



UW TASP
tele-antimicrobial stewardship program



August 7, 2018

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Agenda

- Paul Pottinger: *Prosthetic Joint Infection Prevention*
- Case Discussions



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Prosthetic Joint Infections: *Prevention*

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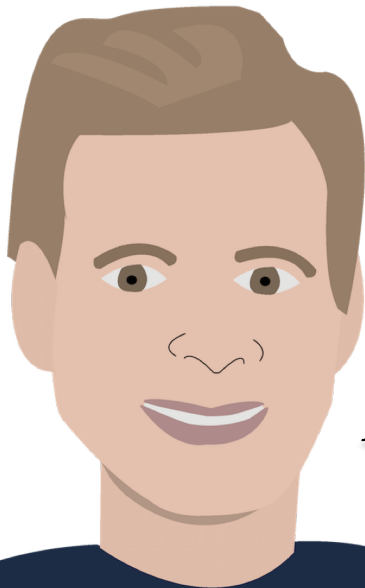
August 7, 2018

This presentation is intended for educational use only, and does not in any way constitute medical consultation or advice related to any specific patient.



Disclosures

- No financial conflicts of interest
- Everything we discuss is QI, thus protected from legal discovery under WA State Code

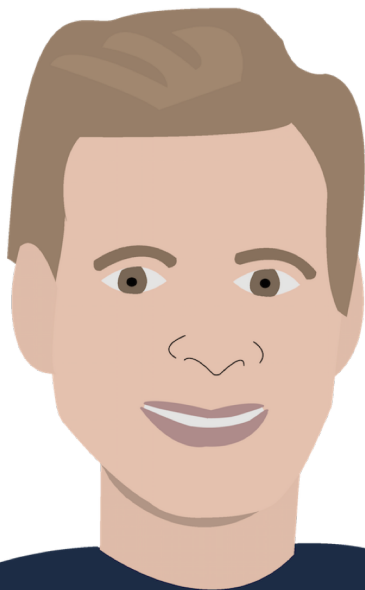


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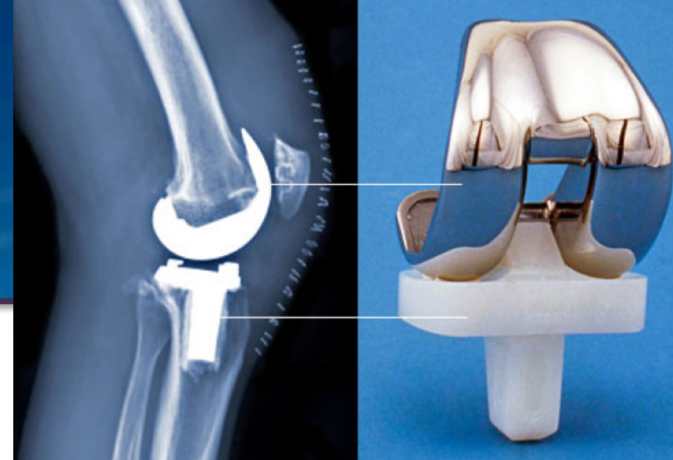
Objectives

- Definitions & Epidemiology
- Prevention
 - ✓ Pre-op
 - ✓ Peri-op
 - ✓ Lifetime



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Prosthetic Joints: *Definition & Numbers*



“Artificial material in a joint”

- “Arthroplasty” means “To repair a joint”
- Total Joint Arthroplasty (TJA): Whole thing artificial
- Hemiarthroplasty: Half native, half prosthetic

“Suuuuuuuuuper common operations”

- 1 million new hips & knees in USA annually
- Up to 4 million by 2030
- Leading indications: OA, RA, Trauma, Cancer
- Other joints much less popular (shoulder, elbow, fingers...)

Kurtz 2007

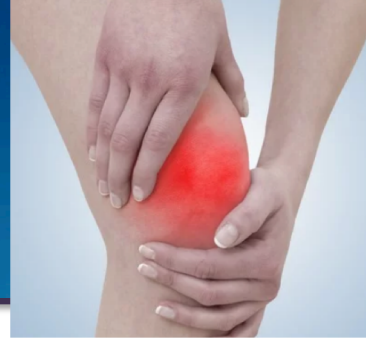


Question...

