TITLE: Battery Replacement and Maintenance of Deep Brain Stimulators: Guidelines and Recommendations

DATE: 19 August 2013

RESEARCH QUESTIONS

1. What are the evidence-based guidelines regarding battery replacement surgery for deep brain stimulators?

2. What are the evidence-based guidelines regarding the maintenance of deep brain stimulators?

KEY MESSAGE

One health technology assessment providing information on battery replacement and maintenance of deep brain stimulators was identified; no evidence-based guidelines were identified.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2013, Issue 7), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2008 and August 7, 2013. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by evidence-based guidelines.

One health technology assessment providing information on battery replacement and maintenance of deep brain stimulators was identified. No systematic reviews, meta-analyses, or evidence-based guidelines were identified. Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

The included health technology assessment\(^1\) was published in Ireland. It provided little information with regard to deep brain stimulator battery replacement and maintenance. The 2012 report stated there was a recent recommendation to replace non-rechargeable batteries with rechargeable units when the battery life was depleted. Battery replacement requires the services of a neurosurgeon, with a one to two-night hospital stay for the patient. No details were provided regarding the issue of follow-up surgery with the same neurosurgeon who performed the original implant procedure compared with follow-up by a different neurosurgeon.
REFERENCES SUMMARIZED

Health Technology Assessments


See: Figure 10: Battery replacement; and Section 4.2.2: Duration of procedures and staff requirements

Systematic Reviews and Meta-analyses
No literature identified

Guidelines and Recommendations
No literature identified

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APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies


Clinical Practice Guidelines


Review Articles


Additional References

