely cause of his proctitis?

a) Gonorrhea
b) Lymphogranuloma venereum
c) Chancroid
d) Acute HIV
e) Granuloma inguinale

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Acute Proctitis

- Infectious causes: Gonorrhea, chlamydia, syphilis, HSV
- Occurs primarily in MSM with receptive intercourse
- Empiric treatment (if no labs): ceftriaxone + doxy
- Doxy often given for 7 days for mild disease

Acute Proctitis

Pearl: Person with high risk behavior, bloody discharge, perianal or mucosal ulcers and a positive chlamydia NAAT should be treated empirically for lymphogranuloma venereum (LGV) = doxy x 21 days

LGV

- Chlamydia trachomatis serovar L1-L3
- Most commonly occurs in subtropical regions globally
- Large outbreaks among MSM in US
- NAATs do not differentiate LGV from other types of chlamydia that cause STI

LGV Manifestations

- Anorectal syndrome: pain, rectal discharge, fever, tenesmus +/- inflammatory mass
  - May resemble IBD
- Can also present with **painful inguinal nodes**
- Highly inflammatory (contrast with other Chlamydia)!

Case

- The family of a 90 year old F nursing home resident reports that “she doesn’t quite look right.”
- She has chronic incontinence and dysuria without change in her symptoms.
- The staff notes no mental status changes, fever or suprapubic pain.
- UA shows 3+ LE, 3+ nitrites without squamous cells. Urine culture grows >100K E coli resistant to amoxicillin.

Which of the following would be the next best step?

a) Start ciprofloxacin
b) Start nitrofurantoin
c) Start piperacillin-tazobactam
d) Supportive care
e) CT abdomen

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Asymptomatic bacteriuria

- >40-50% of nursing home patients will have pyuria and bacteriuria in the absence of infection
- UA and Urine culture have **LOW** PPV in this population

Asymptomatic bacteriuria

- The diagnosis of true UTI is driven by new lower urinary tract symptoms OR
- Constitutional symptoms without other explanation not responding to supportive measures (eg hydration)
- The boards LOVE ASB because there are clear guidelines to HOLD antibiotics

Asymptomatic bacteriuria

Pregnant people

Prior to urologic intervention with mucosal bleeding (eg TURP)

- Other indications are controversial (renal transplant, neutropenia)

Case

- A 27 year old man presents with a painful penile ulcer
- He recently engaged in sex tourism abroad
- On exam he has a 1cm x 1 cm penile ulcer with irregular borders, tender to touch and with a purulent base. Tender lymphadenopathy is present

Which of the following is the most likely diagnosis?

a) Syphilis
b) Acute HIV
c) Chancroid
d) Lymphogranuloma venereum
e) Granuloma inguinale

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a) Syphilis
b) Acute HIV
c) **Chancroid**
d) Lymphogranuloma venereum
e) Granuloma inguinale

Painful Genital ulcers

- Recurrent: HSV, Behcets, fixed drug eruption

Painless genital ulcers

LGV

- Tender inguinal nodes or proctitis

Granuloma Inguinale

Klebsiella granulomatis

- Rare, slowly progressive ulcer + granulomas in Pacific Islands, S. Africa, Caribbean

Syphilis

Chancroid

- H. ducreyi
- Dramatic decrease in US cases
- Endemic in parts of Africa and Caribbean
- Labs generally not available, dx of exclusion
- Buzz words: tender genital ulcer, suppurative inguinal lymph nodes
- Treatment: azithromycin or ceftriaxone

Case

- A 36 year old woman presents with malaise, aches in her R knee, L shoulder, L hip and R index finger. She denies vaginal discharge or changes in urination. She felt feverish but did not take her temp.
- PMHx: SLE on hydroxychloroquine
- Soc: Lives in New England, has 2 children 5 and 3 years old.

