

Title: Deep brain stimulation for dystonia and essential tremor

Agency: Medical Services Advisory Committee (MSAC)
MDP 106
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Aim:

To assess the safety, effectiveness and cost-effectiveness of deep brain stimulation (DBS) for dystonia and essential tremor, compared to no treatment.

Results and Conclusions:

Safety:

One RCT and 60 non-comparative studies were identified. Most adverse events with DBS were mild and could be resolved with or without minor intervention, such as changing the stimulation parameters.

Effectiveness:

For primary generalised dystonia there was a weighted mean improvement of 60 per cent in BFMDRS clinical score after DBS ($P < 0.0001$). For focal dystonia all TWSTRS sub-scores showed statistically significant improvement after DBS ($P < 0.00001$ for all cases). DBS may be effective for mixed secondary dystonia but its effectiveness for other secondary dystonia was less clear. In essential tremor for all rating scales used there was a statistically significant improvement after DBS.

Cost Effectiveness:

Due to limited effectiveness data the base case considered only the resource use. The DBS cost per patient is \$91,250 for essential tremor and \$136,278 for dystonia, with the annual total cost of DBS in Australia estimated to be \$8.201 million.

Advice:

MSAC has considered the safety, effectiveness and cost effectiveness of DBS as end stage treatment for primary and secondary dystonia and essential tremor. This treatment is indicated where other therapies are insufficient and the patient has severe disability including inability to feed or toilet independently.

DBS is relatively safe in the context of the clinical condition and the net benefit of the treatment. MSAC considers the treatment is sufficiently effective in these conditions. Robust information on cost effectiveness is unlikely to emerge but the total cost is acceptable. MSAC recommends public funding of DBS for primary and secondary dystonia and essential tremor in patients where other therapies are insufficient and the patient has severe disability including inability to feed or toilet independently.

The Minister for Health and Ageing noted MSAC's advice on 28 August 2008.

Methods:

The evidence for DBS in the treatment of dystonia and essential tremor was systematically assessed. EMBASE, PubMed and several other databases were searched from inception to August 2007.