INAHTA Brief

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Title Microinvasive Glaucoma Surgery (MIGS)

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Reference Health Technology Assessment Report
http://www.moh.gov.my/penerbitan/mymahtas/HTA/HTA%20Microinvasive%20glaucoma%20surgery-Final%20Full%20Report%20edited3%20(11.10.2017).pdf

Aim

To assess the effectiveness, safety, organizational and economic implication of using MIGS for treatment of patients with mild to moderate open angle glaucoma (OAG).

Conclusions and results

Fair to good level of retrievable evidence:

Safety: MIGS is considered as a safe procedure with minimal complications. It is safer than Trabeculectomy. Most commonly reported complications were related to the Stent such as malposition or obstruction, transient hyphema, transient early intraocular pressure (IOP) spike, transient hypotony, and peripheral anterior synechiae (PAS).

Effectiveness: MIGS using iStent, Trabectome, Hydrus Microstent, GATT, ELT, CyPass Micro-Stent, ECP, and XEN gel stent were effective in reducing post-operative IOP and reduces the dependency on topical glaucoma medications (TGM) in patients with mild to moderate OAG. Most studies reported >20% reduction in IOP and topical glaucoma medications. The magnitude of IOP and TGM reduction were greater with higher pre-operative IOP (>21 mmHg) or number of iStent implanted. When compared to conventional treatment, MIGS (Hydrus Microstent, ELT, and ECP) were found to be at least as effective as Canaloplasty, SLT, and Trabeculectomy in reduction of post-operative IOP, respectively. In terms of success, although most studies reported moderate to high success rate, we were unable to compare the success rate between different types of MIGS due to lack of standardisation in defining success.

Ethical/social: Very limited retrievable evidence to suggest that there was no significant difference in QoL between Trabeculectomy and MIGS (iStent or Trabectome).

ORGANIZATIONAL: Surgeons/ ophthalmologists need to be trained to perform MIGS since it is a complex procedure. The porcine based XEN gel stent may not be socially acceptable to Muslims.

Economic:

There was no retrievable evidence on cost-effectiveness. However, a cost-analysis suggest that treating glaucoma patients with Trabectome, iStent, and ECP may be cost-saving when compared to monodrug, bidrug or tridrug therapy over six years period.

Recommendations (if any)

Based on the above review, MIGS has the potential to be a valuable option for management of patients with mild to moderate OAG. Hence, MIGS may be used for treatment of patients with mild to moderate OAG. However, clinicians need to identify which specific patients that may or may not benefit from a particular MIGS procedure. Criteria for patient selection should be developed. Records of patients on MIGS should be maintained by the treating clinicians. Clinicians should be credentialed and privileged to perform MIGS. Patient's outcome research is warranted on the long term basis. Cost implication should also be considered.

Methods

The following databases were searched through the Ovid interface: MEDLINE(R) Epub Ahead of Print, In-process and other Non-Indexed Citations and Ovid MEDLINE(R) 1946 to present, EBM Reviews-Cochrane Database of Systematic Reviews (2005 to March 2017), EBM Reviews-Cochrane Central Register of Controlled Trials (January 2017), EBM Reviews-Health Technology Assessment (4th Quarter 2016), EBM Reviews-NHS Economic Evaluation Database (1st Quarter 2016). Parallel searches were run in PubMed. The search was limited to humans and year 2000 till current. The last search was run on 15 March 2017. Additional articles were identified from reviewing the references of retrieved articles. Risk of bias was assessed using Critical Appraisal Skills Programme (CASP) checklist for Systematic Review (SR), using the Cochrane Collaboration's tool for assessing risk of bias for Randomised Controlled Trial (RCT), using Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Quasi-Experimental Studies (non-randomised experimental studies), and using NIH Quality Assessment Tool for Before-After (Pre-Post) Studies with no control group. All full text articles were graded based on guidelines from the United States/Canadian Preventive Services Task Force.

Further research/reviews required

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