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Office-Based Urology

Saturday, Sept 15th 8:30 to 10:00

Deborah Lightner, M.D.
Professor of Urology Emerita
Mayo Clinic, Rochester, MN

Covering *(or a wild ride through them, more like it).....*

- Safety- equipment, medications
- Patient Satisfaction, Communication
- Ultrasound
- Antibiotic Prophylaxis
- Antibiotic Stewardship
- Anticoagulation Prophylaxis
- Preoperative Evaluation
- Perioperative ERAS
- Asymptomatic Microscopic Hematuria
- Proteinuria, the urinalysis



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Reusing Single Use Items: DON'T

- FDA has issued guidelines stating that those who intend to **reuse items** that are approved for single-use only **will be considered to be device “manufacturers”** and will be regulated in the same manner.



Equipment Safety: Joint SUNA/AUA White Paper on the Processing of Flexible Cystoscopes:

- **Federal standards** for high-level disinfection (HLD) for these semi-critical devices:
 - Document of initial & ongoing *training*
 - *Personal protective equipment (PPE)*
 - *Working with toxic and biologic substances, report AEs*
 - *Detailed logs of daily compliance*
 - **Follow manufacturer-supplied written instructions**
 - Proper HLD assures eradication of MRSA and HIV



**Wear
protective
clothing**



Equipment Safety: Steps in Reprocessing Flexible Cystoscopes

1. Pre-cleaning
2. **Leak testing:**
 - For a rigid cystoscope, no leak test required **THAT EXPLAINS EVERYTHING**
3. Cleaning with recommended enzymatic detergent, able to digest proteins and sugars
4. Disinfection HLD with a FDA approved liquid sterilant/disinfectant
 - Manual practice: test minimal effective concentration of the active ingredient, do not top off, discard at end of reuse life
 - Automated endoscope reprocessor (AER)







Equipment Safety: Steps in Reprocessing Flexible Cystoscopes

5. Rinsing
 6. Drying, and channels purged with air until dry
 7. Storage remove removable parts, hang and/or well-ventilated.
Protocol to ensure proper processing
- **Properly processed cystoscopes can now be stored 7-10 days before reprocessing is necessary.**
 - Single use scope sheaths still require cleaning, leak testing, washing and proper storage.

Patient Safety: Cystoscopy and Patient Comfort

- **Glutaraldehyde** likely has surfactants when used in HLD, may leave **irritating** residue
- Ortho-phthalaldehyde 0.55 percent (**OPA**) & **anaphylaxis**; contraindicated in patients with **bladder cancer**
- Flexible cystoscope and the supine position!
 - Increased comfort: at your discretion

A patient's comfort is mainly about you and your staff's behavior.

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Patient Satisfaction

30% component of CMS quality measure

The dissatisfiers:

1. ineptitude (7.7%)
2. disrespect (6.1%)
3. waits (15.8%)
4. ineffective communication (7.4%)

5. lack of environmental control (15.6%)
6. substandard amenities (6.9%)

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ARS Q1:

In urologic offices, patients are most dissatisfied with:

- a) Poor parking
- b) Unclean facilities
- c) Delays in being seen
- d) Short abrupt communication styles



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Answer: C

C. Delays in being seen

According to the CMS, patients are most dissatisfied with delays in being seen. Lack of environmental control is second.



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ARS Q2:

Delivering bad news to a patient or family requires:

- a) That the conversation be brief, so that they can process it in private
- b) Establishing that you are an expert
- c) Obtaining their invitation to disclose the bad news
- d) Leaving your own emotions out of the conversation



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Answer: C

C. Obtaining their invitation to disclose the bad news

- Bad news should always be delivered in private, with the family and patient having time to absorb the information and ask questions.
- Expertise in medicine does not help the grief that accompanies bad news, and is likely to alienate the patient and family.
- Often the most compassionate response by the urologist is to express their own sadness at this news, and may encourage the expression of pain and suffering by the patient and family.



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In-Office Ultrasound

Indications for specific examinations recorded.

Components of specific examinations required.

Eg. Renal: long-axis, transverse views of upper pole, mid-portion and lower poles of the kidneys; cortex and pelvises assessed; renal length; perirenal regions

Eg. Prostate: entirely imaged in at least 2 orthogonal planes, sagittal & axial, longitudinal & coronal, from apex to base; estimated volume; focal masses; symmetry; margins; periprostatic fat; SV; vasa; perirectal space. 6 MHz or higher.

