

Prostatic Artery Embolization for Benign Prostatic Hyperplasia: Recommendation

Final Recommendation

- Ontario Health, based on guidance from the Ontario Health Technology Advisory Committee, recommends publicly funding prostatic artery embolization for benign prostatic hyperplasia

Rationale for the Recommendation

The Ontario Health Technology Advisory Committee has reviewed the findings of the health technology assessment¹ and acknowledged that prostatic artery embolization may improve symptoms of benign prostatic hyperplasia, with uncertainty about whether these improvements compare similarly to transurethral resection of the prostate (surgery). In making their recommendation, the committee felt the less invasive nature of prostatic artery embolization compared with surgery aligned with patient preferences. They also felt that the associated budget impact for the treatment likely supported the economic feasibility of adopting the technology into the health care system while acknowledging there remains uncertainty about whether prostatic artery embolization is a cost-effective treatment.

The committee supports the current practice that patients suitable for prostatic artery embolization be determined by a urologist working collaboratively with an interventional radiologist. Committee members also discussed that prostatic artery embolization is currently paid for through the hospital global budget and general embolization physician fee codes, analogous to other interventional radiology procedures. The committee discussed patient access to prostatic artery embolization, noting that currently the treatment is available at only one hospital in Ontario. The committee recognized that appropriate infrastructure and interventional radiology expertise will be required to support offering this treatment at other hospitals in Ontario.

Decision Determinants for Prostatic Artery Embolization for Benign Prostatic Hyperplasia

Decision Criteria	Subcriteria	Decision Determinants Considerations
Overall clinical benefit How likely is the health technology/intervention to result in high, moderate, or low overall benefit?	Effectiveness How effective is the health technology/intervention likely to be (taking into account any variability)?	PAE may improve BPH symptoms and urodynamic measures, but we are uncertain if PAE results in similar outcomes as TURP (GRADE: Very low to low). Compared with OSP, PAE may result in a smaller improvement in BPH symptoms and urodynamic measures, but we are very uncertain (GRADE: Very low). Longer-term comparative studies are needed to assess the durability of PAE.
	Safety How safe is the health technology/intervention likely to be?	Compared with TURP or OSP, PAE may result in fewer adverse events (GRADE: not assessed).
	Burden of illness What is the likely size of the burden of illness pertaining to this health technology/intervention?	The prevalence of BPH increases after 40 years of age. It has been estimated that 50% of people > 75 years of age experience symptoms due to BPH. While BPH is not typically a life-threatening condition, its symptoms can significantly impact quality of life.
	Need How large is the need for this health technology/intervention?	PAE is an endovascular procedure that is less invasive than surgical treatments for BPH, such as TURP. PAE may be a treatment option for people who have failed medical therapy and are unfit for surgery.
Patient preferences and values How likely is adoption of the health technology/intervention to be congruent with patient preferences and values and with ethical or legal standards?	Patient preferences and values Do patients have specific preferences, values, or needs related to the health condition, health technology/intervention, or life impact that are relevant to this assessment? (Note: The preferences and values of family members and informal caregivers are to be considered as appropriate.)	Patients value the option of having a less invasive procedure to treat their BPH symptoms. Short recovery time and successful reduction in negative symptoms associated with BPH are preferential for patients.

Decision Criteria	Subcriteria	Decision Determinants Considerations
	<p>Autonomy, privacy, confidentiality, and/or other relevant ethical principles as applicable</p> <p>Are there concerns regarding accepted ethical or legal standards related to patient autonomy, privacy, confidentiality, or other ethical principles that are relevant to this assessment? (Note: The preferences and values of the public are to be considered as appropriate.)</p>	<p>Patients value the autonomy to choose their treatment procedure and being provided the relevant information to make an informed decision.</p>
<p>Equity and patient care</p> <p>How could the health technology/ intervention affect equity of access and coordination of patient care?</p>	<p>Equity of access or outcomes</p> <p>Are there disadvantaged populations or populations in need whose access to care or health outcomes might be improved or worsened that are relevant to this assessment?</p> <p>Patient care</p> <p>Are there challenges in the coordination of care for patients or other system-level aspects of patient care (e.g., timeliness of care, care setting) that might be improved or worsened that are relevant to this assessment?</p>	<p>PAE is currently performed at only one hospital in Ontario, which has the largest PAE volume in Canada.</p> <p>In Ontario, potential candidates for PAE must be referred to an interventional radiologist by a urologist. The number of PAE procedures performed is currently limited.</p>

