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## Platinum Priority – Editorial

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# One Strategy Does Not Fit All: The Era of Personalised Medicine for the Treatment of Male Lower Urinary Tract Symptoms Is upon Us

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In this month's issue of *European Urology*, Magistro et al [1] report on the latest literature in a narrative review of emerging minimally invasive treatment (MIT) options for male lower urinary tract symptoms (LUTS). They discuss four different novel techniques for the management of male LUTS, namely, intraprostatic injectables, mechanical devices including prostatic urethral lift (PUL), prostatic artery embolisation (PAE), and new techniques for tissue ablation. Many readers are likely to have heard about, but not performed, these novel techniques, and thus this article provides a timely update on a rapidly advancing field.

The literature on male LUTS is littered with new and hopeful techniques that promise much but often fail to embed themselves into day-to-day urological practice. Transurethral microwave therapy, needle ablation, and prostatic stents, while all recommended by the European Association of Urology guidelines, have been consigned largely to the history books, and so the question remains: Will these new techniques described stand the test of time? Of these, the evidence base is greatest for PUL—more commonly known as the Urolift, which has acquired regulatory approval for use in several countries including the USA, Australia, and many countries in Europe. Data from a number of randomised controlled trials have demonstrated that the technique is able to significantly improve male LUTS. In comparison with transurethral resection of the prostate (TURP), Urolift would appear inferior in terms of improvement in International Prostate Symptom Score (IPSS), Qmax, and reduction in postvoid residual—arguably the most important outcomes required for men with LUTS [2]. On the contrary, Urolift can be a day-case procedure

performed under local anaesthetic with the benefit that it has minimal impact on ejaculatory function—a well-known complication of TURP. There is no doubt that for some men, deterioration in sexual function significantly impacts quality of life, and as such, Urolift would appear advantageous compared with TURP for a select population of men with LUTS.

The evidence base for the other MITs discussed in the review is limited. The initial enthusiasm for intraprostatic injectables has unfortunately not come to fruition. Neither botulinum neurotoxin A nor NX-1207 has been shown to be of benefit over placebo, while initial success (61% improvement in Qmax) with PRX302—a highly toxic pore-forming protein that causes cell death by generating pores within the plasma membrane—has been demonstrated to have at best modest efficacy in a larger phase 3 study (1.02 point benefit in IPSS vs control) [3].

In comparison, ablation of prostate tissue using an image-guided robotic waterjet, a system known as Aqua-beam, potentially offers a realistic alternative to TURP, although the data evaluating this technique are very much in their infancy—a finding that appears not to be highlighted in the current review. Data presented at the American Urological Association this year have demonstrated that aquablation, when tested against TURP in a randomised, blinded, multicentre phase 3 study, was as effective as TURP, removing a similar volume of prostate tissue, while tissue removal time was significantly shorter [4]. If more data were to confirm this, aquablation could really change the management of male LUTS as the procedure is less operator dependent than TURP and without a significant learning

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curve, which would allow it to be disseminated quickly on a population scale. Furthermore, the shorter ablation and overall procedural time would allow patients with more comorbidity to undergo the procedure, although they would still need to undergo a general anaesthetic.

Lastly, the review evaluated PAE. While the data on this technique are definitely limited, the authors of the review, in our opinion, fail to focus their discussions on the advantages of PAE over the other techniques mentioned in the review—namely the ability of PAE to treat men with large prostates (>100 g), potentially with indwelling catheters, who are not sufficiently fit to undergo general anaesthesia.

This last point in our view goes right to the heart of the matter as to which technique is best, that being that there is no one superior technique—no “one size” that fits all. Recent advances have potentially brought us into an era of “personalised medicine” where each man is individually assessed and treatment tailored to individual needs. For example, a young man in his 50s with a small prostate without a middle lobe and a desire to maintain his sexual function is likely to be best suited to the Urolift. A man with a moderately enlarged prostate, potentially with a middle lobe, and who is either not concerned with sexual function or indeed has pre-existing erectile dysfunction may be best suited to TURP, while a man with a 130 g large vascular prostate is arguably best suited to laser enucleation of the prostate or PAE if not sufficiently fit to undergo anaesthesia.

Longer-term results are required for all these new MITs, as much of the current literature are relatively small series of highly selected well-motivated patients performed by enthusiasts for the technique, and thus the results are not necessarily applicable to all patients—a point which often does not obviously come across in reporting. Real-life

comparison with gold-standard treatments needs to be made with standard well-validated parameters. Once this is done, if the procedure can be offered as a day case or the need for anaesthesia can be avoided, patients may choose to accept a compromise in efficacy or durability, especially if there is preservation of sexual function. As such these treatments may form a new level in the treatment algorithm, after medical management but before TURP or laser treatments.

In summary, this review provides the latest data on novel technologies for the treatment of male LUTS. The decision concerning which technique should be used to treat a man with male LUTS should be individualised to the individual needs of the particular patient. Access to the whole range of male LUTS treatments can only be of patient benefit.

*Conflicts of interest:* The authors have no relevant disclosures.

## References

- [1] Magistro G, Chapple CR, Elhilali M, et al. Emerging minimally invasive treatment options for male lower urinary tract symptoms. *Eur Urol* 2017;72:986–97.
- [2] Gratzke C, Barber N, Speakman MJ, et al. Prostatic urethral lift vs transurethral resection of the prostate: 2-year results of the BPH6 prospective, multicentre, randomized study. *BJU Int* 2017;119:767–75.
- [3] Roehrborn C, Bruskewitz R, Yocum R, et al. Prospective, randomized, double blind, vehicle controlled, multinational, phase 3 clinical trial of the pore forming protein PRX302 for targeted treatment of symptomatic benign prostatic hyperplasia. *J Urol* 2016;195:e336–7.
- [4] Roehrborn CG, Gilling P. The WATER study clinical results— a phase iii blinded randomized parallel group trial of aquablation vs. transurethral resection of the prostate with blinded outcome assessment for moderate-to-severe LUTS in men with benign prostatic hyperplasia. *J Urol* 2017;197:e603–4.