

Re: Less is more: single dose versus extended antibiotic prophylaxis for transperineal prostate biopsy

Roderick Clark, MD, Jay D. Raman, MD

Department of Urology, Penn State Health, Hershey Pennsylvania, USA

Referring to article published on pp. 11599-11604 in this issue.

CLARK R, RAMAN JD. Re: Less is more: single dose versus extended antibiotic prophylaxis for transperineal prostate biopsy. *Can J Urol* 2023;30(4):11605-11606.

The World Health Organization estimates antibiotic resistance to be one of the biggest threats to global health care.¹ Infection rates after prostate biopsy are estimated to be approximately 5% although emergency room visits, hospitalization and intensive care unit admissions continue to rise.²

Transperineal (TP) prostate biopsy is a strategy to reduce procedural infections. A recent meta-analysis on this technique estimated that the rate of post-biopsy genitourinary infection was 0.1% among individuals receiving prophylactic antibiotics and 0.3% among those who did not.³ The recently updated American Urological Association guideline summarized that clinicians may use either the transrectal or TP approach for prostate biopsy.⁴ Additionally, several randomized prospective trials are comparatively investigating the respective approaches.

In this issue, Sandberg et al, reported on a retrospective cohort study of 767 men who underwent TP prostate biopsy and compared individuals who received single dose (n = 440) versus extended course (n = 327) of antibiotics.⁵ These authors found no significant difference in infection rates between the

cohorts (2.0% for men receiving a single IV dose versus 1.5% for those receiving an extended course of IV and oral antibiotics). The most commonly used antibiotics were Ceftriaxone IV (81.7%) and Ciprofloxacin PO for the extended prophylaxis group (78.6%).

The authors should be congratulated for this important work. Given variation in local antibiotic resistance patterns, it is essential that healthcare providers develop data tailored to their experience so they can understand and identify if their infection risk differs from national and international centers.

We also believe the author's work highlight a few points worth additional consideration:

1. The infectious risk following TP biopsy in this series was 1.5% to 2.0% which is similar to data Mian et al presented at the AUA 2023 annual meeting (2.7% in TP group).⁶ These rates are higher than the previously cited meta-analysis³ and underscore that the risks may vary across different populations and may not be universally lower than transrectal rates.
2. Antibiotic stewardship remains paramount. Central to this concept is not just the duration of antibiotic therapy but also choice of agent. Particularly for the TP approach which avoids contact with rectal flora, a single periprocedural dose which covers gram positive skin flora should suffice to prevent infection. The addition of longer duration quinolones or other antimicrobials which cover gram negative or anaerobic agents is likely unnecessary.

Address correspondence to Dr. Roderick Clark, Penn State Health, Hershey, PA 17033 USA

Iterative review of outcomes is essential for quality improvement. Large collaboratives such as MUSIC and PURC, have highlighted such successes. Nonetheless, as Sandberg et al⁵ demonstrate, quality collaboratives are not requisite to implement change ... simply the impetus to look at one's data and critically evaluate measures to improve patient care. □

References

1. <https://www.who.int/news-room/fact-sheets/detail/antibiotic-resistance> (accessed 7/31/2023).
2. Shoag JE, Gaffney C, Pantuck M et al. Risk factors for infection after prostate biopsy in the United States. *Urology* 2020;138:113-118.
3. Castellani D, Pirola GM, Law YXT et al. Infection rate after transperineal prostate biopsy with and without prophylactic antibiotics: results from a systematic review and meta-analysis of comparative studies. *J Urol* 2022;207(1):25-34
4. Wei JT, Barocas D, Carlsson S et al. Early detection of prostate cancer: AUA/SUO Guideline Part II: considerations for a prostate biopsy. *J Urol* 2023;210(1):54-63.
5. Sandberg M, Whitman W, Hingu J et al. Less is more: single dose versus extended antibiotic prophylaxis for transperineal prostate biopsy. *Can J Urol* 2023;30(4):11599-11604.
6. Mian BM, Feustel PJ, Azia A et al. Infectious and non-infectious complications following prostate biopsy: a randomized clinical trial | Journal of Urology [Internet]. [cited 2023 Jul 31]. Available from: <https://www.auajournals.org/doi/abs/10.1097/JU.0000000000003426.03>.