Title:	**Brachytherapy for the treatment of prostate cancer**
Agency:	**Medical Services Advisory Committee (MSAC)** **Mail Drop Point 106** **Commonwealth Department of Health and Ageing** **GPO Box 9848 Canberra ACT 2601 Australia** **http://www.msac.gov.au**
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The procedure

Brachytherapy is the implantation of radioactive sources in or near tumours. The assessment considers permanent implants of radioactive iodine (I 125).

Aim

To assess the safety, effectiveness and cost-effectiveness of brachytherapy for treating early localised prostate cancer compared with radical prostatectomy (RP), external beam radiation therapy (EBRT), and no initial treatment or deferred treatment (active surveillance).

Conclusions and results

Safety

The evidence suggests brachytherapy is comparable to or better than RP and EBRT in terms of sexual functioning after treatment, and showed a relative advantage over RP in terms of rates of post-treatment urinary continence. However, brachytherapy may result in higher rates of irritative or obstructive urinary symptoms than EBRT. Disparate findings were reported regarding the relative advantage, disadvantage or comparability of brachytherapy and other treatments in terms of bowel/rectal functioning.

Effectiveness

The evidence available to date does not demonstrate a difference in survival or disease progression between brachytherapy, RP and EBRT in patients with early localised prostate cancer. A comparison of brachytherapy and active surveillance was not possible.

Cost-effectiveness

A simple cost analysis suggests that direct costs of brachytherapy ($14,050) are higher than RP ($10,137) or ERBT ($9,266). The analysis does not take into account the potential health benefits provided by the technology. Further evidence regarding the safety and clinical effectiveness of brachytherapy is required before a formal cost-effectiveness analysis can be conducted.

Recommendations

Following a reassessment of further evidence pertaining to the safety, effectiveness and cost-effectiveness of brachytherapy for the treatment of prostate cancer, interim public funding should continue for patients with prostate cancer meeting the following criteria:

- at clinical stages T1 and T2 with Gleason scores of less than or equal to 6, prostate specific antigen (PSA) of less than or equal to 10 ng/ml, gland volume less than 40 cc and with life expectancy of more than 10 years; and
- where the treatment is conducted at approved sites.

Method

MSAC conducted a systematic review of the biomedical literature (Medline; EMBASE; Pre-Medline; Current Contents; Cinahl; ACP Journal Club; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effectiveness; and Cochrane Controlled Trials Register) from 1999 to February 2005. Reference lists and health technology assessment websites were also searched. A simple cost analysis was conducted due to the limitations of the evidence for effectiveness.