NICE National Institute for Health and Care Excellence

NICE guidance

Deep brain stimulation for chronic, severe, treatment-resistant obsessive-compulsive disorder in adults

Interventional procedures guidance
Published: 28 April 2021

www.nice.org.uk/guidance/ipg693

1 Recommendations

1.1 Evidence on the safety and efficacy of deep brain stimulation for chronic, severe, treatment-resistant obsessive-compulsive disorder (OCD) in adults is inadequate in quality and quantity. Therefore, this procedure should only be used in the context of research. Find out what only in research means on the NICE interventional procedures guidance page.

1.2 Patient selection should be done by a multidisciplinary team experienced in managing OCD. It should include experts in psychiatry, neuropsychiatry, clinical psychology, neurology, neurosurgery and deep brain stimulation.

1.3 The procedure should only be done in centres with expertise in deep

brain stimulation and experience in managing OCD.

1.4 Further research should primarily be randomised controlled trials. It should clearly define the area of the brain that should be targeted in this procedure. It should also describe details of patient selection, comorbidities, and use of adjunctive therapies. Outcomes should include reduction in OCD symptoms, improvement in quality of life and any neuropsychiatric and cognitive effects.

2 The condition, current treatments and procedure

The condition

2.1 Obsessive-compulsive disorder (OCD) is a mental health condition in which a person has obsessive thoughts (repeated, unwanted and unpleasant thoughts, images or urges). The person feels compelled to carry out compulsive (repetitive) behaviours to try to relieve the unpleasant feelings brought on by the obsessive thoughts.

Current treatments

2.2 NICE's guideline on obsessive-compulsive disorder and body dysmorphic disorder describes the treatment of OCD. Treatment options include psychological interventions and drug treatment (usually selective serotonin reuptake inhibitors).

The procedure

2.3 Deep brain stimulation for OCD is done under general or local anaesthesia. A stereotactic frame may be used. MRI or CT imaging, or both, are used to identify the target area of the brain (commonly, the anterior limb of the internal capsule). Two small holes are drilled in the skull and electrodes are implanted into the target area. The electrodes are connected to an implantable neurostimulator by leads, which are

tunnelled under the skin of the neck and scalp. The neurostimulator is surgically placed into a subcutaneous pocket below the clavicle. Postoperative imaging is usually used to confirm the location of the electrodes. A handheld remote-control programming unit is used to turn the neurostimulator on or off and adjust stimulation parameters to find the right level of stimulation.

2.4 Although the mechanisms of action of deep brain stimulation are not fully understood, the aim of the procedure is to reduce the obsessive-compulsive thoughts and behaviours. A potential advantage of the procedure is that the stimulation can be adjusted according to the clinical effect and if necessary, stopped completely. It can be used as an adjunct to medication and as an alternative to neurosurgery for treatment-resistant OCD.

3 Committee considerations

The evidence

3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 12 sources, which was discussed by the committee. The evidence included 2 randomised controlled trials (both of which are also included in at least 1 of the meta-analyses), 2 meta-analyses, 2 systematic reviews (most of the patients who had deep brain stimulation in these reviews are also included in the meta-analyses), 1 non-randomised comparative study, 4 case series and 1 case report. It is presented in table 2 in the interventional procedures overview. Other relevant literature is in the appendix of the overview.

3.2 The professional experts and the committee considered the key efficacy outcomes to be: improvement in obsessive-compulsive disorder (OCD) symptoms and quality of life.

3.3 The professional experts and the committee considered the key safety outcomes to be: intracranial bleeding, infection, damage to adjacent brain structures, seizures, suicidal ideation, mood changes including

hypomania, and other psychiatric and cognitive effects.

3.4 Four commentaries from patients who had experience of this procedure were received, which were discussed by the committee.

Committee comments

3.5 The committee noted that many of the patients included in the studies had OCD for many years before having deep brain stimulation.

3.6 The committee was informed that there is a national network of clinicians with expertise in OCD, and experts from this group are consulted when people are referred for this procedure.

3.7 The committee was informed that this procedure might be an alternative to stereotactic ablative surgery.

3.8 The committee was informed that the safety profile of this procedure was similar to the safety profile of deep brain stimulation for other indications.

3.9 The committee was pleased to receive commentary from patients who had the procedure. These commentaries supported the use of the procedure.

ISBN: 978-1-4731-4095-0

Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.

Accreditation