Documentation and a permanent record of images, labeled, reported in accordance with AIUM documentation standards.



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In-Office Ultrasound

Training Guidelines: Completion of residency since 2009
or ABU boarded before 2009 and 100 exams with training inclusive of at least 12 Cat 1 credits.

Maintenance of Competence in Urologic Ultrasound

- All physicians performing urologic ultrasound examinations should demonstrate evidence of *continuing* competence in the interpretation and reporting of those examinations.
- A *minimum of 50* diagnostic genitourinary ultrasound examinations per year is recommended to maintain the physician's skills.

Continuing Medical Education in Urologic Ultrasound

- The physician should complete 10 hours of AMA PRA Category 1 Credits™ specific to Urologic ultrasound every 3 years.



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ERAS[®] Principles

- Pre-op: tobacco, nutrition, chronic disease managed
- Peri-op: counseling, stoma, tubes and drains, educate to reduce anxiety, carbs continue, prophylaxis of VTE, infection, PONV, avoid sedatives
- Intra-op: MIS, anesthesia avoiding opioids, epidural support, fluids balanced, temp control, fewer drains, NGs removed
- Post-op: early to up, intake, catheters out, chewing gum, nutrition, multimodal pain relief **reducing opioids**, discharge planning
- Audits: Ongoing multidisciplinary, to ensure adherence, improvements

Note: Guidelines for perioperative care after radical cystectomy for bladder cancer: Enhanced Recovery After Surgery (ERAS[®]) Society Recommendations. Clin Nutr 2013 Dec;32(6):879-87.



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Principles for Prevention of SSI

- Bathe/shower antimicrobial/antiseptic night before
- AP to achieve -cidal concentration at incision
- Skin prep alcohol-based \bar{x} where contraindicated
- No additional antibx after closure for clean or clean-contaminated (LE IA)
- No topical antimicrobials (LE 1B)
- Glycemic control, thermoregulation & oxygenated
- Do not withhold transfusion as means to \downarrow SSI (LE 1B)

Berrios-Torres SI, Linscheid CA, CDC Prevention SSI, 2017



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SSI Risk Factors

Ban KA, Minei JP; ACS and SIS Guidelines, Update, 2016

Other points:

1. Combination mechanical & po antibx bowel prep is recommended for elective colectomies. Full circle!
2. Double gloves. LE weak.
3. Consider impervious plastic wound protector for open abd surgery. LE weak.
4. Triclosan antibacterial suture for wound closure for clean and clean contaminated cases.
5. No strong evidence on pp wound cares.

Risk Factor
Intrinsic (patient-related)
Non-modifiable
Increased age
Recent radiotherapy
History of skin or soft tissue infection
Modifiable
Diabetes
Obesity
Alcoholism
Current smoker
Preoperative albumin <3.5 mg/dL
Total bilirubin >1.0 mg/dL
Immunosuppression
Extrinsic (procedure-related)
Procedure
Emergency
Increasing complexity
Higher wound classification
Facility
Inadequate ventilation
Increased operating room traffic
Contaminated environmental surfaces
Non-sterile equipment
Preoperative
Pre-existing infection
Inadequate skin preparation
Inappropriate antibiotic choice, timing, and weight-based dosing
Hair removal method
Poor glycemic control
Intraoperative
Longer procedure duration
Blood transfusion
Breach in asepsis
Inappropriate antibiotic re-dosing
Inadequate gloving
Inappropriate surgical scrub
Poor glycemic control

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Antibx Prophylaxis and Antibiotic Stewardship

[Current BPS is being revised]

MUST ↓antibx overuse, resistance, AE, costs and ↑outcomes (SSI & systemic infections)

Shortest course, appropriate antibx

Risk/Benefit determined by:

- virulence
- patient factors
- procedural factors
- morbidity of a consequent infection
- AE



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Regarding Office Antibx Prophylaxis

Antibx used only at time of risk, appropriately targeting likely pathogens and *their anticipated resistance patterns*.

What routine procedures need prophylaxis?

- *In healthy adults and in the absence of infectious signs and symptoms*, antibiotic prophylaxis is not recommended for routine cystoscopy nor UDS.
- In the “non-index patients” undergoing cystoscopy and UDS:
 - Risk is as yet undetermined for subpopulations, but ↑, NGB, ↑ PVR, asymptomatic bacteriuria, immunosuppression, over 70 yo, indwelling devices, on CIC, **SUFU LE III (weak)** (Cameron AP, Campeau L, et al 2017)
- Sulfa-TMP, first line. Not quinolones.

