



TITLE: CyberKnife for Patients with Cancer of the Lung, Central Nervous System, or Intra-Abdomen: Clinical and Cost-Effectiveness

DATE: 7 January 2010

RESEARCH QUESTIONS:

1. What is the clinical effectiveness of CyberKnife for patients with cancer of the lung, central nervous system, or intra-abdomen?
2. What is the cost-effectiveness of CyberKnife for patients with cancer of the lung, central nervous system, or intra-abdomen?

METHODS:

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 4, 2009), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between January 2009 and December 2009. No filters were applied to limit the retrieval by study type.

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:

This report is an update to a peer-reviewed summary with critical appraisal published in September 2009.¹ The current report includes articles published about CyberKnife since May 2009, which was the final search date of the previous report.

Disclaimer: The Health Technology Inquiry Service (HTIS) is an information service for those involved in planning and providing health care in Canada. HTIS responses are based on a limited literature search and are not comprehensive, systematic reviews. The intent is to provide a list of sources of the best evidence on the topic that CADTH could identify using all reasonable efforts within the time allowed. HTIS responses should be considered along with other types of information and health care considerations. The information included in this response is not intended to replace professional medical advice, nor should it be construed as a recommendation for or against the use of a particular health technology. Readers are also cautioned that a lack of good quality evidence does not necessarily mean a lack of effectiveness particularly in the case of new and emerging health technologies, for which little information can be found, but which may in future prove to be effective. While CADTH has taken care in the preparation of the report to ensure that its contents are accurate, complete and up to date, CADTH does not make any guarantee to that effect. CADTH is not liable for any loss or damages resulting from use of the information in the report.

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No health technology assessments, systematic reviews, randomized controlled trials, controlled clinical trials, or economic evaluations about CyberKnife were identified. Consistent with the methodology of the previous report,¹ observational studies that included a comparator group were included. No observational studies comparing CyberKnife to other therapies for tumors of the central nervous system, lung, or intra-abdomen were identified. Additional information that may be of interest has been included in the appendix.

OVERALL SUMMARY OF FINDINGS:

No relevant articles were identified; therefore no summary regarding the clinical and cost-effectiveness of CyberKnife for patients with cancer of the lung, central nervous system, or intra-abdomen can be presented.

REFERENCES:

Systematic reviews and meta-analyses

1. Boudreau R, Clark M, Nkansah E. *TomoTherapy, Gamma Knife, and CyberKnife Therapies for Patients with Tumours of the Lung, Central Nervous System, or Intra-abdomen: A Systematic Review of Clinical Effectiveness and Cost-Effectiveness* [Internet]. Ottawa: Canadian Agency for Drugs and Technologies in Health; 2009. (Health technology assessment rapid review). [cited 2010 Jan 4]. Available from: http://www.cadth.ca/media/pdf/M0008_Radiation_Therapy_for_Cancer_L3_e.pdf

Randomized controlled trials

No literature identified.

Controlled clinical trials

No literature identified.

Observational studies

No literature identified.

Economic evaluations

No literature identified.

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APPENDIX – FURTHER INFORMATION:

Health technology assessments

2. Mueller-Riemenschneider F, Schwarzbach C, Bockelbrink A, Ernst I, Vauth C, Willich SN, Schulenburg JM Graf von der. *Medical and health economic assessment of radiosurgery for the treatment of brain metastasis* [Internet]. Cologne: German Agency for Health Technology Assessment, German Institute for Medical Documentation and Information (DAHTA DIMDI); 2009. [cited 2010 Jan 4]. German.
English summary available from:
http://portal.dimdi.de/de/hta/hta_berichte/hta225_summary_en.pdf
English abstract available from:
http://portal.dimdi.de/de/hta/hta_berichte/hta225_abstract_en.pdf

Additional references

3. *One Ontario one cancer system* [Internet]. Toronto: Cancer Care Ontario. Ontario introduces CyberKnife robotic radiosurgery at Juravinski Cancer Centre; 2009 Nov 26 [cited 2010 Jan 4]. Available from:
<http://www.cancercare.on.ca/cms/one.aspx?portalId=1377&pageId=57985>
Backgrounder available from:
<http://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=58029>