

Stereotactic radiotherapy for primary lung tumors

Vivian Pena Della Mea, Laura Viana de Lima, Tatiana Smiderle, Leonardo Calgaro, Livia Capuano Fogaça, Susana Seibel Steffens.

ABSTRACT

This paper reviews the efficacy of stereotactic body radiotherapy (SBRT) in primary lung tumors, comparing it with conventional treatments. SBRT uses focused ablative doses, minimizing toxicity by limiting the area of exposure. In early stages, especially in clinically inoperable patients, SBRT demonstrates superior results to conventional radiotherapy, with tumor control rates between 78% and 97%. In addition, it promotes vascular damage and induces an immune response, suggesting a better quality of life and a reduction in symptoms such as dyspnea and cough throughout treatment.

Keywords: Stereotactic radiotherapy, Lung cancer.

INTRODUCTION

The objective of this study is to ratify the efficacy of stereotactic body radiotherapy (SBRT) in some treatment groups, comparing data through a review of the medical literature, and showing that stereotactic treatment in primary lung tumors has obtained significant results in relation to conventional radiotherapy treatments and surgery.

MATERIALS AND METHODS

This study consists of a literature review of the therapeutic approach, which used the PubMed, Scielo, Medline, Lilacs and BMC Medicine databases, articles in Portuguese, English and Spanish. The criterion of choice was the relationship between early-stage lung cancer and radiotherapy, with a focus on stereotaxy.

FINDINGS

Stereotactic body radiotherapy (SBRT) has ablative doses that consider the dose per fraction of the radiotherapy, the time of exposure, and the radiosensitivity of the site. SBRT is applied to a diameter circumference of 1 to 3 cm around the tumor. The smaller the application margins, the lower the toxicity of the treatment. Conventional stage I radiotherapy has inferior results to surgical treatment, with a local recurrence rate of up to 70%. SBRT has a better prognosis and specificity, corroborating with damage to the vasculature that leads to endothelial and microcirculation lesions and apoptosis, in addition to an induction of the immune response against the tumor. The target is patients without clinically inoperable stage I and II lymph node involvement, with tumors up to 10 cm. There are three main groups of patients:



low surgical risk, high surgical risk, and clinically inoperable. Stereotactic radiotherapy is an alternative with better rates of tumor control (78%-97%) and better acceptance, even in the elderly. There is research that relates stereotactic radiotherapy with better quality of life and decreased symptoms such as dyspnea and cough in one year of therapy.

FINAL CONSIDERATIONS

Stereotactic treatment in primary lung tumors has obtained significant results in relation to conventional radiotherapy treatments and surgery. The prognosis and survival rate are relatively better, but it is important that more comparative studies are done to evaluate this therapy.



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