

Transurethral water vapour ablation for lower urinary tract symptoms caused by benign prostatic hyperplasia

Interventional procedures guidance
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Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account, and specifically any special arrangements relating to the introduction of new interventional procedures. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the [Yellow Card Scheme](#).

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties. Providers should ensure that governance structures are in place to review, authorise and monitor the introduction of new devices and procedures.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

1 Recommendations

- 1.1 Current evidence on the safety and efficacy of transurethral water vapour ablation for urinary tract symptoms caused by benign prostatic hyperplasia is adequate to support the use of this procedure provided that standard arrangements are in place for clinical governance, consent and audit. Find out what standard arrangements mean on the NICE interventional procedures guidance page.
- 1.2 This procedure should only be done by a urologist with specific training in the procedure, who should carry out their initial procedures with an experienced mentor.

2 The condition, current treatments and procedure

The condition

- 2.1 Lower urinary tract symptoms caused by benign prostatic hyperplasia commonly affect men over 50. Stromal and epithelial cells increase in number, causing the prostate to increase in size. It often occurs in the peri-urethral region of the prostate, with large discrete nodules compressing the urethra. Symptoms include hesitancy during micturition, interrupted or decreased urine stream (volume and flow rate), nocturia,

incomplete voiding and urinary retention.

Current treatments

- 2.2 Mild symptoms are usually managed conservatively. Drugs may also be used, such as alpha blockers and 5-alpha-reductase inhibitors. If other treatments have not worked, there are a range of surgical options that may be considered including transurethral resection of the prostate (TURP), transurethral vaporisation, holmium laser enucleation, insertion of prostatic urethral lift implants, prostatic artery embolisation or prostatectomy (see the [NICE clinical guideline on lower urinary tract symptoms in men](#)). Potential complications of some of these surgical procedures include bleeding, infection, urethral strictures, incontinence and sexual dysfunction.

The procedure

- 2.3 Transurethral water vapour ablation is usually done as day-case surgery using local anaesthetic including a peri-prostatic block, and sometimes sedation. A device similar to a rigid cystoscope is advanced into the prostatic urethra. Under direct visualisation, a retractable needle is inserted into the prostate and water vapour (at a temperature of about 103 degrees centigrade) is delivered for 8 to 10 seconds. At the same time, saline irrigation is used to cool and protect the surface of the urethra. Conductive heat transfer disrupts cell membranes in the prostate, leading to rapid cell death. The needle is retracted and repositioned several times so that thermoablation can be repeated in different areas of the gland, including the median lobe. The aim is to reduce the size of the prostate, leading to improvement in lower urinary tract symptoms 1 to 3 months after treatment, without impairing sexual function.
- 2.4 Patients may have to take antibiotics and have a urinary catheter for some days after the procedure. Some activities, including sexual intercourse, should be avoided for up to 1 month.

3 Committee considerations

The evidence

- 3.1 To inform the committee, NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 10 sources, which was discussed by the committee. The evidence included 1 randomised controlled trial (RCT) reported with 1, 2 and 3 years of follow-up in 4 publications, 1 comparative study (also including patients from the RCT) and 3 case series (1 of which was reported in 3 publications), and is presented in [table 2 of the interventional procedures overview](#).
- 3.2 The specialist advisers and the committee considered the key efficacy outcomes to be: improvement of lower urinary tract symptoms, urinary flow rate, and quality of life.
- 3.3 The specialist advisers and the committee considered the key safety outcomes to be: bleeding, infection, disorders of sexual function, and need for re-intervention.
- 3.4 Fifteen [commentaries from patients](#) who had experience of this procedure were received, which were discussed by the committee.

Committee comments

- 3.5 The committee was advised that the procedure may also be effective for patients with an enlarged median prostatic lobe.
- 3.6 Patients may need a urinary catheter for several days after the procedure.
- 3.7 The committee noted that this procedure is also known as transurethral water vapour thermal ablation or transurethral steam ablation.
- 3.8 Patient commentaries were all supportive of the procedure, and most

people reported improvement in symptoms.

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Endorsing organisation

This guidance has been endorsed by [Healthcare Improvement Scotland](#).