Are joint replacements
performed at your center?

- A. Yep
- B. Nope
- C. I'm not sure

Prosthetic Joints Infections: *Definition & Numbers*



“Germs causing inflammation in a joint”

- Total Joint Arthroplasty (TJA): Whole thing artificial
- Hemiarthroplasty: Half native, half prosthetic

“Infections super common too!”

- Lifetime incidence 0.5-2%... highest risk in first 2 years
- Risk: Knee > Hips
- Implications:
 - ✓ Pain, Suffering, Frustration, Joint dysfunction, Cost

Edwards 2009

Prosthetic Joints Infections: *Pre-Op Prevention*



“Cherry pick” pts with fewest risk factors

- Obesity
- DM
- Depression
- Immunosuppression
- Prior surgery—especially for prior PJI
- ASA score ≥ 3
- Smoking, Alcohol, IDU
- *S.aureus* colonization (MSSA or MRSA)

Ethical concerns: Duty to care
vs. Disclosure of Risk



Kunutsor 2016

Prosthetic Joints Infections: *Pre-Op Prevention*



“Optimize the Patients”

- Obesity: **Lose weight!**
- DM: **Improve A1C**
- Depression: **Treat it!**
- Immunosuppression: Complex... **work with rheum** etc.
- Prior surgery: Consider **referral to specialist**
- ASA score ≥ 3 : Careful preop **anesthesia consult**
- Addiction: Treat with goal of **quitting**
- *S.aureus* colonization (MSSA or MRSA): **Decolonize**

Prosthetic Joints Infections: *Pre-Op Prevention*



“Optimize the Patients”

- “PCN Allergy:” **Figure this out!**
 - ✓ 10% of Americans report a “PCN allergy”
 - ✓ **90% of these are bogus!**
 - ✓ **50% increase in SSI risk** due to using second-line abx (vanco alone, clinda, FQ)



Blumenthal 2018

Prosthetic Joints Infections:

