

عنوان مقاله:

Dosimetric Comparative Study between Single and Dual Isocenter Stereotactic Body Radiotherapy Plans in Treatment of Multiple Lesions Non-Small Cell Lung Cancer Patients

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خلاصه مقاله:

Introduction: stereotactic body radiotherapy (SBRT) is the most proper treatment for multi lesions non-small cell lung cancer (NSCLC) for enhanced good coverage and minimizing dose to organs at risk (OARs). This study aims to compare single and dual isocenter SBRT plans and discuss which technique we can use in multi lesions NSCLC. Material and Methods: Ten patients with multi targets NSCLC underwent two different SBRT treatment planning techniques including single isocenter and dual isocenter. We quantitatively assessed plans qualities by dose-volume metrics. Conformity index (CI), Confirmation Number (CN), heterogeneity index (HI), gradient distance (GD), Gradient index (GI), and maximum percentage dose at ۲cm all around PTV () were gathered, tallied, and statistically examined. OARs were evaluated and the dose to the normal lung was evaluated using V_5 , V_{10} , V_{20} , and mean lung dose (MLD). Results: There is an insignificant difference between single and dual isocenter plans in CI, CN, HI, GD, GI, and dose spillage where the mean distance between two lesions was 5.50 ± 1.50 cm, and the mean total volume of the planning target volume (PTV) was 42.60 ± 21.33 cc. For single and dual isocenter plans, the median MLD was $4.5(2-16)$ Gy and $4(2-16)$ Gy respectively ($p=0.25$). Conclusion: Plan quality of single isocenter was equal to dual isocenter for SBRT treatment of multi lung lesions with maximum distances between them was ۱۰ cm. Dual isocenter took time during (setup and matching for cone beam computed tomography (CBCT

کلمات کلیدی:

Stereotactic Body Radiotherapy, VMAT, Lung cancer

لینک ثابت مقاله در پایگاه سیویلیکا:

