We welcome the opportunity to respond to the Platinum Opinion by Dr. Mian [1]. In 2015, the European Association of Urology (EAU) Urological Infections Guideline Panel initiated a systematic review of randomised controlled trials (RCTs) to demonstrate how infectious complications of prostate biopsy can be reduced. The evidence was published in 2020 in two parts, covering antibiotic and nonantibiotic interventions [2], [3]. Since then, the evidence has been updated every year to ensure that the EAU guidelines reflect the most up-to-date evidence for this important diagnostic procedure.

One important issue is the comparison of transperineal versus transrectal prostate biopsy. The updated meta-analysis confirms a significant advantage for transperineal prostate biopsy (22 events among 807 men) in comparison to transrectal biopsy (48 events among 789 men; risk ratio 0.50, 95% confidence interval 0.27–0.94; 1596 participants in eight studies; $I^2 = 22\%$; low certainty; Fig. 1).

Fig. 1. Comparison of infectious complications following transperineal versus transrectal prostate biopsy. CI = confidence interval; df = degrees of freedom; M=H = Mantel-Haenszel method.

Of the eight studies included in the meta-analysis, seven had the prostate cancer detection rate as the primary outcome, but reported infectious complications as a secondary outcome. It should be noted that the definition of infectious complications across the RCTs varied greatly, ranging from mild dysuria to fulminant urosepsis. To adjust for this, the primary outcome for the abovementioned meta-analysis was “pooled infectious complications”, comprising urinary tract infection, fever, and sepsis. The result of any meta-analysis relies on the quality of the individual studies and as further RCTs are published, the overall magnitude of the effect can be reviewed. Current guideline recommendations, however, can only be made on the basis of the most up-to-date evidence available, and not on future RCTs.
Although the certainty (quality) of evidence was low for this outcome, we advocated a strong recommendation to use the transperineal biopsy route owing to the more favourable infection rates. This is aligned with the GRADE principles, which consider not only the certainty of evidence but also the balance between benefits and harms, and patient values and preferences and health economics in decision-making. The major consideration is the fact that transrectal prostate biopsy can be potentially life-threatening if sepsis occurs [4]. In addition to our systematic review, we also based our recommendation on data from a large UK population-based study that included 73,630 patients undergoing prostate biopsy, which showed a lower readmission rate for sepsis in the transperineal than in the transrectal group (1.0% vs 1.4%) [5].

In summary, the evidence available demonstrates that the transperineal approach is associated with a significantly lower rate of infections. As infection is a highly relevant endpoint for prostate biopsy, transperineal biopsy should be the first choice. Any possible logistic challenges are of less importance [6]. Although there are only two very heterogeneous RCTs on antibiotic prophylaxis in transperineal prostate biopsy [7], [8], meta-analyses of the non-RCTs available show that antibiotic prophylaxis can probably be omitted [9].

At a European level, we see a clear trend whereby transrectal biopsy is increasingly being abandoned. This is also because national health authorities are becoming aware of the issue of infectious complications as a result of advocacy by patient rights groups. The argument that the transrectal approach is preferable because it is currently the most frequently used is weak. Nevertheless, transrectal prostate biopsy is not prohibited [10]. The balance between the advantage of lower infection rates and potential disadvantages regarding costs and implementation may differ by country, region, and centre. Therefore, recommendations on how to minimise infectious complications during transrectal biopsies continue to be part of the yearly update of the EAU guidelines. A cornerstone of our practice as physicians should be not to harm our patients, and this may involve breaking away from traditions when potentially more effective techniques come along. As a guideline group, our role is to compile the evidence and not present eminence-based opinions or to conceal unpleasant results.

References