Pre-Op Prevention

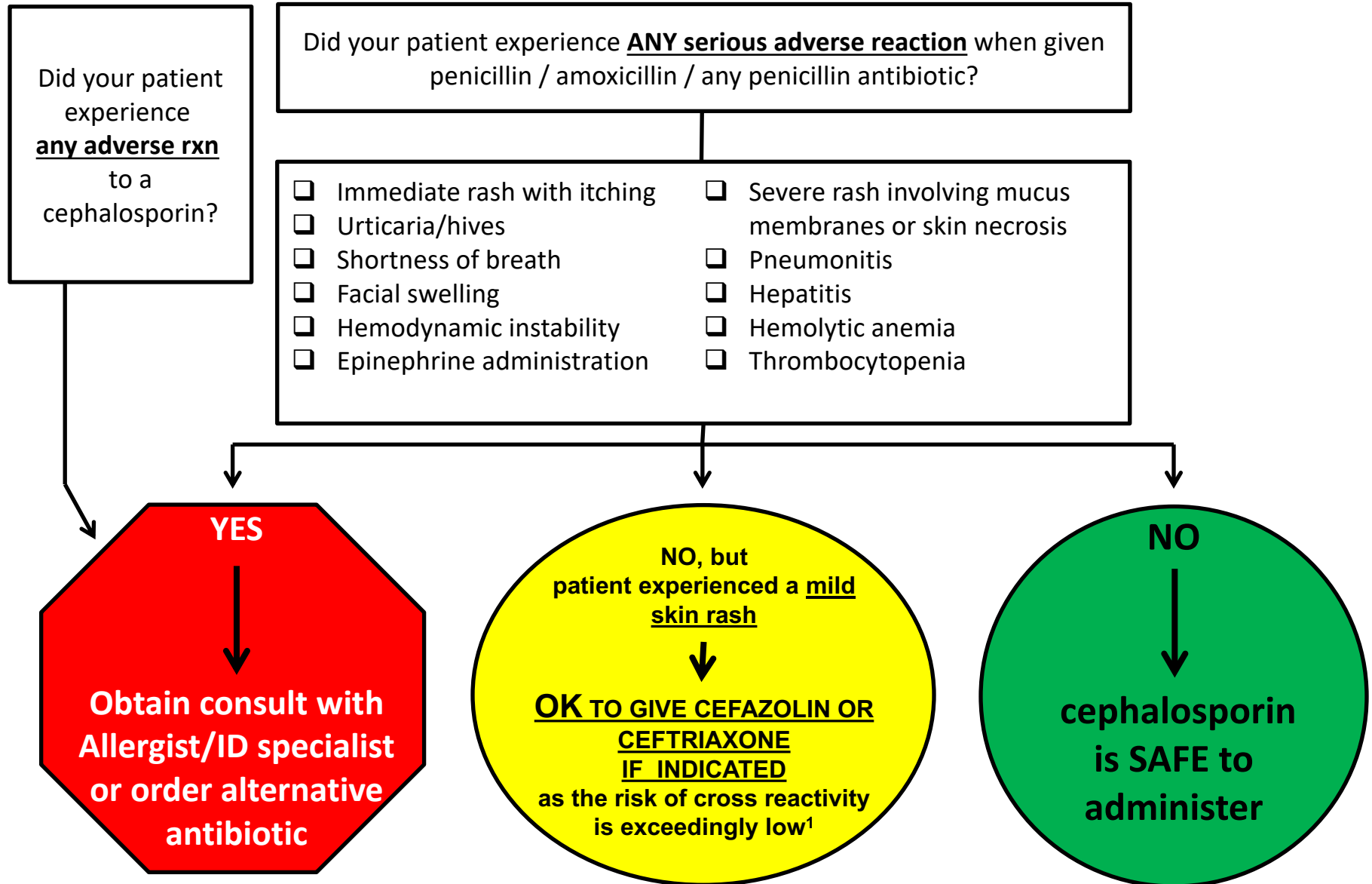


“History is key”

- WHAT? (Airway? Intubation? Itching? “Hives” used differently by many folks)
- WHEN? (Relation to dose? >10 years ago?)
- WHO? (Witnessed, recorded, historical?)
- Beware shibboleths in the EMR!
- These are elective cases... you have time to get this right!



ASSESSING PENICILLIN ALLERGY PRE-OP



Prosthetic Joints Infections: *Pre-Op Prevention*



“Urine: It’s what NOT to check...”

- **Concern: Bacteriuria may seed blood due to Foley trauma, then seed the new implant.**
- **Reality: *This is not a thing.***
- OK... it COULD happen, but is **exceedingly rare.**
- **Risk** of abx >>> potential benefits
- Cutting into the urethra? Check the pee. **Otherwise, leave it be.**
- **ALWAYS** a good idea to get that Foley out in < 24 hours!
- When it comes to ABU: “**Don’t ask, don’t tell!**”

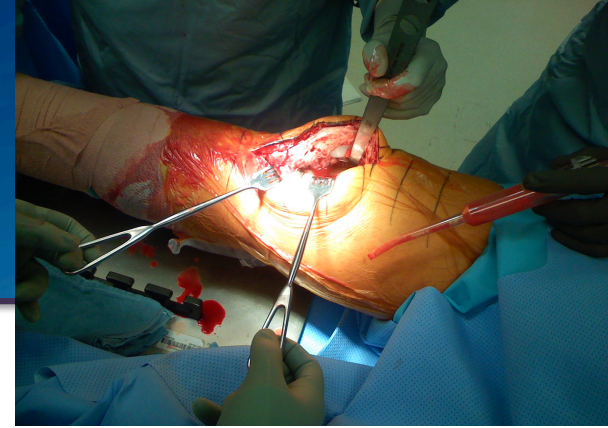
Prosthetic Joints Infections: *Peri-Op Prevention*