More on Antibx Prophylaxis for Office Procedures

Always used for prostate biopsy!

- Quinolones for <24 h.
- Assess risk for multiply resistance organisms: local antibiogram, recent international travel, antibx within 6 months, prior biopsy or infection, healthcare worker, etc.

The Prevention and Treatment of the More Common Complications Related to Prostate Biopsy Update. AUA White Paper, updated 2016.

Quinolones?

Risks ↑:

FDA 2013: The risk of *peripheral neuropathy* associated with fluoroquinolones taken by mouth or injection *should be relayed* to patients. This potential serious side effect may be permanent.

FDA 2008: Increased risk of developing tendinitis and tendon rupture in patients taking fluoroquinolone antimicrobial drugs for systemic use. Advise patients if AE occur.

Benefits ↓: quinolones resistance patterns for e.coli >25% in many communities, rendering them increasingly inappropriate for prophylaxis



ARS Q3:

Prophylactic antibiotics should be given:


- a) For asymptomatic bacteriuria
- b) Limited to the period when bacterial invasion is likely to cause an infection
- c) To patients on clean intermittent catheterization
- d) To patients with indwelling catheters
- e) To reduce the risk of a recurrent UTI

Answer: B

B. Limited to the period when bacterial invasion is likely to cause an infection

By definition, prophylactic antibiotics are only given for the period during which there is a risk of bacterial invasion leading to an infection. The antimicrobial prophylaxis agent used for prophylaxis should be administered at a time appropriate for the establishment of the bactericidal concentration of the agents in the tissues at the time the incision is made, and discontinued after the case is closed.

Prophylactic antibiotics ^{NOT} should be given:
^

- a. For asymptomatic bacteriuria.
- b. Limited to the period when bacterial invasion is likely to cause an infection.
- c. To patients on clean intermittent catheterization.
- d. To patients with indwelling catheters.
- e. To reduce  at UTI.

“Our” GU bugs have Antimicrobial Resistance

- **GNB:** extended spectrum β -lactamase (ESBL) producers; carbapenem-resistant enterobacteriaceae (CRE) including *e coli* and *klebsiella* *which kill up to 50% with sepsis*; MDR *pseudomonas* & MDR *acinetobacter* also acquire resistance easily.
- **GP:** vancomycin-resistant enterococci; methicillin-resistant *s. aureus*.
- Plasmid-spread to other organisms → yielding resistance to quinolones, sulfonamides and aminoglycosides.
- Fluconazole-resistant candida.

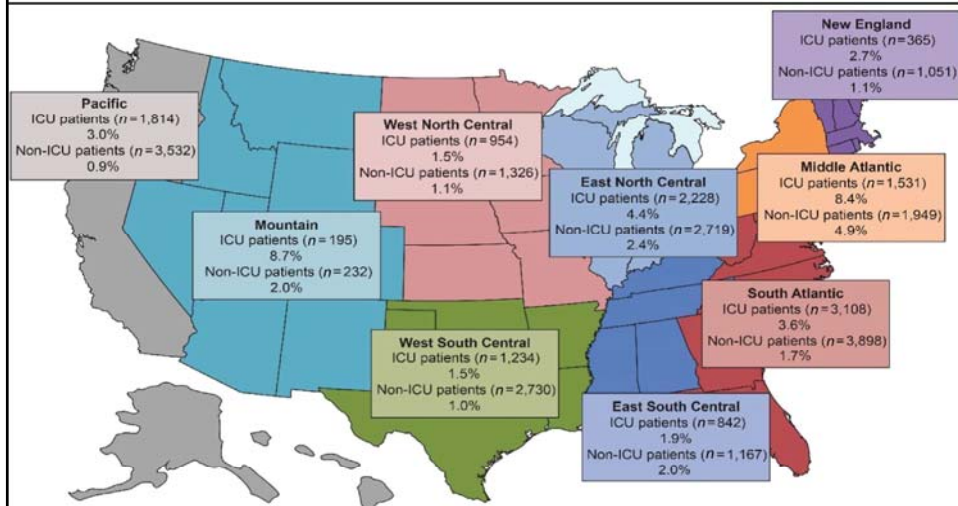
THINKING OF
YOU
LOTS AND LOTS
AND LOTS AND LOTS
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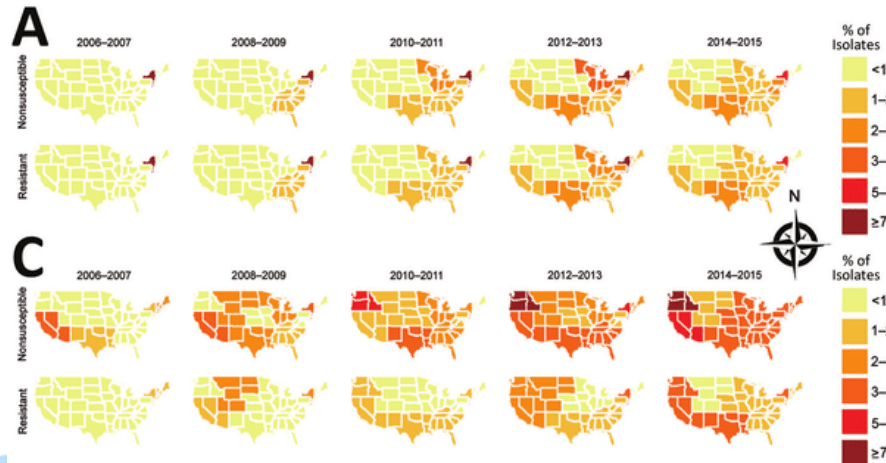
Just for CRE:

