

EDITORIAL



Antimicrobial prophylaxis: To do or not to do? This is the question

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In *Prostate Cancer and Prostatic Disease*, Renée Hogenhout and colleagues reported the results of a long-time study on the role of prostate biopsy route in the development of infectious complication after the procedure. They compared the infectious complication rate between transperineal prostate biopsy without antimicrobial prophylaxis and transrectal biopsy with antimicrobial prophylaxis. Moreover, they compared the clinically significant prostate cancer detection rate between the two procedures. By using a large cohort of patients, they concluded that transperineal prostate biopsy has no different from transrectal biopsy in terms of prostate cancer detection rate. Furthermore, transperineal prostate biopsy is preferable because shows a low rate of infectious complications, even if antimicrobial prophylaxis is omitted [1]. Why is this trial important? For a start, the role of prostate biopsy route in the prostate cancer detection rate. To date, the debate of superiority of one approach over the other remains open and there are few grey zones. The transperineal route seems to achieve superior sampling of the anterior and apical regions, especially in case of repeated prostate biopsy [2]. However, the superiority of transperineal approach over the transrectal arises from many years of clinical trials. During the last years, we observed a paradigm shift from transrectal to transperineal approach. In the early 2000s, systematic transperineal template biopsy was used to enhance the identification of transition zone cancers not detected by previous transrectal prostate biopsy in patients at high risk of prostate adenocarcinoma [3]. Over the next years, the urologists' practice preferences for prostate biopsy route changed and the use of transperineal approach increased. It is due to the demonstrated absence of significant differences between the two approaches in terms of prostate cancer detection rate, as, here, demonstrated by Hogenhout R. et al. (odds ratio 1.0, 95%–35 (CI) 0.62–1.76, $p = 0.9$; for men on active surveillance: odds ratio 1.05, 95%–CI 36 0.58–1.88, $p = 0.9$) [1, 2, 4] and to the increase of infectious complications after the transrectal route. Moving to the issue of infectious complications, in 2013, Wagenlehner F. et al. reported the results of the 2010–2011 Global Prevalence Study of Infections in Urology (GPIU), showing that infectious complications after transrectal prostate biopsy are an important cause of patient morbidity and the prevalence was about 5%, despite antibiotic prophylaxis [5]. In 2021, Alidjanov J. et al. aimed to compare the prevalence of complications after prostate biopsy between patients of two GPIU study cohorts: 2010–2014 and 2016–2019 [6]. They reported that cases requiring post-prostate biopsy antibiotic treatment increased from 6.1 to 9.7% [6]. Moreover, they highlighted that transperineal prostate biopsy was significantly associated with complications [6]. It is, then, clear that the prostate biopsy complications rates tended

to increase in time, as well as rates of patients seeking additional medical help after the procedure. In this sense, all clinicians should switch to the transperineal biopsy route because transperineal biopsy significantly reduces infectious complications compared to transrectal biopsy [7]. Hogenhout R. et al. reported interesting findings about the utility of transperineal prostate biopsy for reducing the infectious complications rate after the procedure. Transperineal prostate biopsy is, then, superior to transrectal prostate biopsy in terms of infectious complications rate, even if antimicrobial prophylaxis is omitted [1]. Recently, Jacewicz J. et al. in a randomized-controlled study demonstrated that the rates of infectious complications were not higher in patients not receiving antibiotic prophylaxis before transperineal prostate biopsy than in those receiving it, showing that antibiotic prophylaxis might be omitted [8]. On the other hand, we need to consider, also, the risk of antibiotic resistance due to the routine use of antibiotic prophylaxis. Probably, this is the time to re-examine whether antibiotic prophylaxis should be routinely applied before transperineal prostate biopsy in consideration of the interesting findings about the very low risk of infectious complications and the increasing antibiotic resistance [9, 10]. The question is: Is it time to abandon routine antibiotics for transperineal prostate biopsy? The answer will be probably given in the next years by international guidelines, but the number of published clinical trials on this field has been recently increased and the goal to provide high-level evidence for the safety of an antibiotic-free approach is forthcoming [8–10]. Renée Hogenhout and colleagues helped to achieve this goal.

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AUTHOR CONTRIBUTIONS

All contributions were from the single author (TC).

COMPETING INTERESTS

The author declares no competing interests.

ADDITIONAL INFORMATION

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