

Title:	Conformal Radiotherapy - November 2001
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Aim

To assess the safety and effectiveness of Conformal Radiotherapy (CRT) 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 tumour. CRT aims to limit exposure of normal tissues to radiation and increase the dose to the tumour. In treating prostate cancer some randomised 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 limited number of randomised trials, data shows that CRT results in similar efficacy to conventional radiotherapy when delivering similar doses in the treatment of prostate cancer. Higher doses delivered by CRT may result in increased efficacy for prostate cancer patients however further randomised evidence is needed in this area.

Cost effectiveness

The main focus of the cost implications for conformal radiotherapy was the application of multileaf collimators in the treatment of patients with cancer. Multileaf collimators (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 labour 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 and Occupational Health and Safety

Increases in the sophistication of technology, specifically MLCs and electronic portal imaging, appear to provide some occupational health and safety benefits for both radiotherapy staff and patients.

Recommendation

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 organisation websites. This review sought data on CRT, primarily in the treatment of prostate cancer, but also in the treatment of other cancer indications.