Emerging trends in epidemiology and management of infections caused by carbapenem-resistant Enterobacteriaceae, Martirosov DM, Lodise TP: Dx Microb and ID, 2016



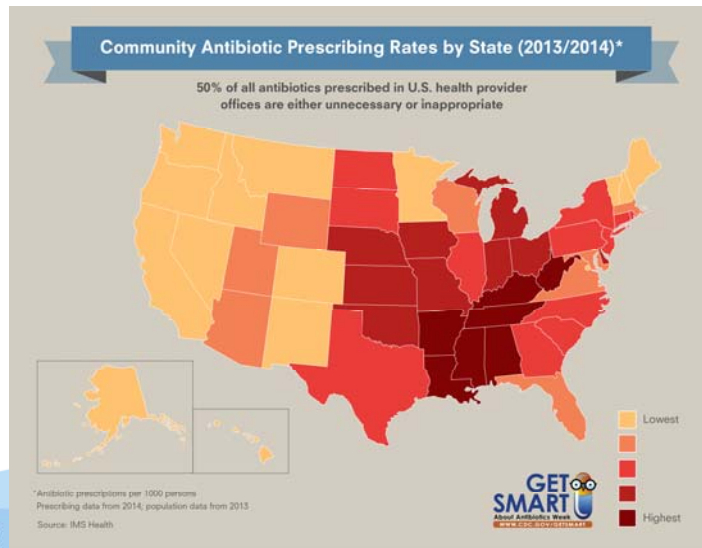
Abbreviations: CRE = carbapenem-resistant Enterobacteriaceae; ICU = intensive care unit. Indications include cUTI, cIAI, hospital-associated pneumonia, and BSIs.

Increase # of isolates with resistance,
 non-susceptibility patterns in some but
 Increase MR % in all isolates



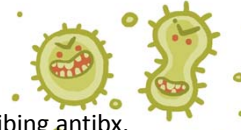
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Poor Stewardship is Highly Variable, as Measured by
 Geography (and not on best practices)



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Antibiotic Stewardship



You must consider how risky a disease before prescribing antibx.

- Do not treat asymptomatic bacteriuria ^{nor} non-infectious prostatitis!
- Stop giving antibiotic prophylaxis for rUTIs.

Stop antimicrobials immediately after appropriate short period of prophylaxis.

Treat recurrent/persistent & proven infections with *another class* of antibx.

Shorter courses; never longer nor repeated without due cause.

For serious infections, know the local antibiogram to start tx.

Educate patients on harms of overuse.



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Antibx Stewardship Also Includes:

- Prior authorizations.
- Audits.
- Pharmacy-driven interventions.
 - Antibiotic “time-outs”:
Does this patient need this antibx at this time? For how long?
 - IV to oral, dose optimization.
 - Alerts for duplicative coverage.
 - Drug interactions.



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Other ID Tidbits

C. Diff:

- Stronger strain leading to more deaths; 400% increase in deaths over past 7 years
- Antibx use increases risk 7-10x while on the drug *and during the month following.*
- *Hand sanitizer does not kill C. difficile*, and hand washing may not be sufficient (CDC). Bleach!

CAUTI:

- Only when and as long as necessary; free flowing; limit irrigations.

