Title: Proton Beam Therapy: Clinical and Cost-Effectiveness and Guidelines for Use

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Research question:

1. What is the clinical effectiveness of proton beam therapy for various indications including different types of cancer?

2. Is there evidence that proton beam therapy is clinically more effective for specific indications when compared with conventional treatment options?

3. What is the cost effectiveness of proton beam therapy?

4. What are the guidelines for use of proton beam therapy?

Methods:

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 3, 2008), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international HTA agencies, and a focused Internet search. Results include articles published between 2003 and July 2008, and are limited to English language publications only. Filters were applied to limit the retrieval to health technology assessment, systematic reviews, meta-analyses, clinical guidelines, economic studies, and randomized controlled trials studies. Internet links are provided, where available.

Results:

HTIS 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 economic evaluations, randomized controlled trials, and evidence-based guidelines.
Four systematic reviews, four economic evaluations, one randomized controlled trial and 24 observational studies were identified from the literature search results. No relevant health technology assessments or evidence-based clinical practice guidelines regarding proton beam therapy were identified. Additional articles of interest may be found in the Appendix.

Health technology assessments
No literature identified

Systematic reviews and meta-analyses

Cancer


Cerebral arteriovenous malformations


Economic analyses and cost information

Cancer


**Randomized controlled trials**

*Age-related macular degeneration*


**Observational studies**

*Cancer*


Cerebral arteriovenous malformations

Benign brain tumors


Central nervous system tumors


Lung lesions


Guidelines and recommendations
No literature identified

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Appendix – further information:

Guidelines and recommendations


Review articles

Cancer


Age-related macular degeneration


General


