Down the Drain: Overuse of Screening Preoperative Urinalyses in Orthopedic Surgeries

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Introduction

- Asymptomatic bacteriuria (ASB) is a common finding.
- No benefit in treating ASB to reduce risk of surgical site infection or prosthetic joint infection.
- IDSA recommends against screening for and treating ASB in patients undergoing non-urologic surgeries.
- Existing practice at UC San Diego has been to recommend a preoperative urinalysis (UA) on every patient undergoing an orthopedic surgical intervention.
- Goal: quantify the baseline rate of this low-value practice and identify opportunities to reduce unnecessary antibiotic treatment of ASB.

Methodology

- Retrospective chart review
- Adults admitted to UCSD for surgical repair of hip or femoral fractures between January - December 2020
- Data collected:
  - Presence of documented recommendation for a screening UA
  - Concern for infection or renal injury
  - Whether antibiotics were administered
- Baseline rates of preoperative UA ordered for screening purposes
- Rates of positive urine cultures and antibiotic administration to those with ASB
- 30-day complications from antibiotic administration or from withholding antibiotics for asymptomatic bacteriuria

Results

Figure 1: Results of preoperative urinalyses and rates of antibiotic administration.

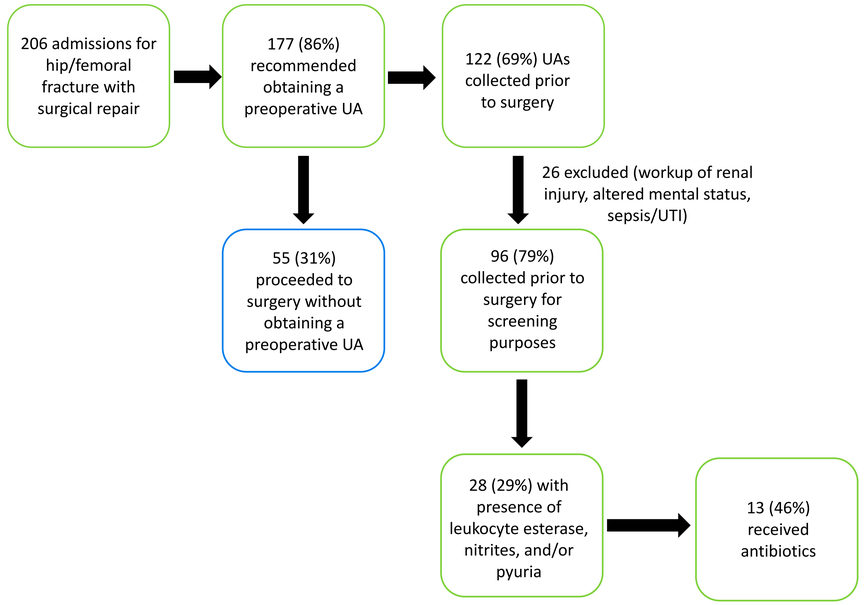


Figure 2: Rates of antibiotic administration.

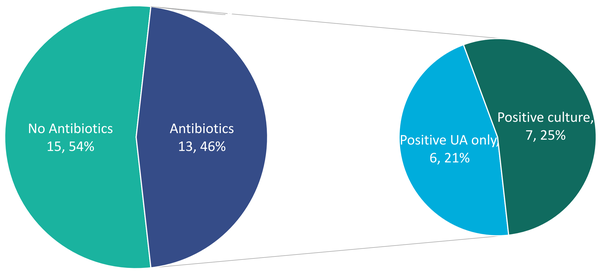


Figure 3: Treatment of asymptomatic bacteriuria.

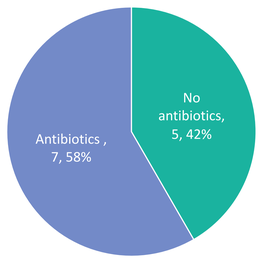
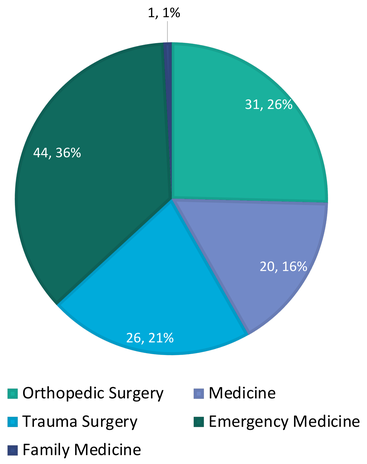


Figure 4: Rates of ordering preoperative urinalyses by specialty.



Discussion/Conclusions

- High rate of preoperative UA recommendations prior to surgical repair of hip fractures
- Over 50% treatment rate of ASB
- High rate of treating pyuria or presence of leukocyte esterase and/or nitrites alone
- 4 patients with ASB received a single dose of antibiotics preoperatively despite lack of evidence to support the use of single-dose antibiotic administration for treating ASB prior to other non-urological procedures
- No adverse events for those who did receive antibiotics for ASB or complications from untreated ASB
- Limitations: small sample size, limited documentation, single EMR
- Multiple areas for education and improvement in resource utilization and antibiotic stewardship.

References

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Acknowledgements

Thank you to Drs. Farkhondehpour and Seymann for their guidance on this project. I am also deeply grateful to Dr. Jassal and the UCSD Internal Medicine Residency Program for the opportunity to participate in this research project.