

OHTAC E-Bulletin

Seeking the best in health technologies for Ontario



In this issue

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

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

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

Contact Information

Medical Advisory Secretariat
Ontario Ministry of Health and Long-Term Care
20 Dundas Street West, 10th Floor,
Toronto, ON, Canada,
M5G 2N6

Tel: 416-314-1092

Fax: 416-325-2364

Email: MASinfo@moh.gov.on.ca

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Metal on metal total hip resurfacing arthroplasty

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

Total hip replacement (THR) is the standard method and one of the most effective orthopedic procedures performed for late middle-aged and elderly patients with severe degenerative diseases of the hips. The main underlying causes of degenerative hip disease are osteoarthritis and rheumatoid arthritis. As indications for THR began to include younger patients and those with a more active lifestyle, the longevity of the implant became a concern.

Generally, THR satisfies the requirements of a large number of older patients. However, the outcomes of THR in younger people are generally not as good as in older people. Young people are more active and use their joints much more than older people.

Metal-on-metal total hip resurfacing arthroplasty is a bone-conserving alternative procedure that restores normal joint biomechanics and load transfer. This technique appears to have appealing characteristics, is less invasive compared to THR, and has been used around the world for more than 10 years, specifically in the United Kingdom and other European countries.

Key Findings

The Medical Advisory Secretariat of the Ontario Ministry of Health and Long-Term Care conducted its standard systematic review and critical appraisal of the published literature and concluded that:

- MOM hip resurfacing arthroplasty has been shown to be an effective arthroplasty procedure as tested in younger patients.
 - However, evidence for effectiveness is based only on 7 case series with short duration of follow-up (2.8–3.5 years). There are no RCTs or other well-controlled studies that compare MOM hip resurfacing with THR.
 - Revision rates reported in the MOM studies using implants currently licensed in Canada (hybrid systems, uncemented acetabular, and cemented femoral) range from 0.3% to 3.6% for a mean follow-up ranging from 2.8 to 3.5 years.
 - Fracture of the femoral neck is not very common; it occurs in 0.4% to 2.2% of cases (as observed in a short follow-up period).
 - Concerns remain over the potential adverse effects of metal ions. Longer-term follow-up data will help to resolve the inconsistency of findings on adverse effects, including toxicity and carcinogenicity.
- Patients with MOM hip arthroplasties are shown to be exposed to higher concentration of cobalt and chromium.

OHTAC Recommendations

OHTAC recommends the following with regard to the metal on metal total hip resurfacing arthroplasty.

- Given the lack of long-term follow up data for MOM hip arthroplasty, OHTAC cannot make a recommendation regarding its clinical utility or complication rates at this time.
- The decision to use a MOM hip resurfacing arthroplasty should be made between the surgeon and patient after weighing the benefits regarding pain and functional improvement against the uncertainty regarding long-term complications and revision rates. Full disclosure of this uncertainty should be included as part of an informed consent for patients undergoing this procedure.
- Since the implications of long-term exposure to metal ions, in particular chrome and cobalt, are unknown, full disclosure of this fact should be included as part of an informed consent for patients undergoing this procedure.
- Patients undergoing MOM hip resurfacing arthroplasty should be followed using established administrative databases for the evaluation of long-term outcomes.
- This technology should be re-examined once longer-term outcomes are available.

Implications

Metal on metal total hip resurfacing arthroplasty seems to have the potential to become a viable option in young patients if the advantages of hip resurfacing as compared to THR in younger patients are realized in long term follow-up.

Currently, this procedure is performed in a number of orthopedic centres across Canada and is billed under existing codes for THR. Surface replacement is a more technically difficult operation to perform and requires expertise and skills beyond those required for conventional THR.

The full downloadable version of the February **OHTAC recommendation** for this technology can be found [here](#)

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

Advanced electrophysiologic mapping and catheter ablation for the treatment of complex cardiac arrhythmias

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

An arrhythmia is a deviation from the normal rate or rhythm of heartbeat resulting from abnormal electrical activities inside the heart. The first line treatment for arrhythmias is drug therapy. When drugs fail to control the arrhythmia, a curative ablation may be performed to destroy the heart tissues causing or sustaining the arrhythmia.

There are 2 approaches to ablation: catheter ablation or surgical (operative) ablation. Surgical ablation such as the Cox-maze procedure, involving extensive cutting and sewing of heart tissues, is more invasive. Catheter ablation involving the delivery of radiofrequency energy via a percutaneous catheter system under the guidance of x-ray fluoroscopy, does not require open surgery, and has been used to replace surgical ablation in many patients. However, this conventional approach in catheter ablation using x-ray fluoroscopy has not been found to be effective for the treatment of complex arrhythmias such as chronic atrial fibrillation or ventricular tachycardia. Advanced non-fluoroscopic mapping systems have been developed for guiding these complex arrhythmias.

