Plasma Vaporization of the Prostate for the Treatment of Benign Prostatic Hyperplasia: A Review

**Context**
Benign prostatic hyperplasia (BPH) is a nonmalignant enlargement of the prostate gland that sometimes leads to compression of the urethra and obstruction of the flow of urine. In Canada, about 25% of men older than 50 years of age have BPH.

**Technology**
Transurethral resection of the prostate (TURP) is a common treatment for BPH. This procedure uses a heated electrode to cut a section of the prostate. Bipolar plasma vaporization of the prostate (BPVP) is similar; however, during this procedure, the irrigation fluid used during surgery is vaporized to cause a thin layer of gas, or “plasma,” to form around the electrode, thereby protecting the surrounding tissue from unnecessary excess heat.

**Issue**
BPVP is potentially more cost-effective than TURP because it is thought that BPVP can lead to reductions in operating time and length of hospital stay, as well as in symptoms and complications. A review of the clinical efficacy, safety, and cost-effectiveness of BPVP compared with TURP will help inform decisions regarding which treatment to use for patients with BPH.

**Methods**
A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

**Key Messages**
- For the treatment of BPH, BPVP results in better efficacy outcomes and satisfactory safety rates, compared with TURP, in the short and medium term (up to 18 months).
- In the longer term (after 60 and 100 months), BPVP reduces BPH symptoms and reoperation rates compared with TURP (based on limited evidence).
- No information on the cost-effectiveness of BPVP compared with TURP for patients with BPH was found.

**Results**
The literature search identified 97 citations, with 2 additional articles identified from other sources. After screening the abstracts, 15 were deemed potentially relevant and 7 met the criteria for inclusion in this review — 6 randomized controlled trials and 1 retrospective study.

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