



Title Conformal Radiotherapy, November 2001

Agency MSAC, Medical Services Advisory Committee

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Aim

To assess the safety and effectiveness of conformal radiotherapy (CRT) and intensity modulated radiation therapy (IMRT) using multileaf collimators (MLCs) to treat cancer and under what circumstances such services should be supported with public funding.

Conclusions and results

Safety: Tolerance of normal tissues is the limiting factor for the dose of radiation that can be delivered to the tumor. CRT aims to limit exposure of normal tissues to radiation and increase the dose to the tumor. In treating prostate cancer some randomized evidence suggests that delivery of similar doses using CRT may result in reduced toxicity than that experienced when using conventional radiotherapy.

Effectiveness: Based on a few randomized trials, data show that CRT efficacy is similar to conventional radiotherapy when delivering similar doses to treat prostate cancer. Higher doses delivered by CRT may result in greater efficacy for prostate cancer patients. However, further randomized evidence is needed in this area.

Cost-effectiveness: The main focus of the cost implications for conformal radiotherapy was the use of MLCs in treating patients with cancer. MLCs, in comparison to shielding blocks, can decrease the average duration of radiation treatment, increasing linear accelerator productivity and patient throughput. MLCs also reduce (or eliminate) the need to manufacture blocks, reducing labor and supply costs. Based on the additional costs of MLCs alone, CRT appears to be both more effective and less costly in some patient groups.

Quality assurance, occupational health and safety: The increased sophistication of technology, specifically in MLCs and electronic portal imaging, appears to provide some occupational health and safety benefits for both radiotherapy staff and patients.

Recommendations

Public funding under the Australian Medicare Benefits Schedule should be supported for conformal radiotherapy. Intensity modulated radiation therapy should be reviewed at a later date when substantial additional data relating to safety, effectiveness, and cost-effectiveness are available.

Method

MSAC conducted a systematic review of medical literature until the end of March 2001 using biomedical electronic databases, existing reviews, the Internet, and international health technology assessment organization websites. This review sought data on CRT, primarily in the treatment of prostate cancer, but also in the treatment of other cancer indications.