Key Findings

- Atrial fibrillation (AF) is the most prevalent complex arrhythmias affecting 0.8% of Ontarians 20 to 79 years old, resulting in increased risks of stroke and congestive heart failure. Based on the prevalence of AF, it is estimated that 2,230 to 11,500 residents of Ontario with drug-refractory atrial fibrillation may benefit from catheter ablation.
- Based on results from randomized controlled trials (RCT), catheter ablation using advanced mapping systems was found to be effective in treating patients with drug-refractory atrial fibrillation compared to drug therapy alone.
- Compared to fluoroscopy-guided ablation, non-fluoroscopic advanced mapping systems significantly reduced radiation exposure, which is a concern in the ablation of complex arrhythmias since such procedures usually last 4 hours or longer.
- A large observational study of advanced mapping-guided ablation in 589 patients with drug refractory atrial fibrillation reported good results (84%, 79%, and 78% of patients did not have recurrence of atrial fibrillation at one, two, and three years respectively after the procedure).
- There is high quality evidence supporting the use of surgical ablation in patients with atrial fibrillation who are undergoing concomitant heart surgery (usually for mitral valve replacement or repair).

OHTAC Recommendations

OHTAC recommends the following with regard to Advanced electrophysiologic mapping and catheter ablation for the treatment of complex cardiac arrhythmias:

- use of advanced mapping in the ablation of complex arrhythmias, particularly drug-refractory atrial fibrillation, according to specific indications.
- increased access to ablation with advanced mapping so the prevalent population with drug-refractory atrial fibrillation can be treated over 5 years.
- restricting ablation of complex arrhythmias using advanced mapping to designated cardiac and pediatric centres that have the necessary expertise and critical volume to:
 - increase the success rate of ablation
 - minimize the necessity for drug therapy after ablation
 - minimize the need for subsequent re-ablation procedures

Implications

Experts informed MAS that eight of the cardiac centres in Ontario have at least one advanced mapping system.

An estimated minimum of 2,230 additional ablations using an advanced mapping system is required to meet the prevalent need of atrial fibrillation (for those 20-79 years). If the ministry implements the additional procedures over 5 years, an estimated upfront budget impact of \$5 million to

\$6 million per year can be expected. When saving from the avoidance of anti-arrhythmic drugs is taken into consideration, the net budget impact is estimated at \$4.9 million in the first year, decreasing to an estimated \$3.7 million in the fifth year.

The full downloadable version of the December **OHTAC recommendation** for this technology can be found [here](#)

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

Hydrophilic Intermittent Catheters

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

Catheterization is a risk factor for developing urinary tract infections. Approximately 40% of nosocomial infections are attributed to urinary tract infections, and of the urinary tract infections almost 80% are attributed to catheterization with intermittent or indwelling catheters.

There are a variety of reasons why an individual may require intermittent catheterization, including patients with neurogenic bladder due to damage to the nervous system, post-surgical patients or some patients with prostatic enlargement. Intermittent catheters are used in the community, and in acute

care, complex continuing care and long-term care settings.

Hydrophilic catheters have a polymer coating which makes the catheter slippery when wet. The hypothesis is that the slippery hydrophilic coating on the catheter will decrease friction, thereby decreasing the risk of injury and the rate of urinary tract infections.

Key Findings

Five randomized controlled trials were identified that compared hydrophilic intermittent catheters to standard intermittent catheters. All 5 trials were of low quality due to substantial limitations, including small sample sizes, uneven groups at baseline, inconsistent results and losses to follow-up.

In terms of both the rate of urinary tract infections and patient satisfaction, the results were inconsistent. It is not possible to draw any definitive conclusions from these studies due to their limitations and inconsistent results.

OHTAC Recommendations

OHTAC recommends the following with regard to hydrophilic intermittent catheterization:

- The health sector be informed that at this time there is insufficient evidence to determine the effectiveness of hydrophilic catheters compared to standard catheters in terms of the rate of urinary tract infections and quality of life and does not recommend their use.

Implications

Patients using intermittent catheters catheterize 4-5 times per day on average. Thus, if there was evidence of effectiveness, the cost for an individual using hydrophilic catheters would be \$3,000-\$9,000 per patient year compared to \$1,500-\$2,800 per patient year for standard catheters.