Case

- Exam: A few scattered pustules on her lower extremities, tenderness around achilles and wrist tendons. The involved joints are mildly swollen, without erythema or warmth, painful with slightly reduced ROM.
- Labs: WBC 12, Hct 36, plt 140, Cr .8, AST 80, ALT 62
- Blood and synovial fluid cx are negative

Which of the following would be most likely to make a diagnosis?

a) Viral PCR testing
b) Cervical swab for nucleic acid amplification
c) ASO antibodies
d) Urine and stool cultures
e) RPR

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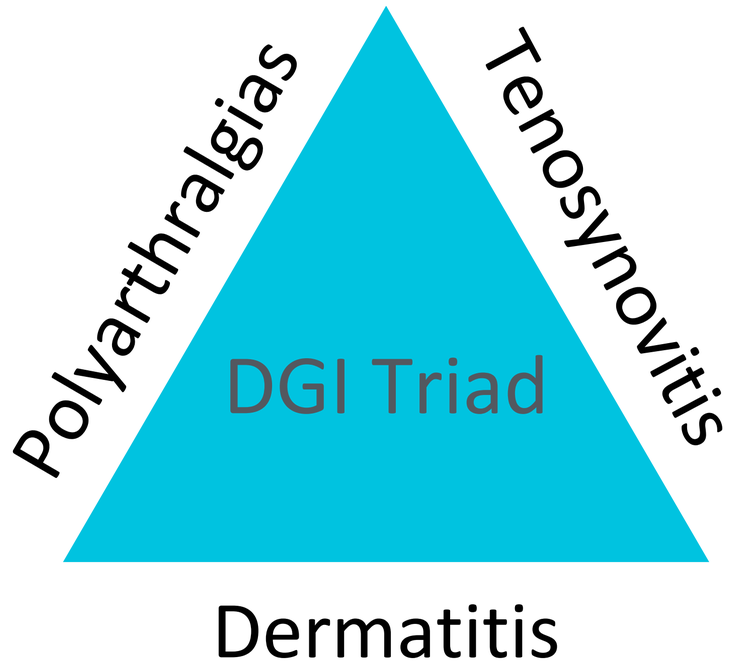
Disseminated Gonococcal infection

- Usually patients <40, but any age or sex possible
- Polyarthralgias or oligoarthritis in a young patient
- Menstruation, recent pregnancy, SLE and complement deficiencies may predispose

DGI: 2 syndromes for the boards



- Pustular or vesiculopustular lesions, few in number and asymptomatic

- Mono or oligoarthritis
- Cultures only positive ~50%

Disseminated Gonococcal infection

- Cultures of blood, synovial fluid and skin are frequently neg (possibly immune mediated)
- Subclinical urethritis/cervicitis/pharyngitis or proctitis is common and often asymptomatic

Disseminated Gonococcal infection

- Dx: NAAT of urethra, rectum, cervix or pharynx is most likely to help confirm the diagnosis in this setting
- Treatment: Ceftriaxone
- Treat the partner!
- Pearl: More than one episode of DGI (or mening infection) = work-up for terminal complement deficiency.

Tenosynovitis

Polyarthralgias

Dermatitis

Case

- 26 man presents with dysuria and penile discharge for 4 days
- Has had 1 prior episode 2 months ago
- No fevers, rash, genital ulcers
- He has had multiple female partners over the past year
- Born and raised in Seattle, no travel history

Labs

- HIV negative
- Gram stain of the discharge shows many PMNs, no organisms

Which of the following is the next best step in management?

a) Doxycycline x 14 days
b) Doxycycline + IM Ceftriaxone
c) Penicillin G benzathine 2.4 million units IM x 1
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Non-gonococcal urethritis

- Symptomatic men with urethral discharge and negative gram stain for gram negative diplococci
- Treated empirically with ceftriaxone and doxycycline
- Consider testing for trichomonas in areas of high prevalence
- Mycoplasma genitalium is a common cause of NGU

Case

- A 22 y.o. woman comes to the urgent care for evaluation of dysuria, suprapubic pain and frequency which has been present for the past 3 days.
- She has also noticed hematuria.
- Denies fever or flank pain.
- Denies vaginal pruritis or discharge.