Decision Criteria	Subcriteria	Decision Determinants Considerations
<p>Cost-effectiveness</p> <p>How efficient is the health technology/intervention likely to be?</p>	<p>Economic evaluation</p> <p>How efficient is the health technology/intervention likely to be?</p>	<p>At the commonly used willingness-to-pay values of \$50,000 and \$100,000 per QALY gained, we are uncertain if PAE is cost-effective compared with TURP (52% and 68% probability of being cost-effective for PAE, respectively).^a Our model suggested that the incremental cost-effectiveness ratio is \$44,930 per QALY gained.</p> <p>At the commonly used willingness-to-pay values of \$50,000 and \$100,000 per QALY gained, PAE is highly unlikely to be cost-effective compared with OSP (2% and 1% probability of being cost-effective for PAE, respectively).^a Our model suggested that the incremental cost-effectiveness ratio is \$10,241 saved per QALY lost.</p>
<p>Feasibility of adoption into health system</p> <p>How feasible is it to adopt the health technology/intervention into the Ontario health care system?</p>	<p>Economic feasibility</p> <p>How economically feasible is the health technology/intervention?</p> <p>Organizational feasibility</p> <p>How organizationally feasible is it to implement the health technology/intervention?</p>	<p>The cost of a PAE procedure is about \$5,235. In addition, costs related to physician fees, adverse events, and re-intervention are expected to be incurred. We estimated that there would be an additional 10–50 PAE procedures per year in the next 5 years. Publicly funding PAE would lead to an additional cost of \$11,400 over the next 5 years.</p> <p>PAE is currently being performed at one hospital in Ontario. PAE is performed by specially trained interventional radiologists in specialized angiography units in consultation with urologists. PAE adoption will be limited to centres with the appropriate expertise and infrastructure.</p>

Abbreviations: BPH, benign prostatic hyperplasia; GRADE, Grading of Recommendations Assessment, Development and Evaluation; OSP, open simple prostatectomy; PAE, prostatic artery embolization; QALY, quality-adjusted life-year; TURP, transurethral resection of the prostate.

^aUncertainty was classified into one of five categories based on the Ontario Decision Framework²: highly likely to be cost-effective (80–100% probability of being cost-effective), moderately likely to be cost-effective (60–79% probability), uncertain if cost-effective (40–59% probability), moderately likely to not be cost-effective (20–39% probability), or highly likely to not be cost-effective (0–19% probability).

References

- (1) Ontario Health. Prostatic artery embolization for benign prostatic hyperplasia: a health technology assessment. Ont Health Technol Assess Ser [Internet]. 2021 June;21(6):1–139. Available from: <https://www.hqontario.ca/evidence-to-improve-care/health-technology-assessment/reviews-and-recommendations/prostatic-artery-embolization-for-benign-prostatic-hyperplasia>
- (2) Krahn M, Miller F, Bayoumi A, Brooker AS, Wagner F, Winsor S, et al. Development of the Ontario decision framework: a values based framework for health technology assessment. Int J Technol Assess Health Care. 2018;34(3):290-9.

[Disclaimer](#)

[About Ontario Health](#)

[About the Ontario Health Technology Advisory Committee](#)

[How to Obtain Recommendation Reports](#)

Ontario Health
130 Bloor Street West, 10th Floor
Toronto, Ontario
M5S 1N5
Tel: 416-323-6868
Toll Free: 1-866-623-6868
Fax: 416-323-9261
Email: oh-hqo_hqa@ontariohealth.ca
www.hqontario.ca

ISBN 978-1-4868-5315-1 (PDF)

© Queen's Printer for Ontario, 2021

Citation

Ontario Health. Prostatic artery embolization for benign prostatic hyperplasia: recommendation [Internet]. Toronto (ON): Queen's Printer for Ontario; 2021 June. 5 pp. Available from: <https://www.hqontario.ca/evidence-to-improve-care/health-technology-assessment/reviews-and-recommendations/prostatic-artery-embolization-for-benign-prostatic-hyperplasia>