The full downloadable version of the March **OHTAC recommendation** for this technology can be found [here](#)

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

Previous OHTAC Recommendations

2006

October	In Vitro Fertilization and Multiple Pregnancies
August	Energy Delivery Systems for Treatment of Benign Prostatic Hyperplasia
August	Gastric Electrical Stimulation
July	Negative Pressure Wound Therapy - Updated
June	Computed Tomography Radiation Safety Issues in Ontario
June	Polysomnography in Patients with Obstructive Sleep Apnea
April	Intravascular Ultrasound to Guide Percutaneous Coronary Interventions
April	Portable Bladder Ultrasound
April	Artificial Disc Replacement for Lumbar and Cervical Degenerative Disc Disease
	- Updated
April	Magnetic Resonance Imaging (MRI) Environment Safety in Ontario
March	Hydrophilic Intermittent Catheters
March	Extracorporeal Photophoresis (ECP)
February	Metal-on-Metal Total Hip Resurfacing Arthroplasty
February	Midurethral Slings for Women with Stress Urinary Incontinence - Updated
January	Ultrasound Screening for Abdominal Aortic Aneurysm
January	Coil Embolization for Intracranial Aneurysms (Updated)

2005

December	Advanced Electrophysiologic Mapping and Catheter Ablation for the treatment of complex cardiac arrhythmias
December	Positron Emission Tomography for the Assessment of Myocardial Viability
December	Automated External Defibrillators
November	Endovascular Repair of Descending Thoracic Aortic Aneurysm

November	Air Cleaning Technologies
October	Appropriate Utilization of Integrated Health Technologies to treat Osteoarthritis of the Knee
October	Drug Eluting Stents (DES)
September	Biventricular Pacemakers (Cardiac Resynchronization Therapy)
August	Hyperbaric Oxygen Therapy for Non-Healing Ulcers in Diabetes Mellitus
June	Arthroscopic Lavage and Debridement for Osteoarthritis of the Knee
June	Intra-Articular Viscosupplementation With Hylan G-F 20 for Treatment of Osteoarthritis Knee Pain
June	Total Knee Replacement
June	Physiotherapy Rehabilitation after Total Knee or Hip Replacement
May	Intrathecal Pumps for Baclofen Infusion for Spasticity
May	Interim Report on Endovascular Repair of Abdominal Aortic Aneurysms (EVAR)
April	Osteogenic Protein-1 for Long Bone Nonunion
April	Multi-Detector Computed Tomography Angiography for Coronary Artery Disease
March	Spinal Cord Stimulation for the Management of Neuropathic Pain
March	Sacral Nerve Stimulation for the Management of Urge Incontinence, Urgency-Frequency, Urinary Retention and Fecal Incontinence
March	Deep Brain Stimulation in Parkinson's Disease and Other Movement Disorders
January	Bariatric Surgery

2004

December	Balloon Kyphoplasty
December	Vacuum-assisted closure (V.A.C. therapy) for chronic wounds (Updated : please see July 2006 Recommendation)
October	Thermal Balloon Endometrial Ablation for Dysfunctional Uterine Bleeding (TBEA)
September	Primary Angioplasty
August	Bispectral Index Monitor
June	Repetitive Transcranial Magnetic Stimulation (rTMS) for the Treatment of Major Depressive Disorder
June	Radiofrequency Ablation for hepatocellular carcinoma or primary liver cancer
May	Indication for Positron Emission Tomography Imaging of a Single Pulmonary Nodule
March	Pyrocarbon Finger Joint Implants
March	Endovascular Coil Embolization for the Treatment of Intracranial Aneurysm (Updated : please see January 2006 Recommendation)
March	Computer assisted Surgery using Telesurgical Manipulators
March	Computer assisted Hip and Knee Arthroplasty : Navigation and Robotic Systems
March	Video-assisted Laryngoscopy for Tracheal Intubation
February	Bone Morphogenetic Proteins and Artificial Disc use in spinal surgery for degenerative disc disease
February	Patient Monitoring System for Magnetic Resonance Imaging (MRI)
February	Tension-free Vaginal Tape for Stress Urinary Incontinence in Women (Updated : please see February 2006 Recommendation)

The OHTAC *E-bulletin* is intended to provide health care service providers and administrators with briefs on the latest OHTAC recommendations, reviews and findings.

To subscribe or unsubscribe to the *E-bulletin*, please contact MAS using the information below:

Medical Advisory Secretariat,
Ontario Ministry of Health and Long-Term Care
20 Dundas Street West, 10th Floor
Toronto, ON, Canada M5G 2N6

Tel: 416-314-1092 Fax: 416-325-2364 TTY: 1-800-387-5559

Email: MASinfo@moh.gov.on.ca

Web http://www.gov.on.ca/english/providers/program/mas/mas_mn.html

Ontario
Health
Technology
Assessment
Committee