

Systematic Review of Economic Evaluations on Stereotactic Ablative Radiotherapy for the Treatment of Early-Stage Non-Small Cell Lung Cancer



Maia FHA^a; Rozman LM^a; Carvalho HA^b; Soárez PC^a

^a Departamento de Medicina Preventiva, Faculdade de Medicina FMUSP, Universidade de Sao Paulo, Sao Paulo, SP, Brazil

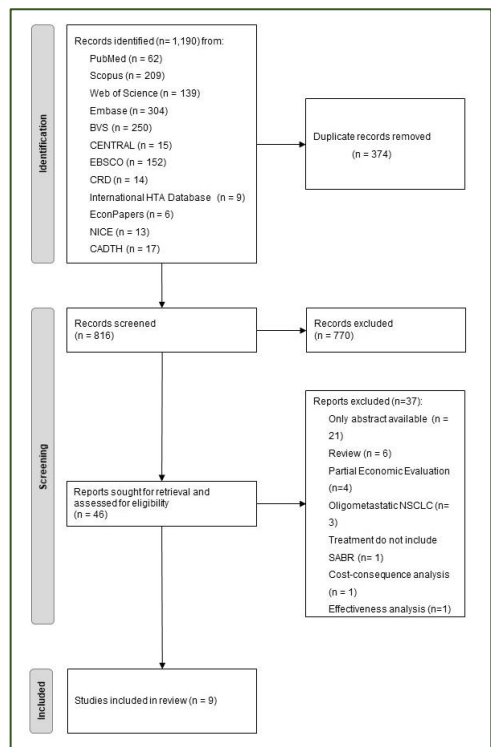
^b Departamento de Radiologia e Oncologia, Divisao de Radioterapia, Faculdade de Medicina FMUSP, Universidade de Sao Paulo, Sao Paulo, SP, Brazil

OBJECTIVES:

Stereotactic Ablative Radiotherapy (SABR) is recommended as gold-standard treatment for early-stage non-small cell lung cancer (NSCLC) in inoperable patients or who refuse surgery. However, it is unclear if this technique is cost-effective, and it is not widely disseminated. Thus, we aimed to perform a systematic review of full economic evaluations studies that compared SABR with another radiotherapy or surgical technique in the treatment of these patients, in order to review important methodological issues and inform the design of future studies.

METHODS:

A systematic review was conducted by two independent reviewers. The search was performed in 20 databases and registers (e.g., PubMed, Scopus and EMBASE) The eligible reports were retrieved, and data extracted from each one by using a customized spreadsheet. The reports were also assessed according to the Consolidated Health Economic Evaluation Reporting Standards Statement (CHEERS) checklist.



Flow diagram of study identification and selection

RESULTS:

The search retrieved 1,190 records. Nine reports were included in the final analysis. Seven of them were model-based analysis, of which five used a Markov model. Most of these used low-quality data at key parameters, as overall survival and recurrence. In the subgroup of the studies that compared only radiotherapy techniques (n=3), all of them favored SABR. In the subgroup of the studies that compared radiotherapy with surgical procedures (n=6), SABR was recommended in comparison to less aggressive techniques, while in comparison to lobectomy SABR was recommended in only one of four studies. According to CHEERS checklist, the proportion of items properly informed varied from 29% to 67%.

CONCLUSIONS:

The included studies support SABR as the recommended radiotherapy technique for early-stage NSCLC, and do not reach a unanimous decision about the use of the technique in comparison with surgical procedures. Nevertheless, the reports lack on methodological information, so it is not feasible to assess the transferability of economic evaluation results.