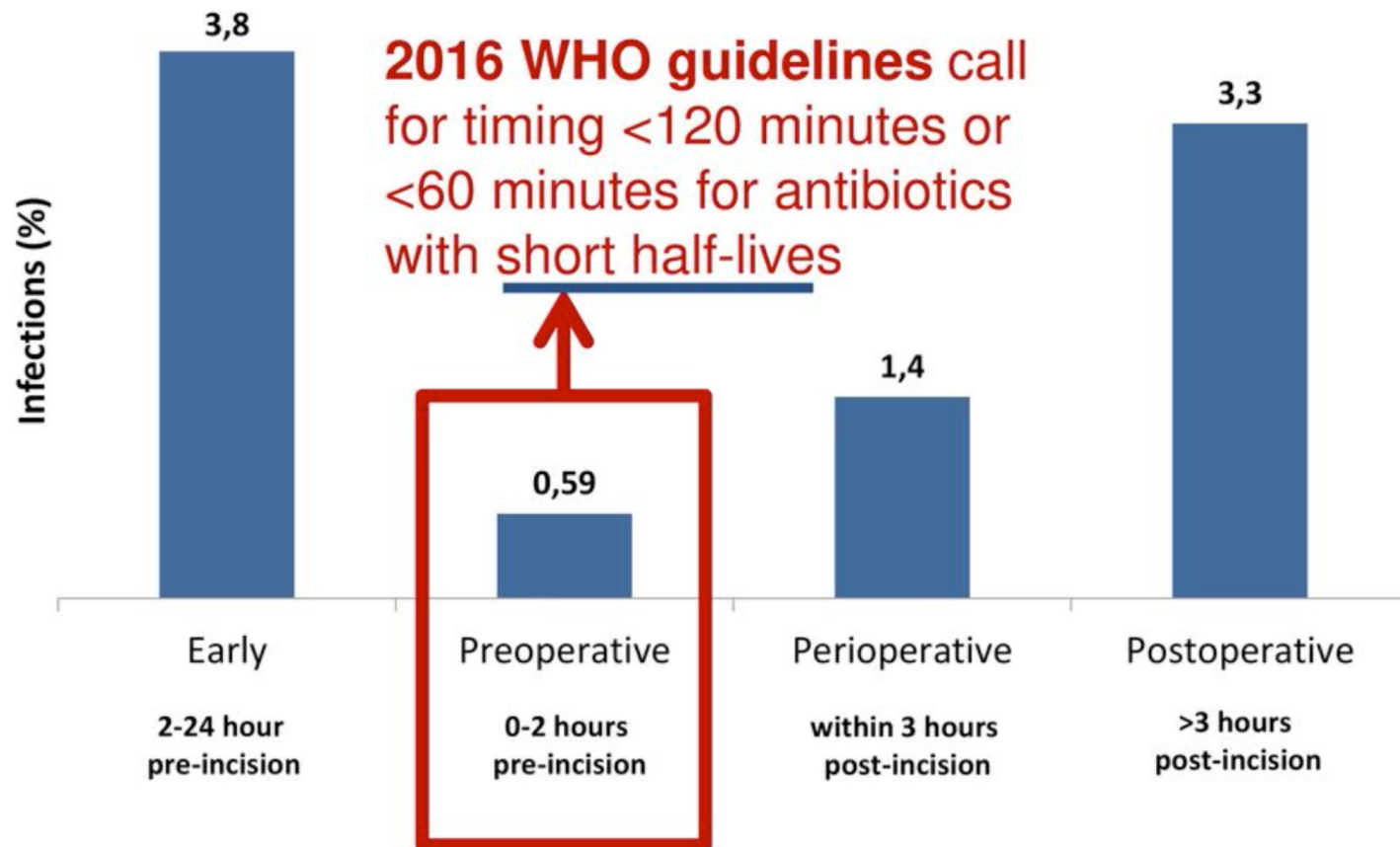
“Abx Choice Matters”

- **Cefazolin** 2gm IV (3gm if > 120kg)
 - ✓ Redose Q 3-4 hours
- If h/o MRSA colonization or infection: Add **Vancomycin**
 - ✓ 50-70kg = 1 gm
 - ✓ 71-100kg = 1.5 gm
 - ✓ > 120 kg = 2 gm
 - ✓ Redose if case > 8 hours
- If truly cephalosporin allergic: **Vancomycin** alone

