

- Title** Particle Knife Treatment Using Iodine-125 Radioactive Source for Cancer
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- Reference** Technology Review Report - 015/2017, online:  
[http://www.moh.gov.my/index.php/database\\_stores/store\\_view\\_page/30/314](http://www.moh.gov.my/index.php/database_stores/store_view_page/30/314)

**Aim**

To evaluate the efficacy, safety, cost-effectiveness and organisational aspect of iodine-125 radioactive source for cancer.

**Conclusions and results**

This systematic review included eighteen articles related to efficacy and safety of this technology. The articles consisted of two RCTs, three quasi experimental studies, and thirteen pre and post intervention studies and three safety guidelines.

There were limited retrievable evidence to suggest iodine-125 seed implantation was effective in term of longer progression free survival, median survival and also response treatment in patient with NSCLC and pancreatic cancer as compared to control group. There was also reduction in pain.

There were two guidelines retrieved on the safety of discharging patient after the treatment with iodine-125 seed implantation. There was one guideline on the safety for cremation process. There were seed migration cases ranging from 0.43% to 17%. Only minor adverse events have been reported and were treated conservatively. No major adverse events and no mortality-related treatment were reported.

In term of hospitalisation stay, there was no significant difference between iodine-125 seed implantation and control group.

There was no cost-effectiveness study retrieved for any type of cancer. For breast cancer, the average fee per patient for radioactive seed localisation (RSL) is USD 195 (RM 760) versus USD 882 (RM 3400) for wire localisation (WL). In term of fee of treatment, the fee range between RM 3,900 to RM 30,000.

**Recommendations (if any)**

Based on this review, iodine-125 seed implantation is not recommended considering limited evidence and safety issues.

**Methods**

Electronic databases were searched through the Ovid interface: Ovid MEDLINE® In-process and other Non-indexed citations and Ovid MEDLINE® 1946 to present. Other databases were PubMed, Science Direct, and Cochrane

Library. Searches were also run in Google. It was used to search for additional web-based materials and information. Additional articles were identified from reviewing the references of retrieved articles. Last search was conducted on 20th November 2017.

**Further research/reviews required**

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**Written by**

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