

OHTAC E-Bulletin

Seeking the best health technologies for Ontario



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The OHTAC E-Bulletin is issued on a regular basis to provide you with updates on the latest committee recommendations.

Previous Medical Advisory Secretariat monographs and reviews and subsequent OHTAC recommendations are available on the OHTAC website, with links in each E-Bulletin issue.

Should you have any questions or additional information about any of these technologies, please submit it to the Medical Advisory Secretariat (MAS).

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Intravascular Ultrasound to Guide Percutaneous Coronary Interventions

A summary of the Health Technology Policy Assessment by the Medical Advisory Secretariat and the OHTAC Recommendation

Intravascular ultrasound (IVUS) is a procedure that uses high frequency sound waves to acquire 3-dimensional images from the lumen of a blood vessel. IVUS has been used to study the structure of the arterial wall and nature of atherosclerotic plaques, and obtain measurements of the vessel lumen and plaque burden. Its role in guiding percutaneous coronary interventions (PCIs), including stent placement, is also being investigated. IVUS is presently not an insured health service in Ontario.

Coronary artery disease is a major cause of ischemic heart disease that resulted in an annual mortality rate of 141.8 per 100,000 population in Ontario between 1995 and 1997. Compared to coronary artery bypass surgery, percutaneous coronary interventions (PCIs), consisting mainly of balloon angioplasty with placement of a stent, provides a less invasive approach to treating coronary artery disease. The number of PCI procedures funded by the Ministry of Health and Long-term Care is expected to increase from approximately 17,780 in 2004/2005 to 22,355 in 2006/2007 (an increase of 26%), with about 95% of PCIs requiring the placement of one or more stents. It has been suggested that the use of IVUS in conjunction with coronary angiography may be more accurate in the assessment of optimal stent placement, thus reducing the need for repeat PCIs or coronary artery bypass graft, and improving patient outcomes.

Key Findings

- The use of adjunctive IVUS in PCIs using bare metal stents in lesions predominantly at low risk for restenosis had no significant impact on survival, myocardial infarction, or angiographic restenosis rates up to 2.5 years after intervention.
- The use of IVUS adjunctive to coronary angiography in percutaneous coronary interventions using bare metal stents in lesions predominantly at low risk for restenosis significantly reduced the target lesion and target vessel revascularization at a follow-up period of 18 months to 2.5 years.
- One small study suggests that adjunctive IVUS in PCIs using bare metal stents in long lesions (>20 mm) significantly improved the 6-month angiographic restenosis rate and one-year target lesion revascularization rate. These results need to be confirmed with large randomized controlled trials.
- Based on information from the Ontario field evaluation on stenting, it is uncertain whether the reduction in revascularization rate resulting from the use of IVUS in the placement of bare metal stents can be generalized to clinical settings in Ontario.
- There is presently insufficient evidence available to determine the impact of adjunctive IVUS in percutaneous interventions in high-risk lesions (other than long lesions) or in PCIs using drug-eluting stents.

OHTAC Recommendations

- Against the routine use of IVUS in percutaneous coronary interventions.
- That in the interim, IVUS should be used to guide PCIs, at the discretion of the physician, for specific high-risk patients in whom angiography guidance is found to be inadequate.

Implications

Cost-effectiveness analysis showed that PCIs using IVUS guidance would likely be less costly and more effective than PCIs without IVUS guidance. However, since it is uncertain whether the reduction in revascularization rate resulting from the use of IVUS can be generalized to clinical settings in Ontario, further analysis on the budget impact and cost-effectiveness need to be conducted once Ontario-specific revascularization rates are verified.

The full downloadable version of the **Health Technology Policy Review** by the Medical Advisory Secretariat can be found [here](#). The **OHTAC recommendation** for this technology can be found [here](#).

OHTAC is envisaged as the first step in creating a single portal for providing advice to the Ontario Ministry of Health and Long-Term Care regarding the uptake, diffusion, and distribution of new health technologies. Find out more about OHTAC, its application process, and its recommendations [here](#).

Technologies Currently Under Review

Implantable Cardioverter defibrillator	Hydrophilic Catheters
Gastric Electrical Stimulation	Energy Delivery Systems for treatment of Benign Benign Prostatic Hyperplasia (BPH)
Functional Brain Imaging (includes Magnetic Resonance Spectroscopy and Magnetoencephalography)	Routine Eye Exams
Methadone Compliance Testing	Bone Densitometry
Integrated HTPA on cardiac imaging technologies	In-Vitro Fertilization
Breast Cancer Screening Modalities Other than Mammography: Digital Mammography and MRI	Horizon Scanning: Nanotechnology
	Optimal Health System Design for Screening

Previous OHTAC Recommendations

[Computed Tomography Radiation Safety Issues in Ontario](#)

June 2006

[Polysomnography in Patients with Obstructive Sleep Apnea](#)

June 2006

[Portable Bladder Ultrasound](#)

April 2006

[Artificial Disc Replacement for Lumbar and Cervical Degenerative Disc Disease](#)

April 2006

[Magnetic Resonance Imaging \(MRI\) Environment Safety in Ontario](#)

April 2006

[Extracorporeal Photophoresis \(ECP\)](#)

March 2006

[Enhanced External Counterpulsation \(Update\)](#)

March 2006

[Metal-on-metal Hip Resurfacing](#)

February 2006

[Midurethral Slings for Women with Stress Urinary Incontinence](#)

February 2006

[Ultrasound Screening for Abdominal Aortic Aneurysm](#)

January 2006

[Coil Embolization for Intracranial Aneurysms \(Update\)](#)

January 2006

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Interim Report on Drug Eluting Stents	December 2005
Endovascular Repair of Descending Thoracic Aortic Aneurysm	November 2005
Air Cleaning Technologies	November 2005
Biventricular Pacing (Cardiac Resynchronization Therapy)	September 2005
Arthroscopic Lavage and Debridement	September 2005
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Interim Report on Endovascular Repair of Abdominal Aortic Aneurysm (EVAR)	July 2005
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Computer-Assisted Hip and Knee Arthroplasty: Navigation and Robotic Systems	March 2004
Computer-Assisted Surgery Using Telem manipulators	March 2004
Tension-free Vaginal Tape for Stress Urinary Incontinence	February 2004
Patient Monitoring System for MRI	February 2004

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