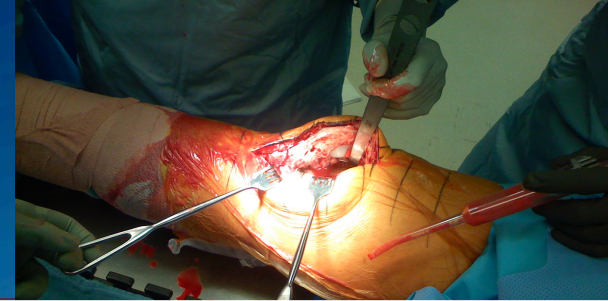
Prosthetic Joints Infections: *Peri-Op Prevention*



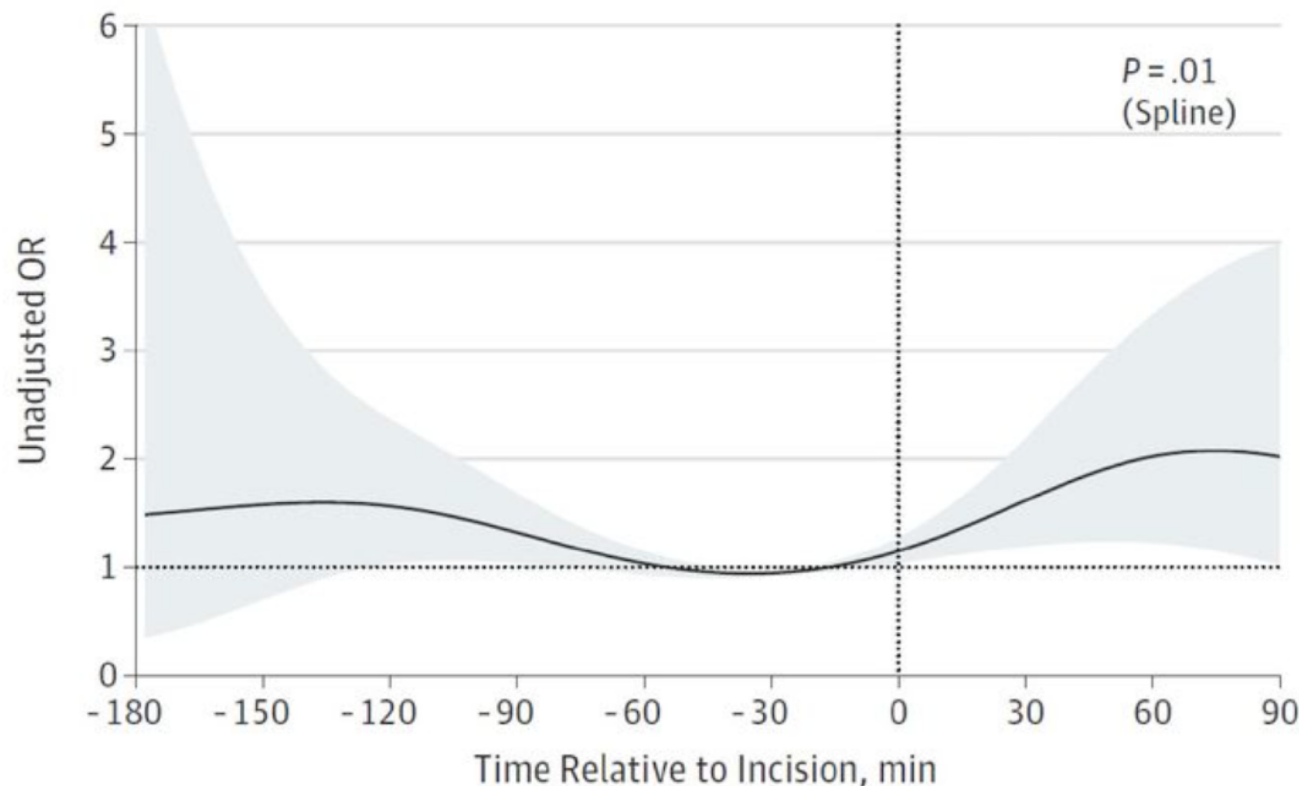
“Timing is Everything”



