Magnetic Resonance-Guided Focused Ultrasound Neurosurgery for Treatment-Refractory Obsessive–Compulsive Disorder

Recommendation

MONTH 20XX

Ontario Health

Draft Recommendation

Ontario Health, based on guidance from the Ontario Health Technology Advisory Committee, recommends against publicly funding magnetic resonance-guided focused ultrasound (MRgFUS) neurosurgery for people with treatment-refractory obsessive–compulsive disorder (OCD).

Rationale for the Recommendation

The Ontario Health Technology Advisory Committee made the above recommendation after considering the clinical, economic, and patient preferences and values evidence reported in the health technology assessment.[1]

The committee members noted that MRgFUS neurosurgery may convey clinical benefits such as treatment response and improved OCD symptoms, quality of life, and patient functioning for people with severe, treatment-refractory OCD. However, the body of evidence is limited and includes in its entirety a small number of cases. There is considerable uncertainty in the clinical benefit, and there is no comparative evidence. The committee concluded that there is a need for further evidence development to support the certainty of clinical effectiveness and encourages continued research on this treatment.

Due to the lack of comparative clinical evidence, a primary economic evaluation was not conducted, and the cost-effectiveness of MRgFUS neurosurgery is unknown. Publicly funding MRgFUS neurosurgery for people with treatment-refractory OCD in Ontario is estimated to increase costs by approximately $1.9 million over 5 years.

Ontario Health Technology Advisory Committee members considered the lived experience of patients with severe, treatment-refractory OCD and their care partners, who described the negative impact of OCD on their day-to-day activities, work and school, social life and family relationships, and mental health.

The committee reflected upon the lack of a clear care pathway for people with OCD overall; the current pathway is fragmented and difficult for patients to navigate. The committee supports efforts to strengthen the OCD care pathway in Ontario to enhance equity of care and improved access to evidence-based treatments.

Decision Determinants for Magnetic Resonance-Guided Focused Ultrasound Neurosurgery for Treatment-Refractory Obsessive–Compulsive Disorder

Overall Clinical Benefit

Effectiveness

How effective is the health technology/intervention likely to be (taking into account any variability)?

There is considerable uncertainty about the effectiveness of MRgFUS neurosurgery for severe, treatment-refractory OCD based on evidence from 2 small case series with a combined total of 17 patients. No comparative clinical evidence was available. However, the evidence from the case series suggests that MRgFUS neurosurgery may improve OCD symptoms, quality of life, and patient functioning and result in treatment response (Grading of Recommendations, Assessment, Development and Evaluations [GRADE] certainty of evidence: Very low). MRgFUS neurosurgery may have a technical failure rate of up to 25% and may not require re-treatment or follow-up interventions; however, the evidence is very uncertain, as no occurrences of re-treatment were reported (GRADE: Very low).

Safety

How safe is the health technology/intervention likely to be?

The evidence suggests that MRgFUS neurosurgery for severe, treatment-refractory OCD may have a favourable safety profile (GRADE: Very low); no occurrences of serious or persistent adverse events were reported, and it may have little to no effect on neurocognitive function (GRADE: Very low).

Burden of Illness

What is the likely size of the burden of illness pertaining to this health technology/intervention?

About 1% of adults have OCD,[2] and about one-third of those have severe symptoms.[3] An estimated 20% to 40% of people with OCD do not respond to evidence-based treatments despite many trials and combinations and are considered to have treatment-refractory OCD.[4,5]

Need

How large is the need for this health technology/intervention?

Severe OCD has an elevated risk of suicide, reduced quality of life, caregiver burnout, and chronic disability. OCD is a chronic condition and requires ongoing, comprehensive treatment, including exposure and response prevention psychotherapy and/or pharmacotherapy after neurosurgery.

Patient Preferences and Privacy

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?

Noninvasive MRgFUS neurosurgery is expected to align with patient preferences and values and may provide an additional surgical option for people who may not accept, be suited to, or be eligible for other surgeries.

Patients regarded MRgFUS neurosurgery as a last resort after exhausting multiple treatment options and emphasized the importance of having access to MRgFUS neurosurgery as a treatment option for severe, treatment-refractory OCD.

Autonomy, Privacy, Confidentiality, and/or Other Relevant Ethical Principles as Applicable

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?

Patients expressed that noninvasive MRgFUS neurosurgery allowed them to regain their independence and perform day-to-day activities with little to no support needed from care partners.

Equity and Patient Care

Equity of Access or Outcomes

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?

Neurosurgery for OCD is highly specialized and, appropriately, only provided in centres of expertise, with multidisciplinary teams and specialty equipment. Currently, this service is only available in Toronto, Ontario. Support services (e.g., travel grant) and care coordination are required as part of implementation to facilitate equitable access to MRgFUS neurosurgery for all eligible people in Ontario, especially those who must travel.

Patient Care

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?

Less than half of people with OCD seek treatment,[6] and there is no clear care or referral pathway for people with treatment-refractory OCD to undergo neurosurgery, nor for OCD care overall, in Ontario. People with OCD may experience stigma associated with mental illness.

Cost-Effectiveness

Economic Evaluation

How efficient is the health technology/intervention likely to be?

The cost-effectiveness of MRgFUS neurosurgery is unknown. No existing economic evidence was identified, and a primary economic evaluation was not conducted due to the lack of comparative clinical evidence.

Feasibility of Adoption Into Health System

Economic Feasibility

How economically feasible is the health technology/intervention?

Publicly funding MRgFUS neurosurgery for people with treatment-refractory OCD is estimated to increase costs to the province by approximately $1.9 million over the next 5 years.

Organizational Feasibility

How organizationally feasible is it to implement the health technology/intervention?

Two sites in Ontario have the equipment and expertise to offer MRgFUS neurosurgery. These 2 sites also provide other neurosurgeries for severe, treatment-refractory OCD. However, only 1 site is currently offering MRgFUS neurosurgery to eligible patients with treatment-refractory OCD from Ontario and across Canada and is expected to accommodate the demand in Ontario for this population.

References

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