Which of the following is the next best step in management?

a) Prescribe TMP-SMX
b) Obtain UA and cultures
c) Prescribe ciprofloxacin
d) Bimanual exam
e) Renal ultrasound

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Acute Cystitis

- >90% chance of UTI based on typical history (dysuria, suprapubic pain, frequency) and absence of vaginal sx
- Urine culture is generally unnecessary in this setting
- No such thing as uncomplicated cystitis in a man (or pregnancy)

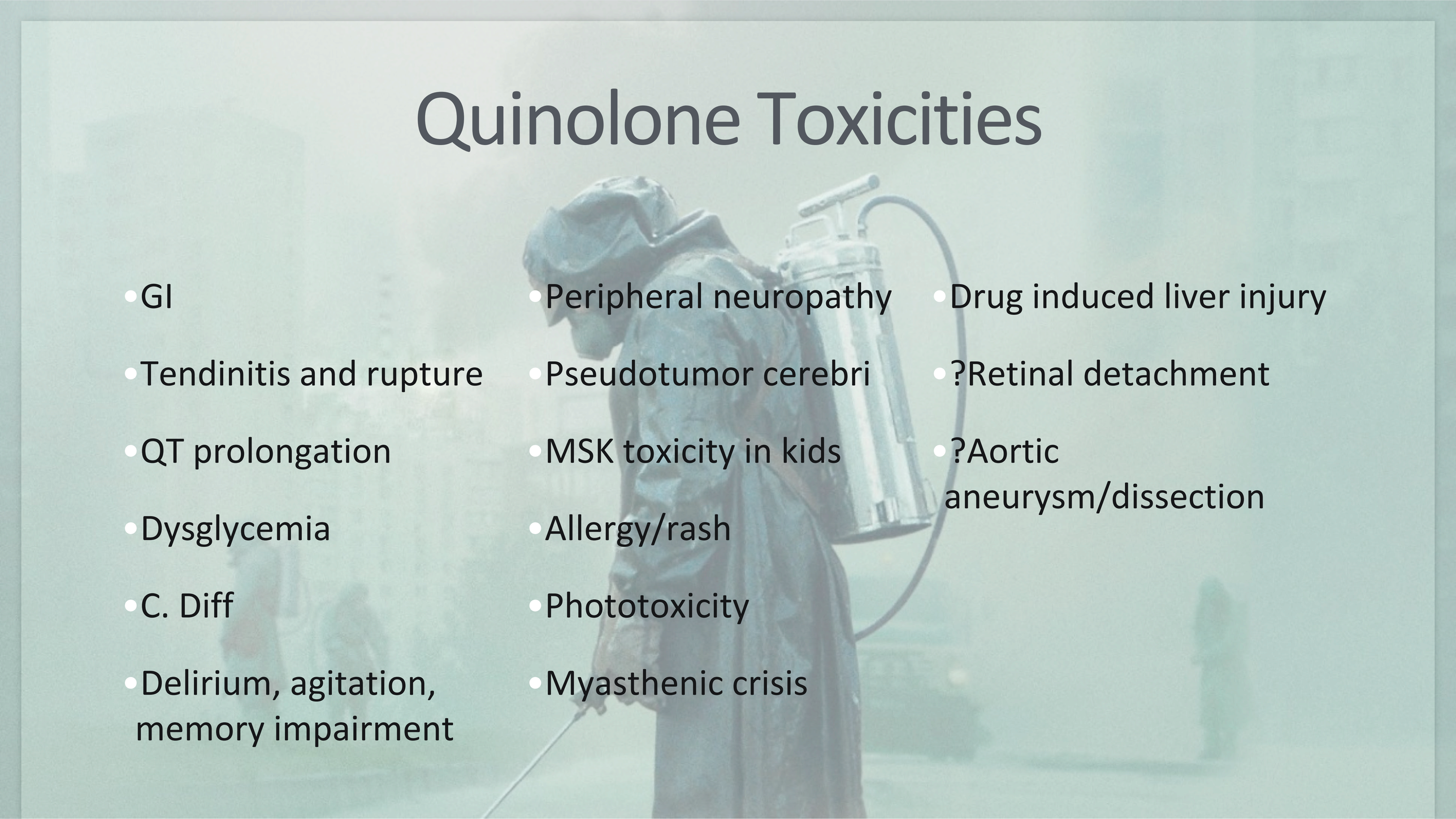
When to Culture

- Patients with suspected pyelonephritis
- Recurrent cystitis
- Risk factors for multidrug resistant organisms
- Patients with multiple allergies
- Pregnancy
- Before urologic procedures

