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## NICE Guidance – Prostate artery embolisation for lower urinary tract symptoms caused by benign prostatic hyperplasia

© NICE (2018) Prostate artery embolisation for lower urinary tract symptoms caused by benign prostatic hyperplasia

### 1 Recommendations

- 1.1 Current evidence on the safety and efficacy of prostate artery embolisation for 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.
- 1.2 Patient selection should be done by a urologist and an interventional radiologist.
- 1.3 This technically demanding procedure should only be done by an interventional radiologist with specific training and expertise in prostatic artery embolisation.

### 2 The Condition, Current Treatments and Procedure

#### The Condition

- 2.1 Benign prostatic hyperplasia is common in older men. Stromal and epithelial cells increase in number, causing the prostate to increase in size. It often occurs in the periurethral 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, then surgical options include transurethral resection of the prostate, transurethral vaporisation of the prostate, holmium laser enucleation of the prostate or prostatectomy (see the NICE guideline on lower urinary tract symptoms in men <https://www.nice.org.uk/guidance/cg97>). Insertion of prostatic urethral lift implants has been introduced more recently as an alternative treatment

for lower urinary tract symptoms secondary to benign prostatic hyperplasia. Potential complications of surgical procedures include bleeding, infection, strictures, incontinence and sexual dysfunction.

#### The Procedure

- 2.3 Prostate artery embolisation for benign prostate hyperplasia is usually done using local anaesthesia. Under X-ray guidance, the prostate is approached through the left or right femoral artery. Super-selective catheterisation of the small prostatic arteries is done using fine microcatheters through the pelvic arteries. Embolisation involves the introduction of microparticles to completely block the prostatic vessels. Embolisation agents include polyvinyl alcohol (PVA) and other newer synthetic biocompatible materials.
- 2.4 The aim of prostate artery embolisation is to reduce the prostate's blood supply, causing some of it to undergo necrosis and shrink. It is common for patients to experience pelvic pain during and after the procedure. This does not usually last more than 1 to 3 days. The potential benefits of prostate artery embolisation compared with surgery include fewer complications, avoiding a general anaesthetic and it may be done as a day case procedure.

### 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 systematic review, 2 randomised controlled trials (also included in the systematic review), 1 non-randomised comparative study (also included in the systematic review), 2 case series, 3 case reports, and data

- provided by the UK-ROPE register and is presented in table 2 of the interventional procedures overview (<https://www.nice.org.uk/guidance/IPG611/evidence>). Other relevant literature is in the appendix of the overview.
- 3.2 The specialist advisers and the committee considered the key efficacy outcomes to be: quality of life, urinary symptoms as measured by the International Prostate Symptom Score, and improvement in urodynamics.
  - 3.3 The specialist advisers and the committee considered the key safety outcomes to be: inadvertent embolisation of other sites, urinary retention, prostatic bleeding (haematuria and haemospermia), groin haematoma, pain, retrograde ejaculation, and no loss of sexual function.
  - 3.4 Four commentaries from patients who had experience of this procedure were received, which were discussed by the committee.

## Committee Comments

- 3.5 The evidence showed a relatively high incidence of urinary retention after the procedure.
- 3.6 The committee was informed that this procedure involves extensive imaging, which may result in significant radiation exposure.

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