Hooton, TM, Bradley, SF, et al. IDSA. Dx, prevention, and tx of catheter-associated urinary tract infection in adults: Internat. Clinical Practice Guidelines *Clin Infect Dis*. 2010



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Infection Prevention (IP) Competency: Are You and Your Practice Competent?

Written IP policies and procedures based on Guidelines from CDC/HICPAC, etc.

- Reassessed at least annually and as needed
- Includes patient education regarding signs & symptoms of infection after procedures, & how to contact
- Hand hygiene education & *audits*
 - Before and after contact, after removing gloves, after contact with objects around the patient
- Environmental cleaning & *audits*
- Do not reuse single use items



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DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Disease Control and Prevention

Asymptomatic Microscopic Hematuria (AMH)

AUA Guidelines, reviewed and validity confirmed 2016

Gross and/or symptomatic hematuria not the issue here!

Asymptomatic microscopic hematuria

- Not on a dipstick urine! AMH is > 3 RBC/HPF in a properly collected specimen in the absence of an obvious benign cause.
- Prevalence in broad screening populations is about 6%; malignancy in selected 3.6%.
- Don't forget Hx and PE **with BP, & estimate of renal function**, evaluate for benign causes and assess for risks (IVS, tobacco, chemical exposures)
- Active urinary sediment ^{or} anticoagulants, antiplatelet drugs don't preclude need for GU evaluation. LE C (weak)

- CTU preferred, MRI when necessary, U/S with retrogrades (Optional?+)
- **Cysto** ≥ 35 yo* LE C (weak) . At your discretion, <35.
No blue light.
- **No biomarkers** should be obtained.
- **No cytology** required (without risks).
- Negative eval: 2 more annual U/As and if (-), stop. Continued + AMH: *consider* repeat eval within 3-5 yrs (Expert Opinion) for malignancy yield of 2.8%.

* In 3762 patients with AMH, 97% of malignancies were in those over 35 yo. AUA Guideline

+ Halpern, JA. JAMA Int Med 2017 referring a recent cost /case study



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ARS Q4:

40 yo with asymptomatic hematuria
should have this performed:

- a) Blood pressure check
- b) Urine FISH
- c) Urine cytology
- d) Urine NMP22
- e) Blue light cystoscopy



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Answer: A

A. Blood pressure check

Often omitted, the patient with asymptomatic hematuria should be evaluated for hypertension, commonly associated with renal disease.

ARS Q5:

For persistent asymptomatic microscopic hematuria after a negative evaluation, the patient *should* have:

- a) Yearly urinalyses
- b) Urine FISH
- c) Urine cytology
- d) Multiphase CT
- e) Referral to nephrology

Answer: A

A. Yearly urinalyses

Yearly urinalyses are indicated in the patient who continues to have microscopic hematuria with consideration to a repeat evaluation within 2 to 3 years.



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Antithrombotic Therapy and the Prevention of Thrombosis: Perioperative Management

- Those who require temporary interruption of a VKA before surgery, stop VitKAntags* approximately 5 days before surgery *instead of* stopping VitKAntags a shorter time before surgery. Grade 1C.
- Those who require temporary interruption of a VKA before surgery, **resume VitKAntags approximately 12 to 24 h after surgery (evening of or next morning) and when there is adequate hemostasis** *instead of* later resumption of VitKAntags (Grade 2C).
- In patients with a mechanical heart valve, a fib, or VTE at high risk for TE, **bridging anticoagulation**. Discuss with the patient **the risk-benefit of perioperative bleed vs a TE**.

*such as warfarin...



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Guyatt GH, Aki EA et al. Chest, 2012.

Anticoagulation and Antiplatelet Therapy in Urologic Practice

- Patients with a **coronary stent receiving dual antiplatelet therapy and requiring surgery, defer surgery**
 - for *at least 6 weeks* after placement of a bare-metal stent
 - for *at least 6 months* after placement of a drug-eluting stent***Instead of undertaking surgery within these time periods*** (Grade 1C).
- Patients requiring tx-dose of IV UFH, **stop UFH 4-6 h** before surgery (Grade 2c)
- Patients requiring tx-dose sc LMWH, **last dose of LMWH ~ 24 h** before surgery (Grade 2c)



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Culkin DJ Exaire EJ, et al. ICUD/AUA Review 2014.