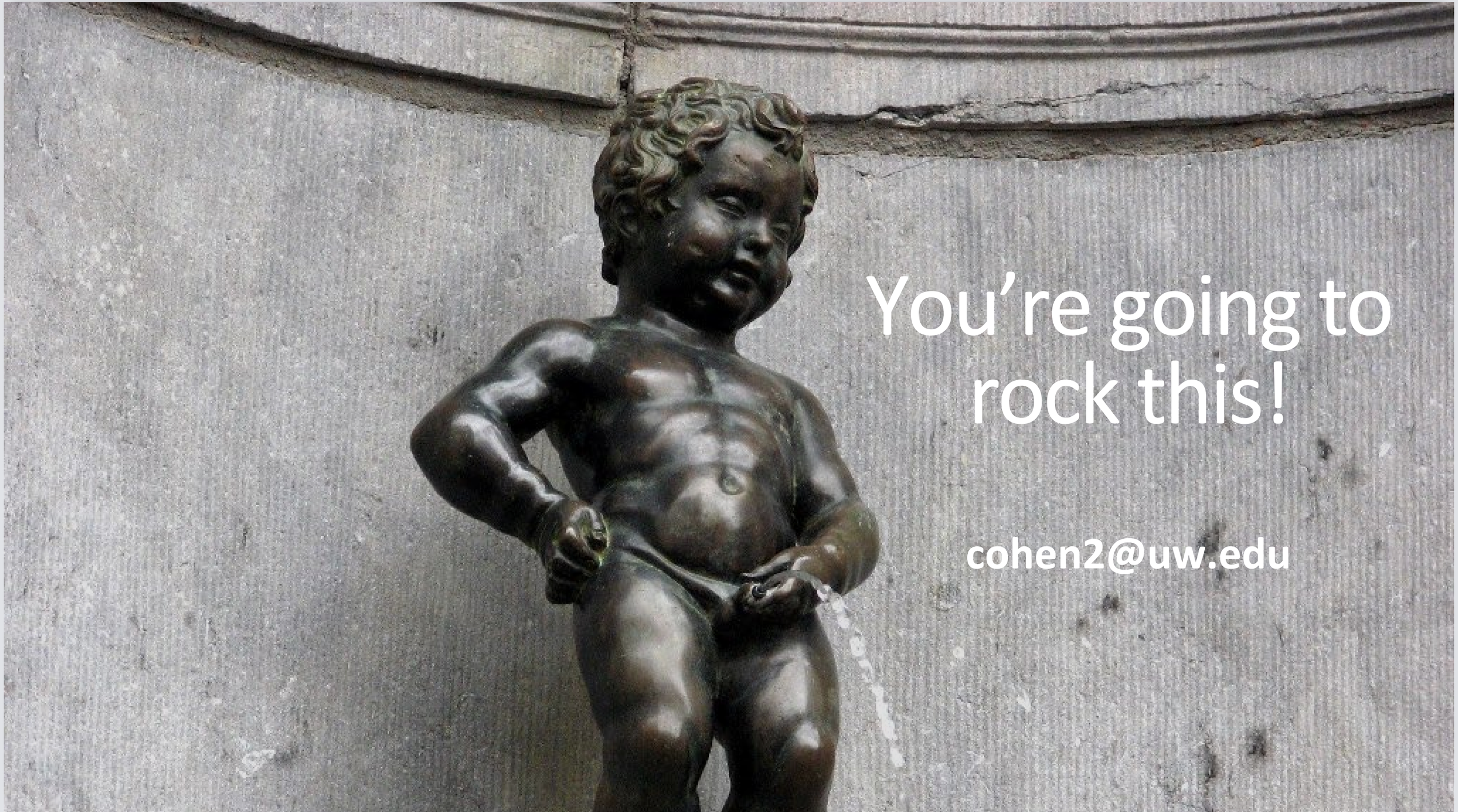
Uncomplicated Cystitis Treatment

- TMP-SMX x 3 days
- Nitrofurantoin x 5 days
- Fosfomycin x 1
- Wrong answer: fluoroquinolones

Quinolone Toxicities



- GI
- Tendinitis and rupture
- QT prolongation
- Dysglycemia
- C. Diff
- Delirium, agitation, memory impairment
- Peripheral neuropathy
- Pseudotumor cerebri
- MSK toxicity in kids
- Allergy/rash
- Phototoxicity
- Myasthenic crisis
- Drug induced liver injury
- ?Retinal detachment
- ?Aortic aneurysm/dissection



You’re going to rock this!

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