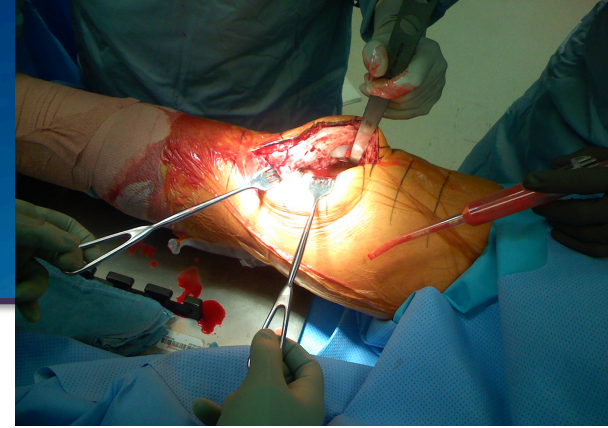
Prosthetic Joints Infections: *Peri-Op Prevention*



Odds ratio of SSI from 32,459 patients undergoing hip or knee arthroplasty, colorectal surgical procedures, arterial vascular surgical procedures, and hysterectomy



Prosthetic Joints Infections: *Peri-Op Prevention*



“Details... Details”

- Normothermic?
- Euglycemic?
- Normoxic?
- Technical aspects of TJA?
- **Duration of case?**

Prosthetic Joints Infections: *Peri-Op Prevention*



“Duration Matters”

- **NO EVIDENCE** to continue abx after incision is closed!
- WHO, CDC, SIS, MSIS agree: **NO ABX** indicated post-op!
- Got drains? No problem... and **NO ABX** indicated for drain prophylaxis!
- This is true for **all elective surgery (not just ortho)**
- **Stopping at closure:** Lower cost, less CDI, fewer side effects

Dellit 2014

Prosthetic Joints Infections: *Ongoing Lifelong Prevention*



“Patient... Heal Thyself”

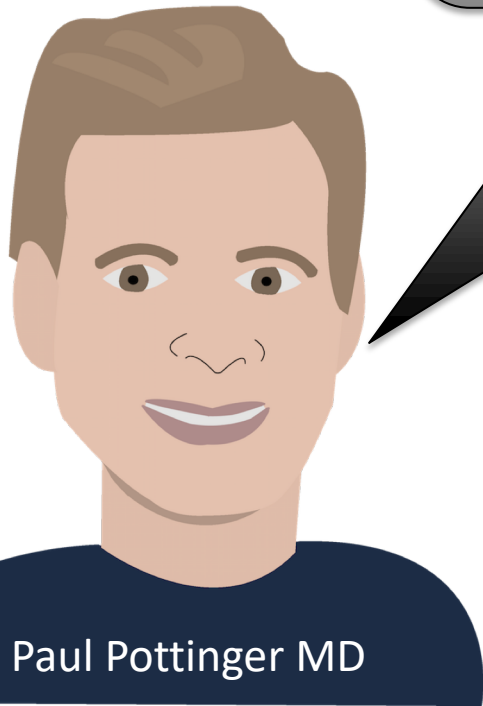
- Maintain normal BMI?
- Still not smoking?
- DM treated? Depression?
- Take care of skin & mouth?



Question...

Are oral antibiotics recommended for dental procedures in pts with TJA?

- A. Yep
- B. Nope
- C. I'm not sure



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Prosthetic Joints Infections: *Ongoing Lifelong Prevention*



“Oral health... it’s a good thing”

- Many benefits to good dental care
- Risk of PJI with oral flora is SMALL... very small.
- So small, that abx prophylaxis NOT recommended for routine dental care.
- Complicated, active periodontal dz may require abx regardless of TJA.
- Analogy: New IE guidelines





Prosthetic Joint Infection Prevention: *Conclusions*



Paul Pottinger MD

Many AS Opportunities

- ✓ No preop urine workup if asymptomatic
- ✓ “PCN allergy” should be sussed out!
- ✓ Timely abx administration in OR
- ✓ No abx for “drain prophylaxis”
- ✓ No abx for routine dental procedures

Prosthetic Joints Infections: *Diagnosis & Treatment Another Time....*



Prosthetic Joint Infection Prevention: *References*

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