Anticoagulation and Antiplatelet Therapy in Urologic Practice

- Patients undergoing **high-bleeding -risk surgery (include TURBT, TURP, partial nephrectomy), resume LMWH 48-72 h after surgery** (as opposed to 24 h for uncomplicated ureteroscopy, laser prostate procedures, prostate biopsies)
- **Oral AC/AP medications should be discontinued prior to percutaneous nephrostolithotomy and patients bridged where deemed necessary.** Timing of cessation and re-initiation of oral AC/AP with or without bridging therapy should involve multidisciplinary decision plan with stratification according to risks.



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Culkin DJ Exaire EJ, et al. ICUD/AUA Review 2014.

Anticoagulation and Antiplatelet Therapy in Urologic Practice

- **For patients on clopidogrel or aspirin for secondary stroke prevention, especially for recent events, it is recommended to continue aspirin through the perioperative period.**
- Similarly, for those patients with cardiac risk factors on low-dose aspirin alone, this can be continued in perioperative period without increased risk of major bleeding.



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Culkin DJ Exaire EJ, et al. ICUD/AUA Review 2014.

Anticoagulation and Antiplatelet Therapy in Urologic Practice

- **Prostate biopsy can be performed safely for the patient on low dose aspirin with a risk of minor bleeding approximately 1/3 higher than controls.**
- In general, the perioperative continuation of aspirin may be associated with a minor risk of increased bleeding, but the transfusion rate is not increased and the consequences of that bleeding are minor with the probable exception of transurethral resection of the prostate.



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Culkin DJ Exaire EJ, et al. ICUD/AUA Review 2014.

ARS Q6:

A prostate biopsy is indicated in a patient with a recent drug-eluting cardiac stent. Proper preparation for a prostate biopsy *in this* patient requires that:

- a) Clopidogrel may be stopped at 3 months after the drug eluting stent and resumed thereafter
- b) The biopsy be performed with LMWH bridging
- c) The biopsy be performed continuing the aspirin
- d) The biopsy be deferred for 12 months after the stent is deployed



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Answer: D

D. The biopsy be deferred for 12 months after the stent is deployed

The risk of a Major Adverse Cardiac Event (MACE), including death, is too great to stop, bridge or otherwise change the antiplatelet therapy (DUAT) during the 12 months after a drug-eluting stent is deployed.



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ARS Q7:

An anticoagulated patient with a mechanical heart valve presents with a ureteral stone, and needs intervention. The INR is therapeutic. Ureteroscopy is:

- A. Contraindicated in the setting of anticoagulation. The patient should be treated with a long-term ureteral stenting.
- B. Indicated, when consistent with AUA Guidelines for the treatment of a ureteric stone. Ureteroscopy does not require discontinuation of anticoagulants.
- C. Indicated, when consistent with AUA Guidelines for the treatment of a ureteric stone, and the patient bridged with LMWH for the procedure.



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Answer: B

B. Indicated, when consistent with AUA Guidelines for the treatment of a ureteric stone. Ureteroscopy does not require discontinuation of anticoagulants.

- If the stone needs to be treated, uncomplicated ureteroscopy does not require the discontinuation of AC.
- Percutaneous lithotomy requires bridging in this instance.



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Proteinuria

- On dip, always repeat.
- Dx: >2g/24 h⁺; UPr/Cr ratio
- Benign: fever, intense workouts, dehydration.
- Falsely + dipstick: alkaline, dilute or concentrated, gross hematuria, white cells.

Origin	Glomerular	Tubular	Overflow
	1 ^o glomerulonephritis ⁺ or 2 ^o as in DM	2 ^o to antibx, HT, gout	Multiple myeloma [#] , leukemias
	Permeability		overflow

*Tamm-Horsfall mucoprotein from DT
 + proteinuria >4 g = glomerular origin; albumin and >65K daltons
 # LMW IG appx 20K daltons, pass easily

The Urinalysis

- To evaluate for a possible infection in a female, a catheterized urine sample *should always* be obtained.
- In men with chronic UTIs, four aliquots of urine *are obtained*. These aliquots have been designated Voided Bladder 1, Voided Bladder 2, Expressed Prostatic Secretions, and Voided Bladder 3 (VB1, VB2, EPS, and VB3).

Why important? Because a + VB3 is often considered evidence of bacterial prostatitis when the accompanying voided urine has not been examined.

- Cloudy urine is most commonly due to phosphaturia.
- Leukocyte esterase activity indicates the presence of white blood cells... *The presence of nitrites in the urine is strongly suggestive of bacteriuria* (as GNB convert nitrates to nitrites). NB: The major cause of false-positive leukocyte esterase tests is specimen contamination.